The Biological Engineers:

Health Creation and Promotion in the United States, 1880-1920

by

Kate Mazza

A Dissertation submitted to the Graduate Faculty in History
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy, The City University of New York

2013

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This manuscript has been read and accepted for the Graduate Faculty in History in satisfaction of the Dissertation requirement for the degree of Doctor of Philosophy.

Martin J. Burke

_____	_____
Date	Chair of Examining Committee

Helena Rosenblatt

_____	_____
Date	Executive Officer

Timothy Alborn
Kathleen McCarthy
Gerald Markowitz
Megan Elias

Supervisory Committee

THE CITY UNIVERSITY OF NEW YORK

Abstract

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At the turn of the twentieth century the emerging field of professionals called "biological engineers" proposed individualized, prescribed physical training and health guidance based on physical examinations. They wanted to apply higher standards of health to people of all classes because they recognized that the college-educated as well as the unskilled, the immigrant as well as the native born, adults as well as children were subject to physical ailments and neurasthenia. Urbanization, the division of labor and intensive schooling contributed to these health problems for the majority of Americans of all classes.

Dr. Dudley Sargent's system of physical training aimed to institutionalize biological engineering at schools and colleges. As Physical Director of Harvard University, he conducted anthropometric measurements and medical examinations to prescribe exercise on pulley-weight machines of his own creation. His system was suitable for most people, in contrast to competitive sports, which were increasingly popular on the college campus. However, Sargent's system was too costly and time-consuming for most public primary and high schools. To fill the void in health supervision, biological engineers supported school hygiene initiatives. While first focused on the school environment, by the early 1900s school hygiene programs shifted to examine children for communicable disease and "remediable defects."

These programs were popular and widespread, but the endeavor never proved to be as organized, as standardized or as thorough and extensive as they wanted. Negative reactions from the subjects of the programs, internal conflicts and a lack of unified opinions weakened the field. Additionally, there were tremendous difficulties in applying such a comprehensive program on a large scale. Even as physical training and hygiene laws were passed in many states, by the late 1910s physical education became demedicalized, the biological engineering vision became diluted and the role was fragmented into other specializations.

Acknowledgements

I would like to thank my dissertation committee comprised of my advisor, Martin Burke, Tim Alborn, Kathleen McCarthy, Megan Elias and Jerry Markowitz along with Marta Petrusewizc, Joshua Freeman, Evelyn Ackerman, Andrew Robertson, John Talbird and David Humphries. Many professors have also taught me by example at the Graduate Center and Johns Hopkins. Betty Einerman is also greatly appreciated. My fellow graduate students Paul Naish, Evan Friss and Francesca Vassalle have all helped with my work and sanity over the years. My friendships with Chrissy Sheehan, Gerard Viola and Janelle Burke have provided me with great support. Many of my students at Lehman College, Yeshiva University and the College of Mount Saint Vincent have inspired me and challenged me to be a better teacher.

Thank you to my parents, Sion and Ellen, and my sister Erin for the ways they have helped me develop as a person. Thank you to the Weintraubs for accepting me warmly into their family. I would like to acknowledge my husband, Matt Weintraub. We have certainly come a long way since first meeting over a decade ago. I would like to thank you for your unending support and humor throughout these years.

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Chapter 1. The Biological Engineers

Doctor Luther Halsey Gulick believed that his generation of health and education workers had a special mission to deal with the impact of urbanization and industrialization on the physical and mental welfare of humanity. He took the opportunity to spread this message in 1903 at a dinner thrown in his honor for having been appointed as the first Director of Physical Training for New York City public schools. After a laudatory introduction, and before a group of leading physical educators, hygienists and members of the Board of Education, Gulick declared: "This is the age of the city." People were moving away from agricultural lifestyles and "new conditions have…taken away the world's muscular work and are doing it by machinery." Not only were urban professionals becoming physically inactive, toiling at account books rather than taking to horseback in the fields, but manual laborers were becoming deformed through specialized labor and children faced the unhealthy, sedentary occupation of modern, compulsory schooling. New technology including steam power and electricity had also "increased many avenues of nervous expenditure," transporting people and transmitting information more rapidly than ever before.[1]

Gulick expounded that it was "easy to deplore the city." To be certain, many of his contemporaries thought poorly of urban overcrowding, unsanitary conditions, poverty and the millions of immigrants entering Ellis Island in the early years of the twentieth century, leading them to declare New York City and other metropolises to be "breeding places of iniquity and blots upon the fair name of civilization." Gulick, however, chose not to dwell upon nativism or anti-urbanism for he believed that cities could inspire improvement rather than degeneration.

[1] Luther H. Gulick, "The Problem of Physical Training in the Modern City," *American Physical Education Review* (hereafter APER) 8 no. 1 (March, 1903): 28, 31. See also, Gulick, "Vitality and Modern Life," *Physical Education* 5 no. 3 (May, 1896):21-25; Gulick, "Vitality and Modern Life (Continued," *Physical Education* 5 no. 4 (June, 1896): 33- 35.

Indeed, cities had the potential to contribute to "the maintenance of superb health, to the development of a higher type of manhood and womanhood, —a type having greater power, a type having a more intense and powerful personality." In order to do so, however, those who worked in health had to adjust to "new conditions." Gulick expressed that: "The sewage system, the elevated railroad, the tunnels, the buildings of the city, have all presented fresh problems to our mechanical engineers…And so with those of us who are concerned with the foundation of human life itself."[2]

It is within this context that Gulick introduced the idea of the "biological engineer" to the group of educators. To grapple with novel conditions of urban life, to maintain and develop health, Gulick suggested creating a profession that "consists in developing within the individual to the maximum the power of life, treating each individual, so that his may be the conditions under which the greatest power of living shall be developed."[3] He first spoke about developing young people within public schools. Enhancing the lives of children involved provisions of formal exercise, mental relaxation, supervised free play, along with testing and tracking of students. Within these efforts to change schools was the idea that physical well-being laid the basis for mental well-being and improvements in learning. The establishment of testing and the tracking of students allowed for more individualized education and hopefully would ease students who were not able to pass examinations and move forward in classes. This description of biological engineering reflects both programs that Gulick and others had established within schools in the previous decade, as well as the wish to enhance these existing programs and initiate new ones throughout the country.

[2] Ibid., 28-30.
[3] Ibid., 30.

Yet, modern conditions also created numerous problems for adults, which Gulick spoke about in the same address. However much physicians and public health workers had improved society through providing medical care and sanitary regulations, there were still people who were technically well-protected from disease, but were "dominated by the necessity of caring for themselves; they have but little energy for work; they are unable to rear strong offspring...they are liable to be upset by any and every irregularity in their course of life;…they lack the power to live full, rich, effective lives."[4] Not particularly ill, these people were also not thriving physically or mentally. The biological engineer would guide these people, work to develop health in youth, and extend the medical field to include people who were generally well.

Gulick was impelled to create a position that worked to develop individuals to their fullest mental and physical capacity through individualized care. Despite the emphasis on physical matters, Gulick was deeply concerned with matters of the mind. When he referred to people who "lack the power to live full, rich, effective lives," he was describing people often considered neurasthenic.[5] In speaking about the impact of the daily press and steam power and the increased nervous expenditure of modern life it is evident Gulick was influenced by the idea of neurasthenia or "American Nervousness," popularized by New York neurologist George M. Beard in the 1880s. According to Beard, American people were becoming nervously exhausted because of the advance of civilization—"steam-power, the periodical press, the telegraph"—in combination with certain aspects of American culture and life.[6] It was a very prevalent, but relatively minor, mental illness of the late nineteenth and early twentieth centuries.[7]

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[4] Ibid., 30.
[5] Ibid., 30.
[6] George M. Beard, *American Nervousness, Its Causes and Consequences, A Supplement to Nervous Exhaustion (Neurasthenia)* (New York: G.P. Putnam's Sons, 1881): vi.
[7] For a discussion of neurasthenia within a broad history of psychiatry Edward Shorter, *A History of Psychiatry: From the Era of the Asylum to the Age of Prozac* (New York: John Wiley & Sons, 1997).

Gulick tied the project of biological engineering more closely to neurasthenia in a 1909 lecture at New York University titled "Biological Engineering: Treatment of an individual case of Neurasthenia." He recounted the case of a young man who had been consumed by his profession and rendered weak and neurasthenic. Under the guidance of a physician, he recovered because he "established other intellectual interests. He learned how to play, had learned the fundamental necessity of attention to the essentials of good living, namely regular and wholesome eating, sleeping, exercise, etc." This was a common scenario because "people do not know how to live."[8] The patient needed a medically educated person to provide guidance "not only in times of disease, to aid recovery, not only that they may be preserved from accident or contagion, or other sources of disability."[9] Gulick claimed, "people need to be taught how to administer their time so as to live wholesomely and effectively, how to live so that life shall be a joy and not a burden, how to have their leisure time contribute to strength rather than to exhaustion through dissipation—how to manage efficiently the machinery of life. This is the problem of the biological engineer."[10] People did not need "merely the rigid observance of general rules for hygienic living," but an individualized program provided by the biological engineer "which is based upon an expert knowledge of the individual's peculiarities, and of the environment under which he is living and must work."[11]

This holistic view of health, which took into account many factors in biology and environment, was a reflection of the YMCA philosophy of Mind-Body-Spirit, which Gulick created in the 1880s prior to his work in public schools. Furthermore, in teaching people how to

[8] Luther H. Gulick, "Biological Engineering: Treatment of an individual case of Neurasthenia, Given at the College of Physicians and Surgeons, New York City April 14, 1909." (Course on Preventive Medicine).Pg. 3 Box 14., Folder 10, Gulick Writings: Formerly Bound Volume 7(5 of 12), AAAPHERD collection, Springfield College Archives.
[9] Ibid., 3.
[10] Ibid., 3.
[11] Ibid., 4.

live, Gulick was applying "re-education" methods found in early therapy, which was conducted by private-practice neurologists, the equivalents of modern-day psychiatrists, often treating neurasthenia.[12] Exercise, proper diet, rest, and positive suggestion techniques in various combinations were among the methods used in curing and preventing neurasthenia.

Gulick's targeting of neurasthenics parallels his targeting of schoolchildren. Both children and adult neurasthenics were affected by modern life which increased stress and had progressively taken away physical labor for many people. Schools, the agency of healthful education, were also thought to cause nervous problems, if not full-blown neurasthenia in youth. The biological engineering endeavors were a way to educate students on living to prevent neurasthenia, but also to cure cases that were increasingly found in the schools often due to education methods.

Luther Gulick sensed another void within health work—research. In 1910, he travelled to Washington D.C. to testify before a Senate committee regarding the creation of a federal department for public health. Here, he restated his ideas that people were living increasingly sedentary lives, yet "[I]t is nobody's business to see how that changes the quantity and kind of food that a person should eat; that is not the function of the physician. A physician could not make a living at that kind of thing at all, but it is a fundamental problem." Children were seated for at least five hours daily in schools yet it was "nobody's business" to see how that affected their growth. When Senator Joseph Bristow asked Gulick if there was any conformity of opinion regarding health advice Gulick simply stated: "On some things there is substantial agreement, but on a great many of these things we do not know; but we need evidence, and it is nobody's business to get the evidence now." Although Gulick mentioned nutritional research undertaken

[12] Edward Shorter, *A History of Psychiatry*; Francis G. Gosling, *Before Freud: Neurasthenia and the American Medical Community, 1870-1910* (Chicago: University of Chicago Press, 1987).

by Yale University chemist Russell H. Chittenden and Russian Nobel Prize winner Elie Metchnikoff, he emphasized the general lack of viable knowledge and agreement upon matters of health practice. Gulick hoped that the federal government might act to create a department which could further this research and provide men like him with sufficient information.[13]

Furthermore, Gulick stated that people were demanding this information and were more interested in health matters than ever before. He received fifty letters a day asking him sundry questions about "health conduct" which he did not know how to answer. Gulick testified that people showed interest: "in seeing that each day shall not be merely efficient, but vivid; a consciousness that most of the days can be a great deal better and more vivid than they are with most of us; and they can be by paying attention to things that we now know relatively little about, and the reason we do not know about them is because we have changed our habits as a people and we have not been studying what it meant."[14]

Enhancing the "vividness" of life under new conditions was thus the crux of biological engineering's endeavor. Lacking proper information, many conducted their own research in order to support their agenda of guiding human health. They endeavored to institute individualized treatment en masse, combining medical and public health frameworks. Through education campaigns and the incorporation of physical education and hygiene into primary, secondary and post-secondary schools, the biological engineers sought to promote a new level of health consciousness, referred to as a "physical conscience" or "a new sense of responsibility for things bodily."[15]

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[13] Statement of Dr. L.H. Gulick," *Proposed Department of Public Health, Hearing Before the Committee on Public Health and National Quarantine, United States Senate* (Washington: Government Printing Office, 1910): 96-98.
[14] Ibid., 97.
[15] Luther H. Gulick, "The High Tide of Physical Conscience," *World's Work* 16 no. 2(June, 1908):10384.

Biological Engineering

The lives and work of Luther H. Gulick and Dudley A. Sargent illustrate key ideas and activities within the vision of biological engineering. Born in Hawaii in 1865 to a Congregational missionary family, Gulick later moved to Ohio with his brother and took courses at Oberlin College in the early 1880s. After discovering a deep interest in physical education, he attended Sargent's School of Physical Education in 1884. He moved on to work as a physical director of a Michigan Young Men's Christian Association in 1886 and the following year became head of physical training at the YMCA Training School in Springfield, Massachusetts. During this time he also served as International Committee Secretary for Physical Work in the YMCA and earned a medical degree from the New York University. In 1900 he took a position as the principal of Pratt Institute High School, remained there for three years and went on to serve as the first Director of Physical Training for New York City public schools until 1908, while also lecturing at New York University. This position was followed by a post as Director of the Department of Child Hygiene of the Russell Sage Foundation. Four years later he resigned to focus on his newly-founded organization, the Camp Fire Girls. The last few months of his life were spent overseeing the YMCAs in France during World War I as the organization's chairman of the International Committee of the War Work Council.[16]

Gulick was a man who thrived on new opportunities and challenges. Upon his death in 1918, he was remembered for his ability to write prolifically, lead, and inspire those around him.[17] His YMCA colleague Hanford M. Burr stated that Gulick was "by instinct and inheritance

[16] "Dr Luther H. Gulick, Educator, Is Dead," *New York Times*, 14 August 1918, p. 9. For Gulick's life see, Wallach, Stephanie, "Luther Gulick and the Salvation of the American Adolescent," (Ph.D. dissertation. Columbia University, 1989); Ethel Josephine Dorgan, *Luther Halsey Gulick: 1865-1918*(Washington, D.C.: McGrath, 1934).
[17] Joseph Lee, "Dr. Luther Halsey Gulick, 1865-1918," APER 23 no. 7 (October, 1918):422-424; Dudley A. Sargent, "The Life and Work of Dr. Gulick," APER 23 no. 7 (October, 1918): 418-422.

a *missionary.*"[18] Instead of following the Gulick family calling, he was "a home missionary as well as a foreign missionary—a world missionary, preaching a new gospel of health, happiness, wholesome living and efficiency."[19] Furthermore, Gulick was an innovator who "was ever on the watch for new fields to conquer."[20] His chosen field and passion was health, which led him in various directions. His successor in the New York City public schools stated, "[H]e led the way and the physical training world has followed."[21]

Doctor Dudley Allen Sargent believed that he was also taking part in the vast, new endeavor of "biological engineering."[22] Sixteen years older than Gulick, Sargent was hired as Bowdoin College's physical director in 1869, working his way in this manner through an undergraduate degree at that institution beginning in 1871.[23] He graduated in 1875, and worked briefly at Yale where he earned a medical degree in 1878. For a short time, he conducted a private gymnasium in New York City, where he attended the notable clinics of Abraham Jacobi, who specialized in children's diseases, Edward Séguin, nervous disease specialist, and Paul Mundé, who worked in women's diseases.[24] The following year he was hired at Harvard University to direct the newly constructed Hemenway Gymnasium and began the Sargent School of Physical Education in 1881. He also began a long-running summer program for physical training at Harvard in 1887. In the early twentieth century, Sargent became a founder and President of the Boston Health Education League, which sought to inform the public on public health issues through educational pamphlets.

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[18] Hanford M. Burr, "Dr. Luther Halsey Gulick, 1865-1918," APER 23 no. 7 (October, 1918): 414.
[19]Ibid., 414. Stephanie Wallach, "Luther Halsey Gulick and the salvation of the American adolescent."(Ph.D. dissertation, Columbia University, 1990).
[20]Ibid., 414.
[21]C. Ward Crampton, ""Dr. Luther Halsey Gulick, 1865-1918," APER 23 no. 7 (October, 1918): 424.
[22] Dudley A. Sargent, "Competition in College Athletics," APER 15 no.2 (February, 1910): 107.
[23] Fred Eugene Leonard, *Pioneers in Physical Training* (New York: Association Press, 1915), 97.
[24] Dudley A. Sargent and Ledyard W. Sargent, *Dudley Allen Sargent; An Autobiography (*Philadelphia: Lea & Febiger, 1927), 145-146.

Sargent's connection with Gulick began when the young man attended Sargent's school in 1885. Incidentally, Gulick had also been influenced by one of Sargent's earliest students, Delphine Hanna, who had taught physical education at Oberlin. Sargent claimed that "[W]hile he was a student at Cambridge we both drank at the same fountain in our preliminary studies and technical reading."[25] Although these men had different careers, they were both at the forefront of physical education for decades. Gulick began in the YMCA and chose to move toward hygiene while Sargent maintained his position at Harvard and his normal school for physical education. Both men spoke often at professional associations and wrote prolifically throughout their careers.

Sargent was very influential in his role as Physical Director of the Hemenway Gymnasium at Harvard from 1879-1919 and Director of the Sargent School. By 1920, a third of nearly 10,000 graduates of the twenty-eight American physical training normal schools had graduated from Sargent's School.[26] One physical educator wrote that Sargent's "stimulating and molding influence upon physical training in American colleges…was to be more potent and widely felt than any other that can be named."[27] He developed a system of physical training based on medical examinations and anthropometric measurements that spread throughout American colleges and universities in the 1880s and 1890s. These extensive measurements of length and width of body parts and muscular girth allowed Sargent to prescribe individualized exercise which was grounded in his philosophy of training. Moreover, he invented adjustable pulley-weight machines so that students may follow his prescriptions and attain overall bodily symmetry. His hopes of biological engineering reached beyond college students to all youth, and

[25]Dudley A. Sargent, "The Life and Work of Dr. Gulick," APER 23 no. 7 (October, 1918): 420.
[26] Paula D. Welch and Harold A. Lerch, *History of American Physical Education and Sport* (Springfield, Ill.: Charles C. Thomas Publisher, 1981), 136.
[27] Leonard, *Pioneers of Modern Physical Training*, 95.

he maintained, "if a child is not worth examining he is not worth educating."[28] Akin to Gulick, his greatest priority was "not only to keep them well and prevent disease, but to lift them to a higher plane of living, morally, intellectually, as well as physically."[29]

For Sargent, the physical director position at colleges, schools, and YMCAs, closely approximated the biological engineer's role and he believed an individual pursuing this profession needed to be broadly educated. In 1908, he expounded upon the extensive coursework in the humanities, social science, language, medicine, education, science and technical training which he considered essential for physical educators, who ranked below physical directors. Knowledge of English, French and German was crucial along with basic physics, chemistry, zoology and botany. He or she must attend a physical education normal school where he or she could take courses in anatomy, physiology, histology, personal and school hygiene, the hygiene of occupation, anthropometry, physical diagnosis, applied anatomy, remedial and corrective gymnastics and massage. Other necessary fields were theory and practice of physical education, principles of gymnastics systems, theory and practice of athletic training, psychology, history of education, history of physical education, pedagogy, child study and the philosophy of play. Additionally, those seeking the position had to be acquainted with social problems of urban and rural areas and childhood development based upon environment. Practical training in first aid and bandaging was essential as well as knowledge of constructing and managing playgrounds, gyms and sports fields. Physical educators also had to be physically active individuals with first-hand experience playing games, athletics, gymnastics and calisthenics, for "the want of this

[28]Dudley A. Sargent, "The Duty of the Family Physician in Regard to the Proper Mental and Physical Development of the Children Under His Care From Infancy to Adolescence," *Bulletin of the American Academy of Medicine* 8 no.9 (October, 1906):626.

[29] Sargent, "Should the Teacher of Physical Education in Public Schools Have the Training of a Physical Director and Instructor in Hygiene or that of a Physician?" *National Education Association Journal of Proceedings and Addresses* 46 (Printed by the University of Chicago Press, 1908): 1011.

practical all-round training has brought many an educated physical director to grief."[30] To be successful at the profession he needed, "vigor, energy, and technical ability…most of the book knowledge of the hygienist, some of the scientific attainments of the physician, combined with a great deal of the moral earnestness and devotion of the Christian minister."[31] To advance to the position of physical director, a medical degree was also necessary.

Sargent believed that Gulick was one of the most well-trained physical directors. He observed that "more than any other physical director, [Gulick] sounded the depths of this great subject in all of its various aspects. Not only anatomy, but biology, physiology, psychology, anthropometry and sociology were all placed under contribution to bring forth the necessary facts to elucidate the cause he was espousing."[32]

As physical directors Sargent and Gulick sought to educate and train on all physical matters in order to raise people to a "higher plane" of living through widespread medical supervision. They did not make a great distinction between physical training and hygiene. Sargent believed that "[P]hysical training under proper instruction is applied hygiene pure and simple in which the ambitious boy learns what to eat, drink, and wear, how to bathe, sleep, and exercise—in other words he learns the correct habits of living."[33] Thus, Sargent sought to measure students individually, prescribe exercise and give advice on nutrition and other health matters. He hoped that supervised physical training would become a college requirement and would be given course credit. Through his anthropometry and ability tests, moreover, he sought to discover and promote scientific standards of health.

[30] Ibid., 1009.
[31] Ibid., 1011.
[32] Sargent, "The Life and Work of Dr. Gulick," 420.
[33] Sargent, "Teacher of Physical Education in Public Schools,"1010.

Early physical directors had indeed taken upon functions that would eventually be placed within other departments. Gulick's time as Physical Director of New York City public schools provides a good example because he sought to investigate a large combination of medical, hygienic and educational issues: problems of the school environment such as desks, showers, sanitation, dust, ventilation; health issues of adenoids, epilepsy, scoliosis, nutrition, underfeeding, fatigue; problems of studying such as cramming, appropriate amount of homework, the relation of adenoids to scholarship; hygiene teaching; social life; problems of the physical director including physical examination, medical certification for student athletes, excuses from gym; and generally "the extent to which schools were responsible for health issues in children."[34]

As physical director at Harvard, Sargent's system of physical training employed a vision of biological engineering and was applied to college students throughout the country in the late nineteenth and early twentieth centuries. However, this endeavor was too expensive and time-consuming for public primary and high schools, and the biological engineers believed that people of all ages and classes needed health supervision. At this juncture, biological engineers decided to support public health initiatives that guarded schoolchildren from communicable disease and established sanitary guidelines for schools. They supported efforts to expand the scope of examinations and implement health education.

While the American Association for the Advancement of Physical Education was created in 1885 it was not until 1907 that the American School Hygiene Association was founded. Many early physical educators were on its council including Sargent, Thomas A. Storey, Jessie H. Bancroft, Rebecca Stoneroad and Gulick was elected to be the organization's president.

[34] Dr. Luther H. Gulick, "Annual Report of the Board of Education, September 30, 1908," p. 2-3, Gulick's Writings, Volume 8, Folder 5 of 6, AAHPERD Springfield College Archives.

According to hygiene advocate William H. Allen, ASHA was founded "to secure for all schools of all states what Dr. Luther H. Gulick so aptly terms 'biological engineering.'"[35] As previous school hygiene instruction focused on anti-tobacco and alcohol instruction, biological engineering's "broader motive for school instruction in hygiene can do much to fix indelibly in the mind the principles of healthy living and to make attractive the vitality and efficiency that come only from health."[36]

By the early 1900s, over four hundred cities or towns were examining their public school children. Medical inspectors worked within city boards of health to run these programs. Gulick suggested that the board of health inspectors examine for contagious disease, while broader physical examinations for non-contagious diseases were to be added and then placed under the purview of educational authorities. The latter included "activities which have to do with the child's physical conditions and the hygiene of school work –seating, exercise, hours of home study."[37] These physical examinations, Gulick thought, should include the eyes, teeth, throat, nose, glands, ears, lungs, heart, physical structure, general nutrition and the nervous system. These latter examinations aligned with the biological engineering endeavor of physical improvement and were less commonly implemented than contagious disease examinations. A 1911 survey indicated that while 443 cities had some type of medical examination, 214 included the comprehensive physical examination.[38]

Thus, biological engineering made significant headway within colleges and public school education in the late nineteenth and early twentieth centuries. Yet, in colleges, students were often indifferent to physical education requirements, and in public schools there was much

[35] William H. Allen, "A Broader Motive for School Hygiene," *The Atlantic Monthly* 101(June, 1908):824.
[36] Ibid., 825.
[37] Luther H. Gulick and Leonard P. Ayres, *The Medical Inspection of Schools* (New York: Russell Sage, 1913), 150.
[38] Ibid., 36.

conflict regarding what type of system to institute. Moreover, as school hygiene formally developed, the departments began to take on responsibilities that had been under the authority of physical training. Rather than have the biological engineer in charge of health, biological engineering became fragmented. As hygiene developed within public schools, medical inspection became too superficial and lacked the individualized, holistic perspective that was of great importance for the biological engineer. In sum, biological engineering proved too ambitious to be implemented widely and successfully within American society in the early twentieth century.

The Work of the Biological Engineer in Context: Sport, Gender, Professionalization, Public Health, Progressive Reform and Education

The field of biological engineering as put forth by Luther Gulick incorporated many different areas within its broad framework. Their agenda involved all levels of education, sports and recreation, Progressive reform, public health, medicine, psychiatry and school hygiene. This study of biological engineering touches upon the history of the above fields as well as broad considerations of gender, class and medicalization.

As expressed in Gulick's speeches and writing, urbanization, industrialization and education loomed large as possible causes for poor health. Indeed, Gulick lived through one of the greatest periods of expansion in these three areas in the history of the United States and it was not surprising that he viewed them to be the culprits. Attendance in primary schools, high schools and colleges increased in the nineteenth century, with education for young people leading the way in overall attendance. Beginning in the 1840s, Horace Mann and other school reformers campaigned for universal public education, which became mandatory in Mann's home

state of Massachusetts in 1852. By 1885, sixteen of thirty-eight states had some type of compulsory schooling law.[39] By 1918, all states had a variation of mandatory education with thirty-one states requiring schooling until age 16.[40] The expansion of mandatory schooling increased the numbers of young people attending schools to 61% of children between five and eighteen years old in 1870 to 71% in 1898.[41] From 1870-1915, the number of children in schools increased from seven to twenty million, and money spent on education increased tenfold to $605 million.[42]

Fewer people attended high schools and colleges than primary schools, but these institutions also saw great expansion. In 1815, 10% of young people were found in high schools, only doubling to 20% in 1915. The period from 1890 to 1918 saw attendance grow significantly from 700,000 people to 1.6 million.[43] The expansion of colleges and universities is more pronounced in the number of institutions than the number of students. In 1870, there had been 582 colleges in the United States and by 1900, there were nearly 1,000.[44] In 1860, the number of white males in liberal arts colleges was 16,660, rising to 33,000 in 1880 and 82,000 in 1900.[45] The numbers attending women's colleges rose from 12,000 in 1860 to 16,000 in 1900.[46] According to Colin Burke, approximately 2.4% of native white males ages 15-25 attended college in 1900. [47]

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[39] David Tyack, *The One Best System: A History of American Urban Education* (Cambridge, Mass.: Harvard University Press, 1974), 71.
[40] Steven Mintz, *Huck's Raft: A History of American Childhood* (Cambridge, Mass: Belknap Press of Harvard University Press, 2004),174.
[41] Tyack, *One Best System*, 66
[42] Mintz, *Huck's Raft,* 174.
[43] Ibid., 175.
[44] Susan Rumsey Strong, *Thought Knows No Sex: Women's Rights at Alfred University* (Albany: State University of New York Press, 2008), 13.
[45] Colin B. Burke, *American Collegiate Populations: A Test of the Traditional View* (New York: New York University Press, 1982), 216.
[46] Ibid., 216.
[47] Ibid., 215.

Over the course of the nineteenth century, the national economy expanded and became integrated, despite severe depressions, during the transition to modern industrial capitalism. With the "Second Industrial Revolution" railroads linked agricultural areas to urban processing plants, markets and ports**.** Steel and oil production soared. With the establishment of electric power the manufacturing process sped up for industrial workers, while middle and upper class men experienced technological advances within their working environments. Advances in transportation and other technologies spurred urban growth. In 1850 only six American cities had a population of over one hundred thousand. In 1900, there would be thirty-eight such cities. Moreover, the population of Americans living in large cities jumped from 5% to 19% in that same fifty-year period.[48] With immigration climbing in the 1890s, many of the nation's cities became the home for newly-arrived Eastern and Southern Europeans.

Cities were often the loci for public health reform for the problems of clean water supplies, sewage and epidemics were particularly nocuous. As John Duffy has written, during the last three decades of the nineteenth century, public health workers were moving away from the "sanitarian" model based upon the idea that cleanliness, fresh air and pure water were important for health, along with the idea that epidemics were spread by "an indefinable substance known as miasma."[49] Informed by the bacteriological discoveries of Robert Koch and Louis Pasteur, they moved towards the "New Public Health."[50] City and state health departments increasingly took efforts to combat smallpox through vaccines and set quarantines for diphtheria, scarlet fever and typhoid.[51] The biological engineers embraced the germ theory

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[48] Jon C. Teaford, *The Twentieth American City* 2ed. (Baltimore: Johns Hopkins Press, 1986), 1.
[49] John Duffy, *The Sanitarians: a History of American Public Health*(Urbana: University of Illinois Press,1990),193.
[50] Nancy Tomes, *The Gospel of Germs: Men, Women, and the Microbe in American Life* (Cambridge: Harvard University Press, 1998),237-245;Judith Walzer Leavitt, *Typhoid Mary: Captive to the Public's Health* (Boston: Beacon Press,1996); John Duffy, *The Sanitarians*; Barbara Gutmann Rosenkrantz, *Public Health and the State: Changing Views in Massachusetts,1842-1936*(Cambridge: Harvard University Press, 1972).
[51] Duffy, *Sanitarians,* 182.

and current medical views and hoped to educate the general public on modern hygiene, yet continued to emphasize the importance of physical training for overall health. Like physical educators, public health workers were concerned with modernization, sought to define their profession through scientific training and were often in conflict with traditional physicians.[52] Although physical educators did not attend the newly developing professional programs for public health practitioners, they shared much common ground, including the use of health statistics, the provision of widespread health services and the promotion of education campaigns within a social justice framework. [53]

Biological engineering can be included among the diverse movement known as Progressivism.[54] The areas of youth, education and health clearly fall within the boundaries of Progressive reform. Biological engineering was also compatible with the general Progressive goal of social justice because biological engineers wanted to provide health services which they thought would benefit people. As with other forms of social justice, critics could frame it as a type of social control instead, aimed at manipulating the masses and asserting American values.[55] Because they sought to transform people and education in the wake of modern capitalism, rather than overthrow the system, biological engineers were surely not social radicals. However,

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[52] Elizabeth Fee "Designing schools of public health for the United States" in *A History of Education in Public Health*, eds. Elizabeth Fee and Roy M. Acheson (Oxford and New York: Oxford University Press, 1991):153-194.
[53] These aspects of public health are outlined by Fee "Designing schools of public health for the United States," 158-171. On the social justice characteristics in public health practice, see Bernard J. Turnock, *Public Health: What It Is and How It Works* 5ed. (Burlington, MA: Jones & Bartlett Learning, 2012),15.
[54] For diverse views on the Progressive Era see Richard Hofstadter, *The Age of Reform; from Bryan to F.D.R.* (New York: Random House, 1955); Robert H. Wiebe, *The Search for Order, 1877-1920* (New York: Hill and Wang, 1967); Martin J. Sklar, *The Corporate Reconstruction of American Capitalism, 1890-1916: the Market, the Law and Politics*(Cambridge: Cambridge University Press, 1988); Gabriel Kolko, *The Triumph of American Conservatism: A Reinterpretation of American History, 1900-1916* (New York: The Free Press of Glencoe, 1963), Peter G. Filene, "An Obituary for the 'Progressive Movement," *American Quarterly* 22 no. 1 (Spring, 1970): 20-34; Daniel Rodgers, "In Search of Progressivism," *Reviews in American History* 10 no. 4 (December, 1982): 113-132; Daniel Rodgers, *Atlantic Crossings: Social Politics in a Progressive Age* (Cambridge, Massachusetts: Belknap Press of Harvard University Press, 1998); Michael McGerr, *A Fierce Discontent, the Rise and Fall of the Progressive Movement in America, 1970-1920* (New York: Free Press, 2003).
[55] For an emphasis on social control see: Colin Greer, *The Great School Legend: A Revisionist Interpretation of American Public Education* (New York: Viking, 1972); Cary Goodman, *Choosing Sides: Playground and Street Life on the Lower East Side* (New York: Schocken Books, 1979)

efforts for social control underlie many reforms. As Dominick Cavallo has written in his work on the play movement, the motivation of social control is obvious when considering reforms aimed at youth, and was not confined to the Progressive era.[56] Furthermore, Alan Kraut has argued that it is difficult to untangle multiple motivations likely affecting reformers, such altruistic desires to help, wishes to assimilate immigrants, and hopes for a more productive and prosperous country.[57]

If we submit that social control was one of the motives within physical training and hygiene, alongside social justice, biological engineering could furnish an interesting example of such a reform that was aimed at the entire population. It was instituted in colleges for the elite, as well as in public schools. Biological engineers aimed to reach those outside of formal education, and older people, believing that everyone was in need. Biological engineering was supposed to be based upon an assessment of physical health. While a higher level of health is often considered to be linked to greater socio-economic status, the biological engineers realized this relationship did not always hold. Neurasthenia and the division of labor affected everyone in society. Sargent found many people that he judged to be wanting in health among his Harvard students. Within school hygiene, physical defects were found in all classes and Gulick wrote that inspection was "essential in country districts as well as in large cities, and in rich communities as well as in poor ones."[58]

An extreme example of social control was eugenics. At the beginning of the twentieth century, many Americans across the political spectrum were attracted to programs of positive and negative eugenics, resulting in the passage of sterilization laws in fifteen states throughout

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[56] Dominick Cavallo, *Muscles and Morals: Organized Playgrounds and Urban Reform, 1880-1920* (Philadelphia: University of Pennsylvania Press, 1981), 8

[57] Alan Kraut, *Silent Travelers: Germs, Genes and the "Immigrant Menace* (New York: Basic Books, 1994), 227.

[58] Gulick and Ayres, (1913 ed.), ix.

the country by 1917.[59] Some of the areas associated with eugenics were seen in biological engineering such as testing and measurement, investigations of feeble-mindedness, and a basic concern for health.[60] Sargent's work, for example, in conducting extensive anthropometrical measurements in hopes of developing better physiques might lead some to think he was inclined to support eugenics. The prime difference, however, was the biological engineering focus on environmental and social factors in health rather than heredity. Furthermore, while Sargent and others sought greater perfection for humanity, they viewed it on an individual basis in which a person could attain symmetry for his body through health guidance from an early age. Even as Sargent and other early physical educators aimed to discover standards, there was a lack of unity. Sargent realized that defining health was a complicated undertaking, and continued to experiment in different ways to uncover the "unknown equation" which made for human ability. Finally, the main focus of the biological engineering vision was clearly improvement through exercise and medical care, rather than through efforts to control reproduction.

Related to social control is the idea of efficiency, which gained great popularity in the Progressive Era.[61] During the late nineteenth and early twentieth centuries, there certainly was a call to reform political practice in attempts to bypass party politics for expert-guided "objective"

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[59] Daniel J. Kevles, *In the Name of Eugenics: Genetics and the Uses of Human Heredity*(New York: Knopf, 1985), 100.

[60] In *Conceiving the Future: Pronatalism, Reproduction and the Family in the United States, 1890-1938* Laura L. Lovett writes briefly on Gulick's work in the Camp Fire Girls: "In 1917, however, Luther Gulick urged a solution for encouraging young women to consider motherhood—Camp Fire Girls…Although eugenics was not explicitly mentioned in Camp Fire literature, Gulick believed that it was embodied in the program (100)." Lovett cites the article "Putting Over Eugenics" by A.E. Hamilton from the *American Journal of Heredity* 6.6 (June 1915). The article does not feature Gulick stating support for eugenics, but Hamilton imposing the mission on the organization. The stated purpose was "to find the ablest girls and women and to give them a training in team work and include them effectively to give women's service to the community." (284). The organization promoted women's domestic role as well. Hamilton writes "So, too, Eugenics, though nowhere mentioned in the literature of Camp Fire, finds its embodiment in the learning by doing which is Camp Fire" (286). This illustrates how a writer for a eugenics magazine can interpret such a service organization for women to be ultimately concerned with eugenics. Health programs at this time might support physical improvement in various ways and not support eugenics.

[61] Samuel P. Hays, *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920* (Cambridge: Harvard University Press, 1959); Samuel Haber, *Efficiency and Uplift: Scientific Management in the Progressive Era, 1890-1920* (Chicago: University of Chicago Press, 1964).

policy-making. Methods of efficiency also became important in considerations of managing business, natural resources, and people, most notably seen in Frederick Winslow Taylor's scientific management publication and practice.[62] Moreover, the emphasis on efficiency inspired the greater use of social science research to investigate social problems.

The use of the term efficiency, along with mechanical metaphors for the body, by many physical educators at this time provides an example of the complexity and importance of the concept. While Gulick frequently lauded the value efficiency, even writing an advice book titled *The Efficient Life,* he does not fit the model of the "administrative Progressive."[63] As Stephanie Wallach has written in her work on Gulick, "[H]e did not embrace efficiency as a bureaucrat but as a moralist: he was primarily interested in efficiency in its relation to body, mind and spirit."[64] Others in the field undoubtedly used the term in this same way as they articulated notions of health. Moreover, as seen in the above discussion, Gulick did not want people to follow rigid rules or live merely efficiently, but vividly.

A significant strand of Progressive reform was concentrated on child welfare. This focus was inspired, in part, by what Steven Mintz has classified as "modern childhood." From the 1750s into the twentieth century, the ideas of modern childhood developed unevenly throughout the United States, emphasizing childhood as a distinct period of development in which young people were innocent, malleable and fragile.[65] Mintz classifies numerous types of "child-saving"

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[62] Robert Kanigel. *The One Best Way: Frederick Winslow Taylor and the Enigma of Efficiency* (New York: Viking, 1997); Samuel Haber, *Efficiency and Uplift: Scientific Management in the Progressive Era, 1890-1920* (Chicago: University of Chicago Press, 1964).

[63] Wallach's interesting dissertation on Gulick highlights this very point, as she argues against Cary Goodman and Dominick Cavallo, who interpreted Gulick through the efficiency and social control models. See Wallach, "Luther Halsey Gulick," 402-406; 427-433. Cary Goodman, *Choosing Sides: Playground and Street Life on the Lower East Side* (New York: Schocken Books, 1979); Dominick Cavallo, *Muscles and Morals: Organized Playgrounds and Urban Reform, 1880-1920* (Philadelphia: University of Pennsylvania Press, 1981). On administrative interpretations of the Progressive Era school reform, see Tyack, *The One Best System.*.

[64] Wallach, "Luther Halsey Gulick," 403.

[65] Mintz, *Huck's Raft,* 3.

activity defined as an endeavor "to protect society from dangerous children and protect children from dangerous society."[66] Focused particularly in the nation's burgeoning cities, child-savers came from many walks of life: they were missionaries, philanthropists, social workers, doctors, educators, lawyers, criminal justice workers, as well as volunteers. While shortly after the Civil War, child-savers generally functioned through private philanthropic organizations, in the 1890s, as an element of the Progressive movement, they entered a new phase of using scientific expertise and expanding the role of government in children's health, education and welfare.[67] In connection with the focus on childhood, G. Stanley Hall and other pioneering educators and psychologists created "child study" to learn more about children's development. Furthermore, the pediatric specialization in medicine gradually developed in the late nineteenth century, marked by the founding of the American Pediatrics Society in 1888. Thus, the biological engineering focus on childhood was not singular, but a part of a larger effort to study and assist children.

Biological engineering is part of the process of medicalization. This term is defined by sociologist Peter Conrad as a neutral process of "defining a problem in medical terms, using medical language to describe a problem, adopting a medical framework to understand a problem, or using medical intervention to 'treat it.'"[68] In asserting the role of the medical expert in education and in focusing on the medical origins of certain problems that were not previously considered medical in nature, biological engineers were a part of this process. More specifically, when biological engineers staked a claim for medicine within the American education system,

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[66] Ibid, 155.
[67] Ibid., 155,167,172.
[68] Quoted in Stephen Petrina, "The Medicalization of Education: A Historiographic Synthesis," *History of Education Quarterly* 46 no.4 (Winter 2006): 504; Peter Conrad, "Medicalization and Social Control," *Annual Review of Sociology* 18 (April 1992): 209-232; Peter Conrad, *The Medicalization of Society: On the Transformation of Human Conditions into Treatable Disorders* (Baltimore: Johns Hopkins University Press, 2007).

they participated in the "medicalization of education," and when they claimed there were medical causes for wrong-doing, they contributed to "the medicalization of deviance."[69]

The term "medicalization of education" was introduced by historian Sol Cohen, who used it to emphasize the developments in mental hygiene within education beginning in the place in the 1920s. Yet, Stephen Petrina, in 2006, called for scholars to investigate the medicalization of education in the late nineteenth century through topics including nervousness in children, medical inspections, physical education and instruction in hygiene, and the hygiene of instruction.[70] Petrina also asserted that scholarship must move away from interpretations that "leave little room for accounts of resistance or indifference."[71] A number of recent studies on health have already gone in this direction. James Colgrove has shown resistance to vaccination laws from leagues for medical freedom, ordinary citizens and physical culture entrepreneurs. [72] Additionally, Heather Munro Prescott has demonstrated resistance to various university-level health practices.[73]

My work builds on Petrina's calls to continue investigations of the medicalization of education and explore the reaction to the process.[74] The biological engineers certainly contributed to the medicalization of education when they asserted the role of medically-trained

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[69] Peter Conrad drew attention to the "medicalization of deviance" in the 1970s. Through his many works, he illustrates the complex ways in which concepts of deviant behavior such as addiction and hyperactivity have been medicalized. Peter Conrad, "The Discovery of Hyperkinesis: Notes on the Medicalization of Deviant Behavior," *Social Problems* 23 no.1 (1975):12-21; Peter Conrad and Joseph W. Schneider. *Deviance and Medicalization: From Badness to Sickness* (St. Louis: Mosby, 1980).

[70] Petrina, "The Medicalization of Education" 508. The others were school lunches, intelligence tests, school sanitation, clinical psychology and vivisection. These correspond to the definition of educational hygiene developed by a hygienist Louis Rapeer in 1915.

[71] Stephen Petrina, "Medical Liberty: Drugless Healer Confront Allopathic Doctors, 1910-1931," *Journal of Medical Humanities* 29 no. 4(December 2008):206.

[72] James K. Colgrove, *State of Immunity: The Politics of Vaccination in Twentieth-Century America* (California: University of California Press, 2006); John Duffy, "School Vaccination: A Precursor to School Medical Inspection," *Journal of the History of Medicine and Allied Sciences* 33 (July 1978): 344-55.

[73] Heather Munro Prescott, *Student Bodies: The Influence of Student Health Services in American Society and Medicine* (Michigan: University of Michigan Press, 2007).

physical educators and hygiene specialists within education. Moreover, many in the field commented that uninformed teachers classified pupils as dull, stupid, lazy and disobedient, when they were *really* blamelessly ill or pained, illustrating the medicalization of deviance. Within school hygiene, this was taken to an extreme when many medical inspectors blamed society's ills on enlarged adenoid growths in children's throats. Yet by maintaining a holistic view, and accounting for the student's upbringing and environment, Gulick and others eventually spoke against this instance of biological reductionism which can develop in cases where experts become too narrowly focused.[75]

Petrina has called attention to the problem of nervousness in children, and this is related closely to biological engineering and the history of psychiatry. As Francis Gosling has illustrated, neurologists such as George M. Beard were treating people, often diagnosed with neurasthenia, in private practice before Freudian psychiatry gained currency in America. There was common ground between biological engineering and these early neurologists because both involved teaching people "how to live" through various therapeutic regimens which included exercise and nutrition, among other things. The biological engineers were very concerned about training the nerves and preventing neurasthenia through training, while some neurologists, such as Charles K. Mills, employed physical training methods and were aware of Sargent's work.

Perhaps the most well-researched mental illness, neurasthenia has been analyzed by numerous scholars. Gail Bederman and Michael Kimmel have shown that concerns for masculinity were tied to the problem of neurasthenia, or Beard's "American Nervousness."[76] Other scholars have connected neurasthenia to the suppression of women at this same time and

[75] This is discussed in Chapter Seven.

[76] Michael Kimmel, *Manhood in America: A Cultural History* (New York: Free Press,1996); Gail Bederman, *Manliness and Civilization: a Cultural History of Gender and Race in the United States* (Chicago: University of Chicago Press, 1995); Bryce Traister, "Academic Viagra: The Rise of Masculinity Studies," *American Quarterly* 52 no. 2 (June, 2000): 274-304; David S. Churchill, "Making Broad Shoulders: Body-Building and Physical Culture in Chicago 1890-1920," *History of Education Quarterly* 48 no. 3 (August, 2008): 341-370.

to the "evasive banality" of modernity experienced by intellectuals.[77] Recently, David Schuster has argued that neurasthenia illustrated and promoted an intolerance of unhappiness and unease that became an important part of American culture.[78] While many followed Beard's assertions that the illness was for the middle and upper class particularly, Francis Gosling and Barbara Sicherman have illustrated how neurasthenia was often a diagnosis given to patients who attended free clinics and not only private practice and elite sanatoria.[79] My work illustrates a similar "democratization of neurasthenia" and also explores the idea of nervousness in youth more fully.[80]

In her work on manliness, Gail Bederman has emphasized the importance of G. Stanley Hall's recapitulation theory in preventing neurasthenia. That theory stated that all people developed in a way similar to the evolution of man. Young men were supposed to participate in strenuous, "primitive" activities, to build up their strength and offset neurasthenia. Thus, in order to remain at the peak of civilization, children and young men had to be able to return to primal activities.[81] While Bederman's work explores neurasthenia in fascinating ways, it is necessary to emphasize that physical educators also looked to non-aggressive, formal exercises to prevent and cure neurasthenia.[82] Fears of masculine decline that might have been evident in Hall's work on recapitulation were not the sole impetus of training programs because physical

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[77] Ann Douglas Woods, "'The Fashionable Diseases': Women's Complaints and Their Treatment in Nineteenth Century America," *The Journal of Interdisciplinary History* 4(1973):36-44; Barbara Ehrenreich and Deidre English, *For Her Own Good: Two Centuries of the Experts' Advice to Women* (NY: Anchor Press, 1978). On the connection of neurasthenia to modernity and the idea of "evasive banality" see, T.J. Jackson Lears, *No Place of Grace: Antimodernism and the Transformation of American Culture 1880-1920*(New York: Pantheon Books, 1981), 7- 26.
[78] David G. Schuster, *Neurasthenic Nation: America's Search for Health, Happiness and Comfort* (New Brunswick: Rutgers University Press, 2011.
[79] Gosling, *Before Freud;* Barbara Sicherman, "The Uses of Diagnosis: Doctors, Patients, and Neurasthenia," in *Sickness and Health in America*, eds., Judith Walzer Leavitt and Ronald L. Numbers (Madison: University of Wisconsin Press, 1978).
[80] Alfred M. Freedman, "Introduction," in Gosling, *Before Freud,* 4.
[81] Bederman, *Manliness and Civilization,* 84-110.
[82] See also Roberta J. Park, "Physiologists, Physicians, and Physical Educators: Nineteenth Century Biology and Exercise, *Hygienic* and *Educative*," *Journal of Sport History* 14 no. 1 (Spring 1987):28-60.

educators were interested in improving the health of everyone in society. Moreover, many physical educators did not encourage aggression and even sought to distance their field from competitive athletics and victory-obsessed coaches who "over-trained" their players. While Hall encouraged physical education generally, he would come to believe that prescribed training based on anthropometry was "a new and perhaps sometimes too self-conscious endeavor of our young college barbarians."[83]

Historian Clifford Putney agrees with Bederman that recapitulation theory was important in encouraging male physical activity, but focuses on muscular Christianity as another seminal component in the encouragement of sports and physical training during this period. More recently, Christopher G. White considered the connections between psychology and religious thought in the United States, and proposed to replace the muscular Christian category with "Neuromuscular Christian." White chose this term because he thought that "Putney neglects the particular ways that Christians thought about physiology."[84] Moreover, White correctly stressed the importance of the connection between the muscles, nerves and will for many thinkers at this time.[85]

Gulick, Sargent and others in the field definitely had ties with muscular Christianity. Putney has described Gulick as "the greatest of YMCA philosophers" and has written about his work in the YMCAs and the Springfield International YMCA Training School.[86] Since Putney's focus was the movement, he highlighted Gulick's involvement and did not feel the need to

[83] Granville Stanley Hall, *Youth: Its Education, Regimen, and Hygiene* (New York: D. Appleton and Company, 1907), 62. This is discussed in Chapter Six.
[84] Christopher G. White, *Unsettled Minds: Psychology and the American Search for Spiritual Assurance, 1830-1940* (Berkeley: University of California Press 2009), 105.
[85] Ibid., 104.
[86] Clifford Putney, *Muscular Christianity: Manhood and Sports in Protestant America, 1880-1920* (Cambridge: Harvard University Press, 2001), 69.

follow the rest of Gulick's career outside of the Christian organization in New York City public schools and the Russell Sage Foundation.

Additionally, Putney featured Dudley Sargent as a leading physical educator and stressed that he was "most outspoken" about fears that women were becoming masculine and men were becoming weak. Paraphrasing a 1906 article by Sargent on women's athletic pursuits, Putney described him as an individual "who feared the female competitor's 'tendency to become masculine in form and character' and who foresaw the day when 'effeminate man will succumb to virile woman.' To 'postpone that time' he urged that woman's role in the 'rougher sports' be confined to that of uplift and that her knowledge of such sports be sufficient only to enable her 'to be the sympathetic admirer of men and boys.'"[87] While Sargent believed that women "cannot stand a prolonged mental or physical strain as well as men," and that they should never play violent sports, he was not as severe in his beliefs as Putney has described him to be and his views were not consistent throughout his life. He trained women to become physical educators for four decades at his training schools and he surely did not train them to be mere "uplifters" on the sidelines rooting for male athletes. In the same article which Putney quoted, Sargent held that women were well-suited for dancing, calisthenics, light gymnastics, archery, tennis, field hockey, lacrosse, sprint running, bicycling, rowing, canoeing, golf, skating, fencing, basketball, and "all gymnastics plays and games" as well as modified forms of football, hockey, polo, basketball, boxing, fencing, pole vaulting and heavy gymnastics.[88] Of the latter category, Sargent maintained "[I]f these sports and games should be so modified as to meet the peculiar constitutional requirements of women—there are none of them that could not be played with

[87] Ibid., 48.
[88] Dudley A. Sargent, "What Games, if Any, Are Injurious for Women in the Form in Which They are Played by Men?" APER 11 no.3 (September, 1906):179.

reasonable hopes of physical, mental, and moral improvement."[89] Thus, rather than suppressing activities for women, Sargent, and many of his students, greatly expanded the field of women's physical education and activity. Throughout his life he spoke out against physically-restricting fashion of wearing corsets and celebrated their demise, and in the 1910s he would publicize more progressive views of women's abilities including their potential to serve as soldiers in World War I.[90] Furthermore, we must put these ideas in the context of Sargent's views on sports and student life in general. Throughout his career, Sargent was concerned that competitive and violent sports had a demoralizing effect on players and spectators alike. Moreover, for men and women the intensity of sports could lead to neurasthenia and the development of specialized body forms, which he considered to be detrimental deformities. Thus, he thought that many athletic activities might be damaging to both sexes, not only to women.

In *Manhood at Harvard*, Kim Townsend writes that: "throughout his long career Sargent had an ideal man in mind who is, but now immediately recognizable: a gentleman who was well-balanced, and self-possessed, and who could bring order to a nation recently divided by war and currently threatened by invading immigrants from without."[91] While Sargent may have promoted a gentlemanly behavior, as opposed to the behavior he derided at college football games, the second half of the sentence assumes Sargent to be unduly aggressive and nativist, embodying the fears which Bederman connects to the definition of masculinity of the early twentieth century. From reading the bulk of Sargent's work, one learns that he rarely used such rhetoric and that his program was democratic in scope. As historian Donald Mrozek has stated, "to a considerable extent, Dudley Sargent shied away from casual and usually unfounded

[89]Ibid., 179.
[90]This is illustrated in Chapter Four.
[91] Kim Townsend, *Manhood at Harvard: William James and Others* (Cambridge, MA: Harvard University Press, 1998), 100.

assertions about the relationship of heredity to performance in sport, of race to willpower, and a host of issues that roused the curiosity of many turners, psychologists, and politicians."[92] Furthermore, Sargent voiced concerns against laissez-faire capitalism. He drew parallels between unrestrained competition in the economy and within athletics, and believed it was important to regulate the harsher elements in both.[93] In the 1910s, he expressed approval at seeing "a gradual awakening of a socialized conscience" which he hoped would flourish against the "primitive method of struggle and competition."[94]

In framing Gulick, Sargent and their followers as biological engineers my work highlights the medical nature of their profession rather than masculine anxiety or muscular Christianity. Such interpretations often skew Sargent's views, neglect Gulick's later career, and do not give enough attention to the interconnections between physical training and the school hygiene movement. In joining these two into one project of biological engineering, as Gulick had envisioned, my work places the careers of these leaders in the context of Progressive reform and public health initiatives that involved the hygiene of prevention. It also draws attention to the role of the physical director, which closely epitomizes the biological engineer. Preferably for trained physicians like Sargent, Gulick, Edward Hitchcock, Mary T. Bissell, William G. Anderson, Edward M. Hartwell, Jay W. Seaver, R. Tait McKenzie, Eliza Mosher, Delphine Hanna, Thomas Wood, Thomas Storey, and other early physical directors, this was to be a highly-trained supervisor of physical training and hygiene. Yet, this profession was short-lived, for in the early 1910s, physical education came to be associated more with sports, and fewer

[92]Donald J. Mrozek, *Sports and American Mentality, 1880-1910* (Knoxville: University of Tennessee Press, 1983), 39-40.
[93] Sargent, "Competition and Culture," *National Education Association Journal of Proceedings and Addresses* 48 (Printed by the University of Chicago Press, 1910):225.
[94] Ibid., 138.

physicians were entering the field.[95] Furthermore, biological engineers faced apathy and a lack of compliance among the subjects of reform, along with internal conflict and lack of unity. By viewing these two movements side by side, we can see that much of the medical focus of physical education became partially absorbed within the school hygiene agenda, thus severing the field of biological engineering. In education, the ambitious plan for medically-guided individualized physical training or physical education as "applied hygiene," was lost.[96]

Overview

Clearly the biological engineers had a very ambitious vision but they also faced many setbacks. As will be discussed in Chapter Two, they believed that everyone in society was in need of health guidance. They focused particularly on the ways in which the division of labor and schooling were detriment to the bodies of children and adults of all classes. People lacked symmetry, children developed "school diseases" and everyone was subject to neurasthenia. How physical training could alleviate health problems of nervousness and the division of labor is one of the themes of Chapter Three. People in the field had great faith that training could also help the mind and the will, and sought to promote programs not only in schools and colleges, but in doctor's offices, hospitals, institutions and reformatories.

Sargent's system of training, analyzed in Chapter Four, incorporated much of the biological engineering vision. He aimed to popularize his system through teaching at his schools, writing widely and using his extensive anthropometric examinations to create his well-known statues of the average male and female college student at the Columbian Exposition.

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[95] Charles William Hackensmith, *History of Physical Education* (New York: Harper & Row, 1966).
[96] Sargent, "Teacher of Physical Education in Public Schools," 1010.

Throughout his career, he also experimented with various ways to measure the "unknown equation" that made people perform active tasks and in turn set the research agenda of his field.

Although widespread, the type of training embodied in Sargent's system faced many setbacks. Chapter Five illustrates how many college students were aware of his system and basic ideas of physical education. Student-run newspapers featured numerous editorials and articles attesting to the students' desire for modern gymnasiums in order to promote both universal physical training and athletics. However, numerous students shunned mandatory training, often presenting notes from family doctors excusing them from class. This was a consistent complaint of physical educators at various institutions and they sought power to override outside doctors. In primary and high schools it was too expensive and time-consuming to employ prescribed training and purchase Sargent's machines. Chapter Six illustrates how physical educators participated in the "Battle of the Systems" in order to establish different school programs. Arguments over methods of anthropometry were also common, and often involved Sargent and Edward Hitchcock, another leading physical educator. These decades-long conflicts led to a good deal of pluralism in the field. Additionally, some critics of systematic training questioned whether universities had the right to mandate them, and attacked the new consciousness of training as a duty. In the early twentieth century, many of the physical educators began to see the merits of play and sports and promoted them more fully, along with prescribed exercise in many cases.

In order to fill a perceived void in primary and high school physical training, the biological engineers supported school hygiene initiatives, the subject of Chapter Seven. School hygiene became very expansive, involving inspection by the board of health inspectors, physical examination by the board of health or the board of education inspectors, referrals, school

nursing, hygiene lessons and general school sanitary guidelines. Gulick would soon complain that examinations were too superficial and lacked standardization. In the early 1900s, school diseases were conflated with so-called backwardness in studies, resulting in biological reductionism rather than an individualized, holistic view of health.

The First World War brought with it a slight panic regarding the health of American men when the draft revealed that one third were not healthy enough to serve. The Army used inclusive athletics among the troops and instituted sex education. Sargent and others chided the population for their negligence and promoted universal physical training laws. Into the 1920s, school medical inspection and physical education continued to grow and states passed laws making them mandatory. However, as hygiene departments developed, they were often given the medical functions which were formerly part of physical education, fragmenting the endeavors of the biological engineers.

Chapter 2. Work, Education and the Health of Americans

Luther Gulick's formulation of biological engineering focused on both the health of schoolchildren and adult neurasthenics within modern society. He believed that biological engineers could uplift these groups through diet, exercise and generally teaching them how to live. Modern education and neurasthenia were very intertwined in the minds of physical educators and hygienists. Education could cause, prevent, and cure neurasthenia. Reviewing the foundations of neurasthenia and its class, gender and age dimensions illustrates the goals of the biological engineers in reference to education, medicine and culture of the late nineteenth and early twentieth centuries.

In 1869, the neurologist George M. Beard popularized his idea that Americans suffered from nervous exhaustion. For Beard, the disease affected mostly elites who did not labor physically and who either experienced domestic boredom or strain from the quickened pace of modern life. Although he did consider inherent temperament and constitution, his work overflows with environmental and social causes and explanations for "American Nervousness." An expression of the cultural anxiety over modernization, Beard's work laid a foundation for people to stake their claims regarding the definition of mental illness along class and racial lines. For succeeding cohorts of doctors, nervousness affected workers who labored in unhealthy ways and worried about their sustenance. It was true that professional men were growing physically inactive. Yet, active workers labored under harsh circumstances and modern industrialization proved both physically deforming and nervously exhausting. Schooling, moreover, was spreading and becoming more regulated in the years following the Civil War. While Beard had alluded to the pitfalls of study briefly in his work, others emphasized "school diseases" in later

decades. Schooling seemed to encompass the problems of modern labor. It was sedentary like professional work, deforming like industrial labor, and mentally stressful like both. It could lead to weakness, nervous breakdown, physical deformity and even death.

While many believed that females, young and old, were at a disadvantage, facing modern life with less vitality and capacity, this was not the consensus. Notions of women's inherent frailty and illness were common in the nineteenth century, yet the focus on social and environmental causes of neurasthenia helped to move away from strict biological determinism. Males broke down alongside females, lower-class along with upper-class. All Americans were in need of assistance in adapting and living vividly in modern industrial society.

"American Nervousness": Beard's Interpretation and His Challengers

Anxiety, depression, aches and fatigue, all quite common conditions of humanity, were organized together by neurologist George Miller Beard as a mental disease called neurasthenia in the last quarter of the nineteenth century. It was an apt time, he believed, for Americans were at the forefront of modern civilization, and this was indeed a disease of modernization. Neurasthenia inspired debate among Beard's contemporaries and later scholars alike because it encompasses so many features of our imperfect minds and bodies and because Beard believed it had great social and cultural meanings.

Interpretations that focus on gender construe neurasthenia as a medical consequence of people acting outside of their normative gender roles. Men, therefore, became neurasthenic when they felt or acted as if they lacked power or authority. Women became neurasthenic when they sought to exceed their restricted sphere. The treatment involved reasserting traditional nineteenth century gender roles; men were told to live strenuously, young boys were encouraged to play like

"primitives" in efforts to prevent neurasthenia, and women were subjected to the infantilizing "rest cure."[1]

In addition to gender, historians have pointed to other supposed causes of nervousness, which were often interrelated. Like gendered interpretations, these causes of neurasthenia can be connected to the American cultural landscape in the late nineteenth and early twentieth centuries. A concentration on elites and intellectuals with this illness informed T.J. Jackson Lears' study of anti-modernism. In this sense, neurasthenia was an expression of dissatisfaction with modern life, leading people to delve into the past for more intense and authentic ideas and practices.[2] Anti-modernism also informs Gail Bederman's book which examines gender during this period. One of her contributions was to illustrate how the pioneering psychologist G. Stanley Hall criticized schools as unnatural agents which caused nervous disease for young men.[3] Charles Rosenberg observed that George Beard related neurasthenia to the progress of American civilization in connection with contemporaneous notions of American Exceptionalism.[4] Additionally, Francis Gosling and Barbara Sicherman have illustrated that doctors believed that nervous disease did not only affect the upper-classes.[5] They both indicate that physicians at work in clinics and dispensaries found neurasthenia among their patients. These historians have looked past Beard's publications to the work of many other physicians who treated mental

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[1] John F. Kasson, *Houdini, Tarzan, and the Perfect Man: The White Male Body and the Emergence of Modernity in America* (New York: Hill and Wang, 2001); Michael Kimmel, *Manhood in America: A Cultural History* (New York: The Free Press, 1996); Tom Lutz, *American Nervousness, 1903: An Anecdotal History* (Ithaca: Cornell University Press, 1991); Ann Douglas Woods, "'The Fashionable Diseases': Women's Complaints and Their Treatment in Nineteenth Century America," *The Journal of Interdisciplinary History* 4 (1973): 36-44.
[2] T. J Jackson Lears, *No Place of Grace: Antimodernism and the Transformation of American Culture 1880-1920* (New York: Pantheon Books, 1981), 3-58.
[3] Gail Bederman, *Manliness and Civilization: A Cultural History of Gender and Race in the United States, 1880-1917* (Chicago: University of Chicago Press, 1995).
[4] Charles Rosenberg, *No Other Gods: On Science and American Social Thought* (Baltimore: Johns Hopkins University Press, 1972), 98-108.
[5] Francis G. Gosling, *Before Freud: Neurasthenia and the American Medical Community, 1870-1910* (Chicago: University of Chicago Press, 1987); Barbara Sicherman, "The Uses of Diagnosis: Doctors, Patients, and Neurasthenia," in *Sickness and Health in America*, eds., Judith Walzer Leavitt and Ronald L. Numbers (Madison: University of Wisconsin Press, 1978).

problems. In exploring the medical views of the late nineteenth and early twentieth centuries, it is clear that neurasthenia captured the attention of the diverse specialists, and many challenged Beard's key ideas. In illustrating that diverse groups were diagnosed with neurasthenia, we can understand that physicians perceived there were widespread causes of the illness throughout American society.

If there ever was a disease that incorporated many common ailments of mankind, it was neurasthenia. Among the general symptoms listed for neurasthenia—also called American nervousness, nervous exhaustion and nervous prostration—were pains, exhaustion, problems with digestion, sexual problems, sensitivity to stimuli, and fears. A mixture of the physical and mental often characterized various cases of neurasthenia because it was conceived to stem from a lack of nervous force which could affect the body as well as the mind.[6] Furthermore, it was classified to be a "functional nervous disease" because it lacked a clear organic cause.[7]

According to Beard, the symptoms of functional nervous disease were "fleeting, transient, metastatic, and recurrent" rather than "fixed and stable."[8] Among the mental symptoms were various fears: fear of lightening, society, responsibility, loneliness, contamination, as well as fear of fear and fear of everything.[9] Nervous people might also experience a feeling of hopelessness, morbid thoughts, depression, indecisiveness and a lack mental control. Among the significant physical issues were pains in the back, tailbone, neck, brain, feet, perineum, vague pain, shooting pains, cramps, and headaches, nerve pain, and general pain. Nervous people might have digestion problems or difficulties expelling waste. Poor vision and dilated pupils were also symptoms. Nervous people were often exhausted, dizzy,

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[6] George M. Beard, *A Practical Treatise on Nervous Exhaustion (Neurasthenia)* (New York: William Wood & Company, 1880), 157-58.
[7] Ibid, 157.
[8] Ibid., 123.
[9] Beard, *American Nervousness, Its Causes and Consequences* (New York: G. P Putnam's Sons, 1881), 7.

and suffered insomnia and found to be gaping and yawning. Hay fever and drowsiness were also common. Hands and feet could be sweaty, red or cold, and they experienced chills and hot flashes. Also possible were sexual problems including impotence, involuntary emissions and "functional diseases for women." Among the more bizarre markers of nervous exhaustion were baldness, hair loss, dry hair and skin and tooth decay. [10] Highly sensitive, neurasthenics were often picky with food and medicine, and might use stimulants and narcotics. As a sign of their refined systems they were sensitive, having sensitive teeth, and sensitivity to tickling, temperature and noise, often itchy, and easily flushing. Beard claimed that "A person suffering from any number of the above-named symptoms is one who has a narrow margin of nerve-force."[11] Since these symptoms could also be partial or fleeting, a large part of the population had the potential to suffer from neurasthenia.

Beard asserted that "[T]he chief and primary cause of this development and very rapid increase of nervousness is *modern civilization.*"[12] Neurasthenics were experiencing the changes of social life to an unprecedented scale, more so than people in other countries and other regions in the United States. Steam power, railroads and telegraphy sped up the pace of transportation and the transmission of information. The prevalence of watches exacerbated this effect by creating worry over punctuality. Not only was business news relayed around the world in the daily press, but news of disaster, war and famine. This emotional significance of news media was not lost on Beard, who wrote, "[T]he sorrows of any part of the world, many times greater geographically than the old world as known to the ancients, through the medium of press and the telegraph are made the sorrow of individuals everywhere."[13]

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[10] Ibid., 7-8.
[11] Ibid., 9.
[12] Ibid., vi.
[13] Ibid., 133-134.

Notions that America was an exceptional nation, where people constantly struggled for upward mobility, also informed Beard's work.[14] He believed Americans were constantly striving to ascend the economic ladder, while Europeans were traditional and complacent. The Northeastern region of the United States, with its burgeoning cities, along with the developing West, were more likely to produce neurasthenia, as opposed to the more conservative South.[15] Furthermore, the raucous nature of American elections and political rallies added to the excitement of the times.

How did Beard relate the sociological conditions of modernizing America to the enormous symptomatology of nervous exhaustion? Innate temperament and notions of evolution mingled with environmental causes. Beard thought neurasthenics were born with a fine nervous organization, as exhibited by their sensitivity to stimuli, which put them at an elevated phase of evolution.[16] These people were most likely in the upper classes and living a modern, urban lifestyle. This fine nervous organization proved to be both a cause of the development of higher civilization as well as an effect. In contrast, according to Beard, the "coarse" and "dark" races rarely had a sensitive nerve organization and were likely to become insane rather than delicately nervous. In the "coarse races and coarse individuals," Beard believed, "[N]ervous force travels more slowly," making them less reactive to sense stimuli.[17] In the American classes which still worked with their muscles on farms and in industry, Beard held that nervous diseases were also quite rare.[18]

Along with the refined senses of neurasthenics came some surprisingly positive qualities. Nervous people proved long-lived, beautiful and quite content. They seemed to have a large

[14] Charles Rosenberg, *No Other Gods: On Science and American Social Thought* (Baltimore: Johns Hopkins University Press, 1972).
[15] Beard, *American Nervousness*, 186.
[16] Ibid., 26.
[17] Ibid., 50-51.
[18] Ibid., 92-93.

emotional range and elevated philosophy of life. Beard wrote rather eloquently that, "if they are plunged into a deeper hell, they also rise to a brighter heaven; their delicately-strung nerves make music to the slightest breeze; art, literature, travel, social life, and solitude, pour out on them their selected treasures; they live not one life but many lives, and all is for them variously multiplied."[19] Their joys, if seldom achieved fully, were a compensation for their frequent troubles. Moreover, if the neurasthenic dealt with frequent pains, they were more appreciative of its lack because "[T]he most exquisite physical pleasure, it has been said, is sudden relief from violent pain."[20] He asserted that the happiest people that he came across were partial invalids because they were able to appreciate the parts of them which worked well, or the times when they felt comparably well.[21] These pages of Beard's work seem to contradict George Cotkin's assertion that this "defining affliction of modern times, with its common symptoms of ennui, languidness, and depression…led to a nightmare view of life in this era."[22] However, by the early 1900s, leading neurologist Francis X. Dercum remarked that many of these "partial observations" no longer had any credence.[23] From the 1880s into the early 1900s, Beard's other ideas regarding the nature of neurasthenia would be questioned by people who worked in medicine and public health.

At the 1884 meeting of the Philadelphia County Medical Society, doctors argued over Beard's assertions that Americans were singularly nervous because their nation was at the pinnacle of civilization. Doctor Roberts Bartholow, who had served as Assistant Surgeon to the Northern Army in the Civil War, claimed that the conditions in France were more conducive to

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[19] Ibid., 276-277.
[20] Ibid., 279.
[21] Ibid., 277-278.
[22] George Cotkin, *Reluctant Modernism: American Thought and Culture, 1880-1910* (Maryland: Rowman & Littlefield Publishers, 2004 [1992]), 144.
[23] Francis X. Dercum, *A System of Physiologic Therapeutics, Volume VIII Rest, Mental Therapeutics, Suggestion* (Philadelphia: Blakiston's Son & Co, 1904), 79.

producing neurasthenia than those in the United States. Neurasthenia should be called the "French Disease" because "frequent political convulsions, the exacting social life and the great cities, and the harassing struggle for existence." The two factors that were seen to produce neurasthenia in America—labor and "our exciting political and social life"— were "greatly overrated."[24] In Prussia as well there were "demands on the brain severer" than those in the United States.[25] Neurologist Charles K. Mills disagreed. Beard's conception of American disease was correct because business life in American was far "more taxing" than in Europe. In the United States "every man has a chance to rise to the highest position, and men enter especially political life in youth…They often attempt work too high for their mental powers and break down."[26] In France particularly, deep class divisions remained and men were not tempted to rise above their station.

Physicians challenged Beard's claims to originality in naming and creating an etiology for the disease. Here, too, American doctors sought European precedents. Dr. Francis X. Dercum declared medical men had described a similar "affection" in the sixteenth century.[27] Dr. George W. Johnston found neurasthenia in twenty-one dictionaries, of various European languages, beginning with an 1814 German edition.[28] Dr. Henry Elsner stated neurasthenia was known in the ancient world and described by many British and German physicians in the early nineteenth century.[29] Professor of Nervous Diseases at the University of Pennsylvania Horatio C. Wood considered neurasthenia to be a condition formerly known as debility and common in

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[24] Roberts Bartholow, "What is Meant by Nervous Prostration," *Proceedings of the Philadelphia Country Medical Society, Volume Sixth* (Philadelphia, 1884):126.
[25] Ibid., 130-131.
[26] Charles K. Mills, "Discussion," *Proceedings of the Philadelphia Country Medical Society, Volume Sixth* (Philadelphia, 1884): 129.
[27] Francis Xavier Dercum, *A Text-book on Nervous Diseases* (Philadelphia: Lea Brothers & Co., 1895), 51.
[28] George W. Johnston, "Neurasthenia, Comment," *Transactions of the Medical Society of the District of Columbia* (November 24, 1897):207-208.
[29] Henry L. Elsner, "The Pathological Factors of Neurasthenia," *New York Medical Journal* 65 (April 10, 1897): 491.

the past.[30] Furthermore, Dercum, Johnston, and several other doctors attributed the modern usage of neurasthenia to Doctor Edwin Holmes Van Deusen, the Medical Superintendent of the Michigan Asylum for the Insane.[31]

Dr. E. H. Van Deusen did in fact employ the term in his 1867 report, and applied it to the class of people that were under his charge at the Michigan Asylum for the Insane: poor, rural women. He sympathetically, yet candidly, described conditions of newly-wedded wives "of some of our smaller farmers." The woman's "new *home,* if it deserve the name, is, by strict utilitarianism, deprived of everything which can suggest a pleasant thought." She faced isolation from her family and friends, monotonous labor, and frequent marital and financial problems issues. Aside from the lot of the rural housewife, Van Deusen also granted that "[T]he hot-house educational system of the present day, and the rash, restless, speculative character of many of our business enterprises" also yielded nervous disease. Neurasthenia was a product of "excessive mental labor, especially when conjoined with anxiety and deficient nourishment" along with "depressing emotions, grief, domestic trouble, prolonged anxiety and pecuniary embarrassment; hemorrhage and debilitating diseases, following or coincident with depressing mental influences and sleeplessness."[32]

If Van Deusen's interpretation had gained more currency, the dominant understanding of neurasthenia as an elite disease would have been completely undermined and the mental illness of non-wealthy people might have been treated differently. At this point, the care for mental

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[30] Horatio C. Wood, "Stimulation in Acute Diseases," *Medical Record* 51(March 6, 1897):350; H.C. Wood, *Brain-Work and Overwork* (Philadelphia. Blakiston, Son & Co., 1888).

[31] C.H. Hughes, "Neurasthenia Not a New Term-Some Recent writers Corrected—Neuratrophia," *The Weekly Medical Review*15 no. 11 (March 12, 1887):294-295; Dercum, *A Text-book on Nervous Diseases*, 51-52; George W. Johnston, "Neurasthenia, Comment," *Transactions of the Medical Society of the District of Columbia* (November 24, 1897):207-208; Johann Flintermann, "Neurasthenia," *Physician and Surgeon* 20 no. 9 (September, 1898):403-404; Charles Dana, "Neurasthenia," in *Twentieth Century Practice* Volume X, ed. Thomas L. Stedman (New York: William Wood and Company, 1897),735-737.

[32]E.H. Van Deusen, "Observations on a Form of Nervous Prostration, (Neurasthenia,) Culminating in Insanity," *Journal of Insanity* 25 (April, 1869): 447, 445.

illness was greatly divided. The upper-classes were able to go to private practice neurologists, such as Beard, who were the equivalents of modern-day psychiatrists, where nervous disease became the prominent diagnosis for minor and possibly severe mental problems. In these offices, neurologists offered individualized treatment such as advice in exercise, diet, rest, and various medications, as well as types of suggestive therapy or "re-education" of the patient. On the other hand, mentally-ill working-class people were given care in asylums, likely by alienists, and often classified as insane. These various institutions were often understaffed and likely to become mere "warehouses." Frequently, private institutions for elites edited the word "insane" out of their names and substituted "nervous disease" which was less stigmatizing.[33] Thus, there was a large gap in mental health care for working-class people with minor mental problems.

Beard's comprehensive vision of all the possible causes and symptoms of nervous disease became very well-known in the late nineteenth-century medicine. Moreover, his anxiety over the harmful physical and mental effects of modernization spoke to common apprehensions of the time period. As neurology spread to the various classes of society through dispensaries and clinics, many doctors challenged Beard's ideas of American Exceptionalism and the class hierarchy of neurasthenia by claiming that the working class and immigrants were very nervous people. These concerns corresponded with beliefs, often voiced by physical education advocates, that the division of labor was harmful to both the physical and mental well-being of workers.

Workers, Nerves and the Division of Labor

During the nineteenth century America was undergoing a long, intense phase of the Industrial Revolution. Early factories developed in the Northeast, leading to greater mass

[33] Edward Shorter, *A History of Psychiatry: From the Era of the Asylum to the Age of Prozac* (New York: John Wiley & Sons, 1997), Chapter 4.

production of cloth through water power. Steam engines transformed labor and transportation as railroads changed the landscape and integrated the nation into a large-scale market economy. The apprenticeship system was in the last stages as the pace of production quickened through piece work and specialized labor. Modern manual workers labored under piece-work systems, stricter factory floor supervision, and, as the century turned, scientifically managed shops and assembly lines. At the same time farms were increasingly mechanized and a new class of white-collar office work was developing, tying people to desks and corporate environments. Workers in the health field observed that these changes clearly affected people's physical and mental health. By taking the effects of industrialization seriously, physicians and educators incorporated workers into the realm of people who could be subject to nervous exhaustion.[34]

As we have seen from Gulick's declaration about biological engineering, physical educators and hygienists were spurred to reform health, in part, by the changes of life under these new conditions. They often cited modern industrialization as the key cause of people's poor health. According to physical director F.H. Whittier, "[F]arming and lumbering, and other laborious occupations, are becoming unpopular. We are changing from handworkers to brainworkers."[35] However, they realized that "human power cannot stop industrial evolution," as physical educator E.H. Arnold wrote.[36] Thus, it was the task of biological engineers to guide people in hopes that they would healthfully adapt to the changes wrought by modern industrialization.

Dudley Sargent and other physical educators were influenced by the 1869 hygiene textbook written by English biologist Thomas H. Huxley and American scientist William Jay

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[34] On industrialization see Walter Licht, *Industrializing America* (Baltimore: Johns Hopkins Press, 1995); Stuart W. Bruchey, *Enterprise: the Dynamic Economy of a Free People* (Cambridge, Mass.: Harvard University Press,1990); George R. Taylor, *The Transportation Revolution, 1815-1860* (New York: Rinehart,1951)

[35] F.H Whittier, "Gymnastics in Schools" *Annals of Hygiene* 7 no. 11(November 1, 1893):587

[36] E.H. Arnold, "Social Importance of Gymnastics," *Mind and Body* 4 no. 46 (December, 1897):225.

Youmans in which they stated that the division of labor created "the tendency in modern life…to overwork a narrow portion of the human constitution and underwork the remainder."[37] A balanced body was ideal for physical educators in this period because they believed overworking one part would lead to disease and deformity.[38]

Pre-industrial forms of labor were thought to be beneficial to developing a balanced body. Gulick and G. Stanley Hall lauded the work done on the "all-around farm" as compared to modern labor. Young people had the opportunities to practice milking and driving cows, woodworking, hunting, chopping wood and husking corn. Pre-industrial farms were often romanticized and contrasted to work done under the modern division of labor. Gulick stressed: "[L]et these activities be compared with those of the mill operative who 'tends a machine' of some kind, or with those of the salesman in a store, or the clerk in a bank, and the contrast becomes evident."[39] Sargent similarly lamented the loss of old-fashioned labor that was supposedly healthier. In 1884 he stated: "When once a man's occupation furnished him all the exercise he needed for the maintenance of health, he is now obliged to give what health he has to his occupation, and trust to other resources to make up the deficiency."[40]

Physical educators and health promoters such as William Blaikie, a friend of Sargent, took note of the human forms that were developing from various types of "one-sided labor" and sedentary occupations. Blaikie described farmers with well-developed backs but sunken chests, heavy laborers with curved backs and round shoulders, and increasingly sedentary businessmen

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[37] Thomas H. Huxley and William Jay Youmans *The Elements of Physiology and Hygiene; A Textbook for Education Institutions* (New York: D. Appleton and Company, 1869),345
[38] William Blaikie, *How to Get Strong and Stay So* (New York: Harper Brothers, 1884[1879]), 17.
[39] Luther H. Gulick, *Physical Education by Muscular Exercise* (Philadelphia: P. Blakiston's Son & Co., 1904), 4.
[40] Dudley A. Sargent, "Physical Training," *Public Health Papers and Reports, Volume IX, Presented at the Eleventh Annual Meeting of the American Public Health Association* (Concord, N.H.: Republican Press Association, 1884):121.

who became overweight, "anxious and haggard."[41] Gulick also realized that health was linked to occupation caused by the "minute subdivision of labor."[42]

Dudley Sargent, perhaps more than any other physical educator, was fascinated with the effect of labor on the body. As he began his career at all-male Bowdoin College in the early 1870s, Sargent observed that his male students' physiques depended on their work histories. He studied the different forms developed by those who walked long distances to school, chopped wood, milked cows, or had experience in general manual labor and blacksmithing.[43] As Carolyn Thomas de la Peña has argued, Sargent had learned first-hand that "form follows function" and this discovery inspired much of his physical education program, leading him to develop pulley machines that mimicked many motions of manual labor.[44]

Endeavoring to find data on physical development, Sargent found that "little systematic effort has been made to obtain reliable information by means of physical measurements.[45] This led some people to examine the lengthy volumes of statistics compiled by J.H. Baxter, a Colonel and Chief Medical Officer of the Provost-Marshal-General's Bureau during the Civil War, which provided statistical analysis of Union soldiers.[46] Sargent quoted the report in his work, recounting the lists of men rejected for service. He found that 52% of professional men were rejected, 47.9% of the mercantile class, 43% of skilled labor and 34.8% of unskilled labor. The smallest percent of rejection was found among iron workers, at 18.9% and professional soldiers

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[41] Blaikie, *How to Get Strong,* 10-19. Quote on 13.
[42] Gulick, "Vitality and Modern life," *Physical Education* 5 no. 3(May, 1896):23.
[43] Dudley A. Sargent, *Physical Education* (New York: Ginn and Company, 1906), 131.
[44] Carolyn Thomas de la Peña, *The Body Electric: How Strange Machines Built the Modern America* (New York: NYU Press, 2005), 51- 53. Thomas De la Peña points out how Sargent sought to implement a system that modeled manual labor through his physical fitness programs.
[45]Sargent, "The Physical Proportions of the Typical Man," *Scribner's Magazine* 2 no.1 (July, 1887):6.
[46]J.H. Baxter, *Statistics, Medical and Anthropological, of the Provost-Marshal-General's Bureau, Derived from Records of the Examination for Military Service in the Armies of the United States During the Late War of Rebellion of Over a Million Recruits, Drafted Men, Substitutes, and Enrolled Men* (Washington: Government Printing Office, 1875).

at 18.3%, while the largest rates were for editors and teachers, each with 73.9%. He emphasized that, "the division of labor, while it has increased skill and efficiency and added greatly to the total product of human industry, has robbed man of its beneficent influence as a means of general development." He realized that unskilled labor was not always beneficial, stating that "[M]any men spend their lives in polishing a knife blade or pointing the head of a pin."[47]

By 1904, Sargent became quite adept at delineating the health risks produced from various occupations. For example, writers, pianists, engravers, violinists, seamstresses and telegraph operators developed cramps and paralysis from the excessive use of small muscle groups. Those in vocal occupations—such as singers, clergymen, and actor—developed strained and swollen vocal cords. "The results of working with the body in a strained position" were illustrated in the bodies of printers, compositors, pressmen, cabinetmakers, shoemakers and tailors.[48] The latter two were often flat-chested and round-shouldered with legs that became "flaccid and withered from disuse."[49] Sargent believed these relatively inactive people were prone to digestion and liver problems. He was also aware of occupational diseases arising from poor working conditions and exposure. Thus, he concluded that, "in the main the division of labor which calls into prolonged activity only a few faculties at a time is largely responsible for the tendency to physical degeneracy."[50]

Working women were equally harmed by the division of labor. "Regarded as the weaker sex," women, Sargent wrote, were "generally given or fit into positions which require seemingly little effort" working as clerks, stenographers, typist, cashiers, bookkeepers, saleswomen,

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[47] Sargent, *Physical Education*, 44. See also Sargent, "Physical Training as a Compulsory Subject," *The School Review* 16 (January 1908): 42-55.
[48] Ibid., 53.
[49] Ibid., 53.
[50] Ibid., 55. On the division of labor and occupation, also see John C. Cutter, "The Need of Exercise," *Mind and Body* 4 no. 47(January, 1898): 251-252.

waitresses and factory employees. [51] Sargent judged this labor to be, counter-intuitively, "much more fatiguing" than heavy labor because of "the confined positions in sitting or standing, the constant use of small groups of muscles, and the continued nervous tension under which many women have to work."[52]

It is evident that Sargent believed the division of labor was detrimental to men and women's minds and bodies. Rather than provide people with healthful physical activity, modern labor was either quite sedentary or intensely straining for one body part. As seen above, Sargent was also concerned about the "nervous tension" under which many people had to labor. Like Gulick, Sargent was influenced by Beard's writing on neurasthenia. He wrote that "the telegraph, daily press, and means of rapid transit," as well as America's exceptional upward mobility, quickened pace of work and climate combined to cause "American nervousness."[53] Yet, Sargent stressed that all people were affected by modernization and specialized labor, not only the upper class. Such ideas informed his declaration that the "tendency to make almost continuous efforts along certain narrow lines of endeavour, whether in school, business, or professional life, is what has made work at the present day so fatiguing, and given rise to so many nervous and mental diseases."[54]

In emphasizing that workers were subject to nervous diseases, many biological engineers were complementing the ideas of neurologists who were making similar claims that modern industrialization combined with a lack of adaptation and certain types of temperament were leading to neurasthenia among people who were not considered to have "refined nerves" by Beard and like-minded thinkers. In broadening the bounds of nervousness, these physicians

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[51] Dudley A. Sargent, *Health, Strength and Power* (New York: H.M. Caldwell, 1904), 68. Sargent's philosophy of training is explored in more detail in Chapter Four.
[52] Ibid., 69.
[53] Sargent, *Physical Education*, 39-40.
[54] Sargent, *Health, Strength and Power,* 145.

were seeking better treatment for working-class people who often could not afford the care provided to middle and upper-class patients attending private-practice neurologists. Indeed, the plans of physical educators to prevent and cure neurasthenia through exercise and more healthful living parallels early therapies offered to these upper-class neurasthenic patients.[55]

In the 1880s and 1890s, neurologists working in clinics and dispensaries observed neurasthenia among factory and shop workers. The "American Disease" it would seem, was affecting the thousands of Eastern and Southern European immigrants who were entering American ports and settling in the nation's cities. By the early 1900s, physicians at New York's Vanderbilt Clinic stated "[N]eurasthenia is par excellence the disease of dispensary patients" as well as the "bête noire of the dispensary neurologist."[56] A St. Louis physician, Ludwig Bremer, studied the illness and came to "the seemingly paradoxical conclusion that the poorer a person is the more apt he is to be neurasthenic."[57] Similar to Beard's explication of the disease, the model for the disease among workers had social, biological, and environmental causes.

Poor sanitary conditions at homes and places of employment, along with economic hardship and instability were indicated as factors causing stress for working-class and poor neurasthenics. Bremer cited "harassing cares about daily bread, and other depressing factors, such as unhealthy dwellings."[58] According to New York physicians Dr. Joseph Collins and Carlin Philips "[N]eurasthenia has increased in frequency as social, political, and economical

[55] See Chapter Three.
[56] Smith Ely Jelliffe and L. Pierce Clark, "The Work of a Neurological Dispensary Clinic," *The Journal of Nervous and Mental Disease* 30 no. 8(August, 1903):484; Charles D. Cleghorn, "Notes of Six Thousand Cases of Neurasthenia," *Medical Record* 71 no. 17 (April 27, 1907): 681.
[57] L. Bremer, "Neurasthenia, "*The Medical Standard* 15 no. 1(January, 1894):2.
[58] Ibid., 2.

conditions have made the struggle for existence more violent and the prospects of a quiet life more perilous."[59]

Bremer, Collins, Philips, and numerous other physicians turned Beard's ideas upside down in asserting that the working class was thoroughly nervous. Cases of neurasthenia were found in domestic workers, tailors, clerks, laborers, railroad workers, storekeepers, carpenters, waiters, printers, barbers, plumbers, peddlers, students, weavers, firemen, porters, metal workers, seamstresses, shop girls and factory hands.[60] Doctors particularly highlighted "indoor" occupations as the most harmful. Eighty percent of Collins and Phillips's neurasthenia cases at their New York City clinic were found in those working indoors.[61] Although Charles Cleghorn found neurasthenia in active and/or outdoor workers such as watchmen, firemen, porters and carpenters, twice as many were employed in indoor and less active work.[62] These indoor workers were likely practicing monotonous "one-sided" labor undertaken in cramped positions which physical educators found to be physically deforming. Yet, according to Collins and Philips it was "not so much physical and mental work or overwork that produces neurasthenia as it is worry, anxiety, depression, and their entailments of sleeplessness and disordered digestion."[63]

In the 1910s, the garment industry was singled out as causing neurasthenia among workers. Dr. Sidney I. Schwab held that twenty to thirty percent of his dispensary patients

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[59] Joseph Collins and Carlin Phillips, "The Etiology and Treatment of Neurasthenia. An Analysis of Three Hundred and Thirty-Three Cases," *Medical Record* 55 no. 12 (March 25, 1899): 415.
[60] A.B. Arnold, "Neurasthenia," *Medical and Surgical Reporter* 56 no. 9 (February 26, 1887): 259; Collins and Phillips, "The Etiology and Treatment of Neurasthenia,"413; J.V. Shoemaker, "Neurasthenia," *The Medical Bulletin* 25 no. 10 (October, 1903): 385-389; Cleghorn, "Notes of Six Thousand Cases of Neurasthenia,"682; Cecil MacCoy, "Some Observations on the Treatment of Neurasthenia at the Dispensary Clinic," *Brooklyn Medical Journal* 17 no. 9(September, 1903): 399-401.
[61] Collins and Phillips, "The Etiology and Treatment of Neurasthenia," 413.
[62] Cleghorn, " Six Thousand Cases of Neurasthenia," 682. See also, "Nervous Exhaustion," *Current Literature* (25 no. 2 (August, 1899): 123.
[63] Collins and Phillips, "The Etiology and Treatment of Neurasthenia," 415.

suffered the American Disease, which was caused by poor working conditions, anxiety regarding unemployment and the quickened pace of labor under the piece work system. Schwab asserted that "medically the piece-work system is perhaps the most pernicious thing that could be devised to weaken what for a better term might be described as the dynamic efficiency of the nervous system."[64] A report issued by the New York Commission on Building Districts similarly highlighted the presence of nervousness in nearly a third of garment workers. According to the Director of the Joint Board of Sanitary Control, Dr. George M. Price, the work was fatiguing and there were numerous hygienic problems. He particularly observed that workers feared for their safety from possible fires when working in tall buildings.[65] Indeed, the Triangle Shirt Waist Fire of 1911, in which 146 workers perished after being locked in to their work spaces on high levels of the building, continued to cause fears among garment workers.

Physicians also pointed to the prevalence of personality or "temperament" within ethnic groups that caused neurasthenia. Those reporting on working-class nervous exhaustion referenced its pervasiveness among Eastern European Jews. Russian Jews, according to Schwab, were, "as a type… particularly liable to affections of the nervous system of the class to which neurasthenia belong."[66] Price held that Jews, along with Italians who often worked besides them, were "excitable and more prone to nervous disorders than others."[67] Collins and Phillips observed that the nationality of their cases of neurasthenia were given as 43.5% American, 20.7% Russian, 10.2% German, 10.2% Irish, 4.5% Austrian, 2.4% English, and 2% French with

[64] Sidney I. Schwab, "Neurasthenia Among Garment Workers," *Bulletin of the American Economic Association, Fourth Series, No. 2* (April, 1911): 269.
[65] "Statement by Dr. George M. Price, Director, Joint Board of Sanitary Control, May 24, 1916," *Commission on Building Districts and Restrictions, Final Report* (City of New York, Board of Estimate and Apportionment, 1916): 162-163.
[66] Schwab, "Neurasthenia Among Garment Workers," 267.
[67] "Statement by Dr. George M. Price," 162.

25% listed as "variable."[68] Yet, they claimed that it was predominantly a Jewish illness, and that many patients that told them they were American, were truly Russian, Polish and Austrian Jews.[69] The association of Jews with neurasthenia had a complicated meaning, since neurasthenia could be interpreted as weakness as well as refinement. Dr. Charles R. Burr stated his view about Jewish people as well as neurasthenia when he cited its prevalence among Jews to be "not a question of racial inferiority, rather the reverse."[70]

The working-class neurasthenics did not have many options for individualized mental health care. Asylums were meant for severely ill people and hospitals did not have specialized long-term care for them. While the upper classes could afford private neurologists, visits to specialized sanatoria, and take breaks from work for the "rest cure," the working-class neurasthenics sought help at clinics and dispensaries. However, dispensaries and clinics were unsatisfactory providers of care for nervous workers. At dispensaries, people often had a "five minute consultation with the doctor" and left with "a bottle of medicine."[71] They were often given drugs and no further treatment. Dr. Ludwig Bremer held doctors were still affected by the belief that neurasthenia was only a disease for the rich so that, "the poor man has to be satisfied with the diagnosis of biliousness, dyspepsia, catarrh, and similar diagnostic incongruities, and is allowed to worry through his collapses as best he can, with the aid of quinine, calomel, and tonic."[72] Even if diagnosed with neurasthenia and prescribed a certain regimen, Dr. Charles Cleghorn observed that dispensary patients, "cannot, as a rule, cease their work, nor alter it; they

[68] Collins and Phillips, "The Etiology and Treatment of Neurasthenia," 413.
[69] Ibid., 413.
[70]Charles W. Burr, "Neurasthenia," in *Modern Medicine, Its Theory and Practice Volume VII,* eds., William Osler and Thomas McCrae (Philadelphia: Lea & Febiger, 1910), 725.
[71]Mary Brown Sumner, "A Hospital to Teach Straight Thinking," *The Survey* (January 1, 1910):447.
[72] Bremer, "Neurasthenia," 2.

cannot change their surroundings; they cannot regulate their hours of sleep, nor can they often take rest enough, and their diet can seldom be much improved."[73]

This lack of care led to the founding of a New York hospital expressly to serve the working class and poor who needed help for nervous diseases. Neurologists Joseph Collins, Joseph Fraenkel, and Pearce Bailey formed the New York Neurological Institute for the treatment of functional nervous diseases, opening their doors to people who could not otherwise afford neurologists. Besides clinics and general hospital wards, there was only one specialized institute dealing with the nervous poor; it was named Adam's Nervine, and was created in Boston in 1873.[74] Collins explained that until the founding of the institute "patients afflicted with nervous diseases were unwelcomely admitted to the wards of general hospitals, where they were rarely studied and never treated. The unfortunate victims of mental disease were sent to asylums for the insane after they had exhausted the resources of dispensaries in which medicines are the only measure used to combat disease."[75]

The Neurological Institute filled a distinct need. The facility opened in November of 1909 to fifty patients who saw the notice in the newspaper, and by early 1910, there was an average of eighty patients a day.[76] Records from the first month illustrate neurasthenia among workers. On November 29, 1909, a nineteen-year-old Russian tailor came in with pains in his back and chest, weakness, sweats at night, and what he described as "something like nervousness."[77] The same day a twenty-one year old Russian Jewish garment worker sought

[73]Cleghorn, "Six Thousand Cases of Neurasthenia," 681.
[74] Frank R. Hallock, "The Sanatorium Treatment of Neurasthenia and the Need of a Colony-Sanatorium For the Nervous Poor," *Yale Medical Journal* 17 (July-May 1911):146.
[75] Joseph Collins, "A Synopsis and Analysis of One Year's Experience in a Neurological Hospital," *The Medical Herald* 30 no.4 (April, 1911): 159.
[76] Sumner, "A Hospital to Teach Straight Thinking," 447.
[77] Patient Record 2, November 29, 1909, New York Neurological Institute, Patient Records, 1st Division, Nov. 1909-Dec. 1909, Folder 1, Augustus C. Long Health Science Library Archives and Special Collections, Columbia University, New York.

advice for his poor memory. He "has difficulty in remembering what he is talking about. Tends to become excited or self-conscious, and to have headache when this occurs. This memory trouble spoils his business."[78] He was diagnosed with neurasthenia. A twenty-five year old Scottish footman went to the institute for "nervousness." He explained that his "face perspires very freely – feels weak. Has headaches when he works hard. The perspiration appears mainly when he thinks of it."[79] This man was also diagnosed as neurasthenic by the examining doctor.

Thus, many health professionals came to see working-class people as subject to poor health from the division of labor and as subject to the related issue of neurasthenia due not only to the physical demands of modern work but various types of mental stress. Physicians who had an inclination towards prevention undoubtedly looked towards strengthening the nervous systems of young people in order to offset physical and nervous problems that clearly affected many adults. Moreover, in the nation's education system, observers frequently found many of the same modernizing tendencies that were taxing adults, leading to proclamations that children were often in the same lot as their nervous parents.

"School Diseases": Weakness, Nervousness and the Critique of Education

Over the course of the nineteenth century, schooling was becoming a popular, public institution in the United States. Beginning with Massachusetts in 1852, states began to pass mandatory laws for young people to attend local schools. Horace Mann and other leading education reformers of the antebellum period believed that universal public schools had the

[78] Patient Record 12, November 29, 1909, New York Neurological Institute, Patient Records, 1st Division, Nov. 1909-Dec. 1909, Folder 1, Augustus C. Long Health Science Library Archives and Special Collections, Columbia University, New York.
[79] Patient Record 8, November 25, 1909, New York Neurological Institute, Patient Records, 1st Division, Nov. 1909-Dec. 1909, Folder 1, Augustus C. Long Health Science Library Archives and Special Collections, Columbia University.

power to be "the great equalizer" in society.[80] The reformers worked to implement a graded education system based on the Prussian system. This led to much reorganization of school systems through the 1860s to the 1870s, to more standardized systems based on examinations for promotion.[81] According to historian David Tyack, the school system of the late nineteenth century educated youth for the new industrial order: "Through an elaborate system of gradation, programmed curriculum, examination, and rules of 'deportment,' then, the pupils learned the meaning of obedience, regularity, and precision."[82] Tyack's observations reflect ideas that were expressed by contemporary observers of the school system. Schools, moreover, faced continuous criticism, which often centered upon the health of the students. Many other doctors and educators joined in the discourse on schooling, and health became closely tied to schooling. Within this discourse often lies the tension between transforming the school and transforming the child.

As schools developed throughout the United States, children were often gathered in greater numbers than ever before in one location. This new visibility likely contributed to proclamations that children were not as healthy as was commonly thought. Indeed contemporaries increasingly judged schoolchildren to be weak, pale and nervous, and they blamed the chief experience of childhood—schooling. Over and over, the school system was lambasted for poor pedagogical methods, intensive curriculum and over laborious requirements. At the same time, boards of health began to investigate the school environment including ventilation, sanitation, seating capacity, desks and lighting. As knowledge of germs slowly disseminated throughout society, hygienists also focused on the prevention of the spread of

[80] Horace Mann, "Twelfth Report, for 1848," in *Life and Works of Horace Mann Vol. IV.,* (Boston: Lee and Shepard Publishers, 1891),251
[81] David Tyack, *One Best System: The History of American Urban Education* (Cambridge, Massachusetts: Harvard University Press, 1974), 44-45.
[82] Ibid., 55.

contagion in schools.[83] These early activities illustrate the strand of thought in school hygiene that concentrated upon changing the schools. Yet, in the 1890s and early 1900s, the focus shifted more clearly from the school curriculum and environment to the child. While concerns remained regarding the effect of schooling methods and the environment on the student's health, the school hygiene movement emphasized congenital ear, eye and nose problems, most clearly exemplified in poor vision and adenoid growths. This focus correlated with the rise of medical inspection of students in many cities in the first decade of the twentieth century. According to Luther Gulick, these "remediable" ailments, while not life-threatening, greatly impeded educational progress and were, therefore, to be handled by the school board rather than the board of health. These developments in school hygiene will be explored in Chapter 7. This section will illustrate the early development of criticism regarding the role of schooling for the health of young people, which corresponds with efforts to reform schools.

Prior to the Civil War, the presses in many cities publicized the deleterious effects of the school system on children.[84] Much of the early publicity was centered in Boston, where the grading system was first instituted under Superintendent John D. Philbrick in 1848.[85] As early as 1854 a writer described the tense Boston classroom where "all are required to be perfect in their answers, or else they lose their position the class and school…The imposition of such severe tasks upon young and growing children, must enfeeble their constitutions, and often incapacitates

[83] Nancy Tomes and John Harley Warner, "Introduction to the Special Issue on Rethinking the Reception of the Germ Theory of Disease: Comparative Perspectives," *Journal of the History of Medicine and Allied Sciences* 52 no.1 (1997):7-16.
[84] "The Treatment of Children in School," *Boston Herald,* 2 June 1857, pg.2; "The Education of Children," *Boston Herald,* 25 March 1857, pg.2; "Are our Public Schools Injuring the Bodies of Our Children?" *New York Daily Times,* 18 February 1856, pg.3. "Cramming in Public Schools," *Public Ledger* (Philadelphia), 16 February 1857, pg.1.
[85] Tyack, 44-45.

them, if they arrive at maturity, for enjoying life."[86] In 1857, a mother wrote a letter to the editor of the *Boston Herald* regarding her children. When her family doctor called them "puny" and advised them to get more outdoor activity, she agreed that they were indeed "pale and puny," but asked how they can play outside when they were "confined, as they are, six hours within the walls of the school house, and passing nearly as many more at their studies in the sitting room at home?" The writer recounted how her three children would not go to the store because they were too busy with their work. She continued, "[A]gain, leaving the matter of health aside, how inconvenient and troublesome it is for parents, whose circumstances forbid the employment of 'help,' and are thus compelled to do their chores, run their errands, etc."[87]

In his 1859 annual report, Superintendent Philbrick called attention to the press coverage of the school system. Children were depicted to be "over-tasked and over-stimulated." He wrote that:

> Our system is called a "high-pressure system," a "forcing system," a "cramming machine." It is said to be disastrous to the mental and bodily health of pupils. These are grave charges. It is our business to see if they are well founded.[88]

Five years later, Philbrick conceded, "I am fully convinced that, in some of these schools, the pupils are overworked, — that they are overworked to such an extent as to constitute an evil of great magnitude." The school system was not only harmful for the constitutionally weak but "destructive to the health of scores and hundreds who commence their school life with sound and vigorous bodies."[89] The same year, the School Committee of the City of Boston publicized the "palpable violations of the laws of health" present in the schools which created "rounded backs

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[86] "Excessive Study in the Public Schools," *New York Daily Times*, 29 September 1854, pg.6.
[87] A Parent, "Studying Out of School," *Boston Herald*, 28 November 1856, pg.4
[88] John D. Philbrick, "Seventh Quarterly Report," *Annual Report of the School Committee of the City of Boston* (Boston: Geo. C. Rand & Avery, City Printers, 1860), 53.
[89] John D. Philbrick, "Eight Semi-Annual Report, (March 1864),"*Annual Report of the School Committee of the City of Boston* (Boston: J.E. Farwell and Company, Printers to the City, 1864),113.

and hollow chests…sallow complexions, the lack-lustre of the eyes." Medical authorities, the School Committee held, were certain that "persistent and long-continued overworking of the brain produces deterioration of the blood and all its train of attendant physical evils."[90] Philbrick, along with many others commentators on school health, believed that the risks from over-study were more threatening for adolescent girls. Boston had passed regulations forbidding homework for girls in 1860, yet a few years later Philbrick stated that it was rarely followed.[91] Nevertheless, he hoped that the health of women would be taken into account upon their acceptance into high schools and the local normal school.[92]

From the 1860s into the 1880s, as schooling was becoming increasingly graded, newspapers nationwide featured controversial articles regarding cramming, overstudy and the terrible risks of schooling.[93] In 1860, the Chicago Board of Education report was printed in the *Chicago Press and Tribune* under the headline "Slaughter of the Innocents." Luther Haven, President of the Board, spoke of the school system:

> Our school rooms have really become forcing houses for young minds, with all the modern appliances of improved school books, pictures, slates and black-boards, with teachers fresh from our Normal Schools, ready and willing, and sure to teach these little ones in an incredibly short space of time…things too numerous to mention; all this requiring the highest exercise of memory, comparison and reflection, far too severe for minds so young to grapple. The result of such training is, too often, a prodigy in intellectual attainments, in baby-hood; one fitted for college honors or for business in early childhood, —but in early manhood, too often an enfeebled mind in a worn out or wasted body…More than half of the children born die before the age eighteen; how many of them die of education, it may be difficult accurately to determine; but that many of them are *educated out of existence,* and others suffer from this same fearful malady, none who are visitors to

[90] J. Baxter Upham, Edwin Wright, Dexter S. King, et.al, "Report of the School Committee, "*Annual Report of the School Committee of the City of Boston*(Boston: J.E. Farwell and Company, Printers to the City, 1864),47-48.
[91] Philbrick, "Eight Semi-Annual Report, (March 1864)," 117.
[92] Ibid., 115-116.
[93] For example, see "Over-Study and Under-Learning," *San Francisco Bulletin* (published as *Daily Evening* Bulletin) 25 October 1867, pg.2; "Fatal Over-Education," *Washington Post*, 19 April 1883, pg.2.

> our school room, and are observers of what they there see, will for a moment deny.[94]

Throughout the nation's newspapers, headlines attested to "Educational Excesses" and "Over-tasked Scholars."[95] Quite a few articles, particularly in the 1880s, exposed a more extreme experience of "Death from Over-Study."[96] These articles often featured girls, yet boys were also mentioned. In 1884, Grace Walton, who was fourteen and a half, died of "brain fever." Grace's mother explained that her daughter would never miss a day of school because her class would not receive a perfect attendance medal. Her mother told a reporter: "I do not blame the teachers for what they did, the fault is rather in the system than with them; but they persuaded her never to lose a day if she could possibly help it. 'Come to school,' the master would say 'even if you don't do anything after you get here.'"[97] Along with this pressure to attend school despite illness, Grace studied many subjects nightly. A few weeks before her death, Grace was "delirious," reciting "page after page of history" and crying about her music class: "O, mother…if I could only get these notes out of my head! There is no end to them." Two doctors saw Grace when she became ill, and one claimed "I have seen so many of those cases among children and young teachers. They do not always die, but a broken constitution often follows the first symptoms of the attack."[98] On January 21, the superintendent of Boston Schools, Dr. Edwin P. Seaver, wrote to the *Boston Globe* that the school could not possibly be proven to be the cause of Walton's death. This elicited a strong response from one of her doctors, Marshall Brown who affirmed the school's culpability.[99] A school principal from Long Island also wrote to the newspaper about three young people he knew who had become ill or

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[94] "Slaughter of the Innocents." *Chicago Press and Tribune,* 21 March 1860, pg.1.
[95] "Educational Excesses," *Cincinnati Daily Gazette,* 30 May 1874, pg.4; "Over-Tasked Scholars," *New York Herald,* 19 October 1882, pg. 10.
[96] "Death from Overstudy," *New York Tribune,* 15 June 1878, pg.3.
[97] "Death from Over-Study," *Boston Daily Globe,* 16 January 1884, pg.1.
[98] Ibid., 1.
[99] Marshall L. Brown, "The Average Attendance Evil," *Boston Globe,* 25 January 1884, pg.6.

died due to school pressure: "'Died of the ranking system,' could be truthfully written on many a tombstone."[100]

Although the Long Island principal mentioned two young men who died due to over-study, young women were mostly featured in such articles. In 1883, the *Los Angeles Times* reported on an eight-year female student from Baltimore who was thought to have died from "congestion of the brain." The reporter wrote "[T]his poor little victim of the vicious cramming process in education raved in her delirium about problems in long division which she tried to solve."[101] "Brain fever" was also the cause of death for fifteen year old Washington D.C. native Theresa Moore. Her aunt stated that she had always been very ambitious, and that during her illness "she used to imagine she was studying her lessons and was worried for fear she would fail."[102]

These articles attest to cultural questions regarding what was an appropriate level of stress and mental labor for young people. As the system of graded education spread throughout the large school districts in the nation, children were faced with examinations for promotion, and some likely experienced great stress. Gender clearly played a role in this anxiety, as physicians and educators debated whether female children and adolescents should participate in competitive, demanding education.

Death from over-study, however, remained a rare, extreme phenomenon which provided sensational newspaper headlines. The more common complaints aimed at the school system was that it was making children weak and nervous, but not deathly ill. Students were overly worried about their class rank, public competitions, and school prizes, including those for perfect class

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[100] Principal of Public Schools, Oyster Bay, L.I., "The Globe None Too Soon in the Field," *Boston Globe*, 25 January 1884, pg.6.
[101] "Mathematics and Youthful Delirium," *Los Angeles Times*, 27 March, 1883, pg.2.
[102] "Died of Over-Study," *Washington Post*, 24 April 1887, pg.2.

attendance. These conditions often taxed students' nervous systems, and could possibly lead to a bout of neurasthenia. While some medical specialists believed youth could not develop full-blown neurasthenia, many maintained that it was possible, especially under modern conditions. Even if children were not subject to neurasthenia, they were known to have other manifestations labeled simply nervous disease, prostration, or nervousness, which many considered to be generally synonymous with the American Disease.

Significantly, Van Deusen and Beard considered education in their works on neurasthenia, although the topic was not central to their thoughts on the illness. Van Deusen cited the "hot-house educational system of the present day" as one of the causes of "debilitating forms of nervous disorder."[103] Beard observed late nineteenth century education to be growing more and more demanding for American student life, marked by "many and tiresome hours of study, the endless committing and repeating and reciting, the confinement in constrained positions."[104]

From the 1880s, when Beard's neurasthenia diagnosis became popular, through the early twentieth century, a variety of observers in education and medicine emphasized the nervousness of America's students. President of Olivet College, M. W. Fairfield, along with Cleveland physician L. B. Tuckerman likened the schools to a "high-pressure system."[105] Fairfield elaborated, "[N]ot only is the nervous system over-taxed and over-strained by this exacting, exhaustive and high–pressure system; but the mental forces are weakened instead of strengthened, contrary to the aim and results of all wisely ordered courses of study."[106] The President of the Connecticut State Medical Society declared in 1885: "[F]ully one third of the

[103] Van Deusen, "Observations on a Form of Nervous Prostration, (Neurasthenia,) Culminating in Insanity," 447.
[104] Beard, *American Nervousness,* 135.
[105] "School Hygiene: Health of the Graduates of the Cleveland Schools," *Boston Medical and Surgical Journal* 105 no. 20 (November 24, 1881): 486; M.W. Fairfield, "High Pressure Vs. Hygiene in Our Public Schools," *Tenth Annual Report of the State Board of Health of Michigan* (Lansing, 1883): 201.
[106] Ibid., 201.

children in our graded schools suffer seriously from over-work in their studies; they become nervous and irritable at home, lose their appetites, and run down generally during term time. Nervousness is becoming a prominent characteristic."[107] These ideas persisted in the early twentieth century, when Dr. James W. Ward, President of the San Francisco Board of Health, maintained that "[N]eurasthenia or various nervous disorders are especially common among school children, and near the close of each term of school. It is the experience of almost every practitioner to see a number of cases, especially in girls of the higher grades, where physical breakdown is the result of close mental application during the school term."[108]

According to physicians, neurasthenia was related to assorted physical problems that affected youth. Myles Standish, prominent Harvard Medical School doctor, found that in children "nervous exhaustion generally expresses itself" in headaches, lack of muscular control, twitching, lack of attention and mental fatigue.[109] Edward Hartwell believed "myriad forms of nervous disease… find expression in St. Vitus' dance, grimaces, spasms, convulsions, and other forms of disordered muscular action, as well as the protean forms of headache, nervous exhaustion, and mental derangement, so common nowadays amongst sedentary people and brain- workers."[110]

The portraits of America's youth appeared grim. In 1886, Doctor F.C. Folsom observed that "[P]ale faces, languid work, poor appetite, disturbed sleep, headache, and what is vaguely called nervousness, are more common among them than they should be among children of their

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[107] B.N. Comings, "President's Address," *Proceedings of the Connecticut Medical Society, 1884* (Hartford: 1884): 35.
[108] James W. Ward, "Address Before the Volunteer Board of School Inspectors of the City and County of San Francisco," *Medical Century* 12 no.10(October, 1904):298.
[109] Myles Standish, "Facts and Fallacies in the Examination of School Children's Eyes," *National Education Association Journal of Addresses and Proceedings* 42 (Printed by the University of Chicago Press, 1903): 1021.
[110] Edward M. Hartwell, "The Nature of Physical Training, And the Best Means of Securing Its Ends," in *Physical Training. A Full Report of the Papers and Discussion of the Conference Held in Boston in November, 1889,* ed. Isabel C. Barrows (Boston: Press of George H. Ellis, 1890):21.

ages."[111] Folsom pointed to poor ventilation, "over-pressure," and lack of exercise as contributing factors to low health.[112] The following year, rising physical educator Edward Hartwell created the term *cachexia scholastica* to characterize students with "an irritable, easily overwrought, and unsteady nervous system, arrested muscular development, disordered digestion, and enfeebled powers of assimilation."[113] In 1900, Colorado physician E. Stuver found schoolchildren to be "in a constant state of worry, anxiety and excitement; the brain is irritated, the vitality, lowered."[114] Texas physician J.S. Lankford described schoolchildren to be "excitable, emotional, wakeful, discontented and suffering often with headaches or nervous dyspepsia, the girls showing a decided tendency to hysteria."[115]

Schools were competitive, with students often battling for top ranking through exhibitions and examinations. Like the competitive business culture, this contributed to the stress of modern life. Sargent likened academic competition to intercollegiate college sports, which he found to often be harmful. In 1884, he wrote that teachers "care nothing about the condition of the individual. The individual must be sacrificed to the reputation of the school, or of the master; the standard must be kept up."[116] Moreover, critics held that competition both degraded education and harmed children. School hygiene expert D.F. Lincoln criticized educators for turning the "stimulus of mental energizing" into a "system of prizes—of grinding,

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[111] C.F. Folsom, *Relation of Our Public Schools to the Disorders of the Nervous System* (Boston: Ginn & Company, 1886), 177.
[112]Ibid., 189. Also see D.F. Lincoln, "School Hygiene," in *Cyclopedia of the Diseases of Children,* ed. John M. Keating (Philadelphia: J.B. Lippincott Company, 1890):348-349; Henry Ling Taylor, "American Childhood from a Medical Standpoint, *Popular Science Monthly* 41 (October, 1892):725; G.H. Stokes, "Are Our Schoolchildren Overworked?" *Proceedings of the Teachers' Association of Northern California, December1,2,3,1898* (Press of H.S. Crocker Co., San Francisco, Cal.):70.
[113] Edward Mussey Hartwell, "On the Physiology of Exercise," *Boston Medical and Surgical Journal* 116 no.13 (March 24, 1887):302; "Physical Training vs. Athleticism," *Medical News* 63 no.25 (December 16, 1893): 693.
[114] E. Stuver "Symmetrical Development, or Does Our Present School System Develop the Highest Powers of the Pupil?" *Journal of the American Medical Association* 35 no. 25 (December 22, 1900): 1610.
[115]J. S. Lankford, "School Life and Insanity," *Papers Read Before the Thirty-Fourth Annual Meeting of the State Medical Association of Texas* (May, 1902):348.
[116] Dudley A. Sargent, "Care of the Body," *The Christian Union* (February 7, 1884): 125.

useless drill for examinations, of rank lists."[117] Stuver emphasized that "under our cramming, high-pressure method of education, with its frequent examinations and grand-stand plays for public show and approval" children are led to unhealthy studying practices.[118] Examinations were weighed too heavily, according to DeWitt G. Wilcox, President of the New York Homeopathic Society and an early critic of the New York State Regents tests. He held that they truly ruin "the natural delight" of both students and teachers "in going over an interesting subject."[119] He asked his organization: "What better method can possibly be devised for killing out all possible initiative and natural pleasure in a study on the part of both pupil and teacher than this uniform pressure system?"[120]

The extensive number of subjects was also a problem for many observers. While serving as Principal of the Pratt Institute, Gulick called for a decrease in the number of courses, reflecting that "we normal human beings cannot live and grow in the atmosphere of thirteen different topics per week."[121] Dr. Lankford suggested reducing the amount of subjects, condensing the textbooks, and the use of object lessons instead of books.[122] Similarly, playground advocate Henry Curtis believed that a young child merely needed to be literate and to learn "the first principles of many other things, but he does not need great heaps of information to mildew and decay in his mind."[123]

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[117] D.F. Lincoln, "A Report on School Hygiene" *Journal of Social Science Containing the Transactions of the American Association* 7 (New York: American Social Science Association, 1874): 264. Also see Hyman Cohen, "How Far Are Teachers Responsible for the Morbidity and Mortality of School Children?" *National Education Association Journal of Proceedings and Addresses* 50 (Printed by the University of Chicago Press, 1912):1137.
[118] Stuver, "Symmetrical Development," 1610.
[119] De Witt G. Wilcox, "Presidential Address," *North American Journal of Homeopathy* 54 no. 5 (May, 1906): 282.
[120] Ibid., 282.
[121] Luther H. Gulick, "School; Leisure," *Pratt Institute Monthly* 9 no.6 (April, 1901):139.
[122]Lankford, "School Life and Insanity," 350.
[123]Henry S. Curtis, "The Duty of the Community to Children," *Proceedings of the Child Conference for Research and Welfare* 2 (July, 1910):179.

Classroom recitations also evoked gall among various critics. According to Stuver, recitations were too long and that "if the attempt is made to compel him to continue the work after the point is reached he becomes fatigued, nervous, and restless…impressions made on a tired brain do not last."[124] Mathematics was perhaps the worst subject, described as a "brain-irritating and mind-paralyzing exercise."[125] Another critic held that teachers spent too much time on "parrot-fashion" recitations leading to, "overwork, worry, disgust, irritation" among the students.[126]

While many of the articles on the poor health of children were written in medical and educational journals, they were not limited to specialist publications. Two influential pieces relaying several of these themes appeared in national magazines that received wider attention. The first was Dr. Joseph Mayer Rice's exposé of schooling methods, published in several articles for *The Forum* from October 1892 to June 1893.[127] Rice visited thirty-six cities, spoke to 1200 teachers, and observed many classrooms. Among other things, he criticized rote "sing-song" memorization, over-study and discipline methods.[128] The second article, "A National Crime at the Feet of American Parents," was written by *Ladies' Home Journal* editor Edward Bok in 1900.[129] Like many critics of the school system, Bok sought to increase the age at which children were able to enter school to five years old, and to abolish home study for the bulk of the child's schooling.[130]

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[124] Stuver, "Symmetrical Development," 1609.
[125] Ibid., 1608.
[126]Thomas Hunter, "Educational Needs," *North American Review* 316 (March, 1883): 299.
[127] These articles were compiled together as *The Public-School System of the United States* (New York: The Century Co., 1893).
[128] Lawrence A. Cremin, *The Transformation of the School: Progressivism in American Education, 1876-1957* (New York: Albert A. Knopf, 1968), 2-7.
[129]Edward Bok "A National Crime at the Feet of American Parents," *Ladies' Home Journal* 17(January, 1900): 16-22.
[130] Brian Gill and Steven Schlossman, "'A Sin Against Childhood": Progressive Education and the Crusade to Abolish Homework, 1897-1941," *American Journal of Education* 105 no.1 (November, 1996):34-35.

Amidst these censures, numerous commentators came to envision modern schooling as not only unhealthy but unnatural. As Steven Mintz has observed, in the nineteenth century, people increasingly viewed children as special, innocent and malleable.[131] Ironically, during this romanticization of natural childhood, routines for child-rearing became more standardized and schooling more regulated.[132] This paradox between childhood's natural spontaneity and the increased regulation of childhood socialization was noted by various observers in the nineteenth century, including the influential G. Stanley Hall. In an 1892 editorial he lamented how education was sapping the vitality from children. The institution went against human instincts: "[N]ature inclines the normal child to free and almost incessant activity; the modern school requires him to sit still."[133] Education methods focused "an enormous strain" on the "few tiny tongue- and pen-wagging muscles" and resulted in loss of weight, diseases of the eye, spine, stomach, throat, headaches and "far more subtle nervous disorders."[134] Moreover, "the muscular system, which is the organ of the will, and has done all man's work in the world… is allowed to grow flabby and thus the chasm between known and doing is widened, the will is weakened, and it is forgotten how akin weakness is to wickedness."[135] This idea was influential in physical education, as physical educators sought to promote exercise on the basis that it trained the mind and will.

Like Hall, Hartwell maintained that the school system did not take into account the child's development. The school system produced nervous disease among children because pedagogical methods did not correlate with the natural physiological development of youth. Drawing from contemporary physiology, Hartwell wrote that education focused too much on the

[131] Steven Mintz, *Huck's Raft: A History of American Childhood* (Cambridge, Mass: Belknap Press of Harvard University Press, 2004), 3.
[132] Ibid., 92.
[133] "Editorial," *Pedagogical Seminary* 2 (1892):3.
[134] Ibid., 5.
[135] Ibid., 5.

"accessory parts of the nervous system" before the development of the "fundamental" parts, which was "inverted and unnatural." Accessory parts, such as fingers, were the latest to be evolved and the most intricate, while the fundamental involved the large muscular groups.[136] Analogous ideas were found in educational literature of the 1890s. Professor G.T.W. Patrick held that the practice of movements of fine coordination including the fingers and the eyes were to be practiced in maturity rather than childhood, and that if teachers "compel the child to hold his body, legs, and arms still while he engages the muscles of the eyes and fingers with minute written or printed symbols, [they] induce a nervous overtension."[137] In a similar vein, college professor William L. Bryan, of the University of Indiana, found that "there is special danger of inducing wasteful nervous habits in school by requiring voluntary muscle control, for too long periods at a time."[138] Keeping still, writing, holding a slate properly, drawing, and keeping eyes focused required such muscle control and were "liable to induce overstrain, overflow, and, if persisted in, habits which lead to some form of neurasthenia."[139]

Remaining sedentary for hours at a time was also thought to be an unnatural and harmful part of modern schooling, often worsened by a heightened sense of discipline among certain teachers. Sitting in poor postures led to apprehension over scoliosis in schoolchildren, which was labeled as a "school deformity" in 1891.[140] Dr. E.H. Bradford found it was common among growing children who had to sit still for lengthy periods. Moreover, "[I]ts frequency in a

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[136] Hartwell, "The Nature of Physical Training," 21. James Ross, *A Treatise on the Diseases of the Nervous System* 1 (New York: William Wood and Co, 1881); Frederick Buck, *From Fundamental to Accessory in the Development of the Nervous System and of Movements, A Dissertation Submitted to the Faculty of Clark University* (1898).
[137] G.T.W. Patrick, "Learning to Read and Write," *The School Journal* 58 no. 3 (January 21, 1899): 69.
[138] William L. Bryan, "Hygiene of Motor Development," *National Education Association Journal of Proceedings and Addresses* 36(Printed by the University of Chicago Press, 1897):279.
[139] Ibid., 279.
[140] Charles L. Scudder, "The Muscular Element in the Etiology of Lateral Curvature of the Spine," *Proceedings of the AAAPE at Its Sixth Annual Meeting*, 1891 (Ithaca, N.Y.: Andrus & Church, 1891):105, 113.

community, in a measure, corresponds to the stringency of school life."[141] Students acquired scoliosis by sitting improperly, bending and straining, remaining still for long intervals in poorly suited desks, and "plodding along…with a miniature library of books suspended from one shoulder."[142] Systems of penmanship exacerbated the issue, "tend[ing] to twist the spine."[143] Hygienists and educators, therefore, tried to create better furniture, which in Boston led to the purchase of chairs specially devised furniture.[144] D.F. Lincoln also suggested that students be taught the difficult skill of proper posture: "The pupil faces the desk squarely; the shoulders are equally distant from the lid of the desk; the trunk is erect and nearly touches the desk. The lid must be high enough just to support the forearms, but not so high as to raise them; they rest lightly on the lid, but do not sustain the weight of the body."[145]

Other chronic ailments related to the incidence of curvature of the spine. Doctors believed that sitting all the day through in a poor posture was also connected with poor breathing, weak abdominal muscles and general lack of muscular development.[146] In 1884, Dudley Sargent maintained that half of all students sat in cramped positions throughout the day, which contributed to poor circulation, digestion problems and headaches.[147] Students with poor vision or hearing were likely to sit awkwardly, straining to hear the teacher and see the blackboard.[148] Those concerned with scoliosis suggested incorporating physical education into

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[141] E.H. Bradford, "Lateral Curvature of the Spine," *International Clinics: A Quarterly Volume IV* (Philadelphia and London: Lippincott Company, 1905):124.
[142] D. Hayes Agnew, "The Relation of Social Life to Surgical Disease," *Boston Medical and Surgical Journal* 119 no. 12 (Sept. 20, 1888): 275.
[143] D.F. Lincoln, "School Hygiene," in *Cyclopedia of the Diseases of Children,* ed. John M. Keating (Philadelphia: J.B. Lippincott Company, 1890):364.
[144]Robert W. Lovett, *Lateral Curvature of the Spine and Round Shoulders* (Philadelphia: P. Blakiston's Son and Co., 1907), 103-104.
[145] D.F. Lincoln, "School Hygiene," 364.
[146] A.G. Young, "School Hygiene and School-Houses," *Seventh Annual Report of the State Board of Health of the State of Maine* (Augusta: Burleigh & Flynt, 1892):120-121.
[147] Sargent, "Care of the Body," 125.
[148] Lovett, *Lateral Curvature*, 97, 102-103.

the curriculum and taking care to place students in desks according to their size, vision and hearing rather than using the tradition of seating by class rank. [149]

In discussions of nervousness and curvature of the spine, school hygienists compared the school life of young children to both brain-work of middle and upper-class people, and physical labor of the working-classes. The stress and "brain-work" of education clearly was linked to " protean forms of headache, nervous exhaustion, and mental derangement, so common nowadays amongst sedentary people and brain-workers."[150] On the other hand, curvature of the spine came to be likened to occupational diseases. Doctors noted that curvature of the spine occurred in workers who maintained poor sitting positions, just as it did in schoolchildren. Doctor Eliza M. Mosher, who worked in private practice and education, found that it was acquired through "*enforced* attitudes, as those of the schoolroom and the workshop."[151] She also cited it among businessmen who stood at desks with their hands supported or sitting with their head bent, women at sewing machines, clerks who stood with their weight to one side, and among sailors, horse cab drivers and brick-layers who were often bent over.[152] J.H. Kellogg also wrote how postures figured into scoliosis of working-class women as well as children. By bending forward, they both developed curvature of the spine which gave a "correspondingly ugly shape" and resulted in "actual compression and displacement of internal organs."[153] By 1911,

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[149] Walter Stern, "Closing Discussion," *The Ohio State Medical Journal* 4 no. 5(May 15, 1908):268; D.F. Lincoln, "School Hygiene,"357.

[150] Edward M. Hartwell, "The Nature of Physical Training, And the Best Means of Securing Its Ends," in *Physical Training. A Full Report of the Papers and Discussion of the Conference Held in Boston in November, 1889,* ed. Isabel C. Barrows (Boston: Press of George H. Ellis, 1890):21.

[151]Eliza M. Mosher, "The Influence of Habitual Posture on the Symmetry and Health of the Body," *Proceedings of the AAAPE at Its Seventh Annual Meeting,* 1892 (Springfield, Mass.: Press of Springfield Printing and Binding Co., 1893):120.

[152] Ibid., 128-129.

[153]J. H. Kellogg, "Physical Deterioration Resulting from School Life; Cause; Remedy," *National Education Association Journal of Proceedings and Addresses* 35 (Printed by the University of Chicago Press, 1896): 908.

Doctors Robert W. Lovett and E.H. Bradford wrote "[S]coliosis seen in school children is in reality generally an occupation deformity."[154]

Additionally, one Baltimore physician likened the stress of schooling to the stress of making a living. At the Dispensary for Nervous Diseases in the 1880s, John Van Bibber found nervousness in children to be quite common, observing that a child "is made to feel that its education may be the mainstay of the family of the means of personal support." They were likely to feel great pressure and succumb to "anxiety about examination" and "dread of failure," leading to health problems.[155]

The prevalence of nervous diseases and the unnatural experience of schooling combined in depictions that likened schools to factories and machines. Similar to the observations of David Tyack and other revisionist historians, many contemporaries placed schools within the context of modern industrialization and highlighted mechanical drills and uniform instruction that did not account for diverse student desires and capacities. Schools were creating average "mill product," according to John Punton, a Kansas City physician. A strong critic of the school system, Punton suggested that one of its greatest tribulations was that administrators paid "little attention to the constitutional differences and defects of its pupils."[156] Wilcox thought teachers increasingly had little choice in how they spent the school day. The focus on testing and increased standardization made schools more systematic and made it impossible for teachers to account for students' individuality. The teacher was "part of a machine which must turn out just so many pupils to the teacher in the next higher grade at just such a time. The fact that she may have sensitive, nervous children, who wilt under the machine regime, is of no consequence; her

[154] Edward H. Bradford and Robert W. Lovett, *Orthopedic Surgery* (New York: William Wood and Company, 1911),223.
[155] John Van Bibber, "On the Increase of Nervous Diseases Among School Children," *The Archives of Pediatrics* 2 no.2 (February, 1885): 98.
[156] John Punton, "Nervous Disorders of Children: Their Relation to School Life and Work," *American Medicine* 13 no. 2 (February, 1907):83.

predecessor did it, and she must do it."[157] He concluded his critique with the searching question, "who can deny that the so-called American disease of nervous prostration has not its foundation in this primary grade push?"[158]

At the 1913 International School Hygiene Conference in Buffalo, many of these themes resonated. Wilcox spoke once again about the detrimental effects of the Regents exam and the entire school system. B. Liber, a doctor among the working classes of New York, condemned the school as reactionary and opined that "it does not respect the individuality of the child, it adapts the child to a prearranged program…it wipes out the intellectual and characteristic differences between the children."[159] Similarly, Harvard President Charles Eliot commented that nervousness was often produced by "uninteresting and worrisome work done without cheerful motives and thereby without enjoyment."[160] Both in factories and in schools, people would be more invested in their work if they had a "personal interest" in the activity, whether it was working on an assembly line or learning multiplication. He believed, "any school work which at all resembles factory work may safely be condemned on that ground alone."[161]

Many educators, schoolmen, and general supporters of education combated this barrage of criticism by pointing to other causes of childhood disease or poor health. Defenders of the school system sought to shift the conversation to many other culprits: poor nutrition and rest; heredity; use of stimulants, patent medicines, and cigarettes; time spent in social life and music lessons; parental discipline and pressure; urban life and masturbation.[162] Among these defenders

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[157] Wilcox, "Presidential Address,"281.
[158]Ibid., 281.
[159] B. Liber, "School Hygiene and the Home," *Fourth International Congress on School Hygiene* IV (Buffalo, 1913): 21. Liber published a German-language periodical "Unser Gesund" (Our Health).
[160] Charles W. Eliot, "Address of President Eliot," *Fourth International Congress on School Hygiene* I(Buffalo, 1913):320.
[161]Ibid., 321.
[162] W.S. Perry, "The Hygiene of Study," *Tenth Annual Report of the State Board of Health of Michigan* (Lansing, 1883): 100-103; "Comment, "Dr. Oldbright" *Tenth Annual Report of the State Board of Health of Michigan*

was W.S. Perry, Superintendent of the Ann Arbor school district. Speaking in 1883, he noted how editorials against the schools had become common in the daily press. Referring to Gilded Age scandals, he stated: "The public school is the scapegoat of modern society …. [critics] have found that not only the Tweeds, the Guiteaus, the rascalities of society and the corruptions of the civil service, but also the hunchbacks, the insane, the blind, the flat-breasted, the short graves in the cemetery, are in large numbers, nearly or remotely, the outcomes of the methods of instruction in the public schools."[163] Perry pointed to heredity, rest, diet, clothing, and social life as causing harm, and affirmed that intellectual work was not detrimental to health but was in fact "one of the best tonics."[164] Editors of an Iowa educational periodical shifted the blame away from the school to home life. Parents allowed children to study too much at home, focus too much on music lessons, drink coffee and tea, keep late hours, attend parties and other social events.[165] They held that, "[S]chool boards, superintendents and teachers are not wholly idiotic; they usually arrange the work upon a sensible plan, and there is usually no excuse for the stereotyped cry 'Too many studies.'"[166]

By the 1890s, the various ailments of youth had been categorized as "school diseases" among educators and physicians. The German physician Rudolf Virchow first coined the term

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(Lansing, 1883): 203; "Defending Schools," *Central School Journal* 10 no. 112 (April, 1887):10; See also W.A. Bell, "Recent Criticisms of the Public Schools," *Indiana School Journal* 28 no. 8 (August, 1883): 403-405; Charles L. Dana, "Chorea and Chroreiform Affections," in *A System of Practical Medicine* ed. Alfred Lee Loomis (Lea Brothers & Co, 1898):506; Thomas Moore Madden, "Puberty: Its Pathology and Hygiene," in *Cyclopedia of Children's Diseases,* ed. John M. Keating(Philadelphia: J.B. Lippincott, 1890): 413; R.H. Rush, "Comment," *Papers Read Before the Thirty-Fourth Annual Meeting of the State Medical Association of Texas* (May, 1902):353; Lankford, 348-349.B. Sachs, "The Relation of School Work to the Mental Fatigue of Children, *"Journal of Nervous and Mental Disease* 33 no. 11 (December, 1906):745-749; Walter S. Cornell, "Comment," *The Pennsylvania Medical Journal,* 13 no. 8 (May, 1910): 608.

[163] W.S. Perry, "The Hygiene of Study," *Tenth Annual Report of the State Board of Health of Michigan* (Lansing, 1883): 100.

[164]Ibid., 103.

[165] "Defending Schools" *Central School Journal* 10 no. 112 (April, 1887): 10.

[166]Ibid., 9. See also W.A. Bell, "Recent Criticisms of the Public Schools," *Indiana School Journal* 28 no. 8 (August, 1883):403-405.

school diseases, and his work was translated in English in 1870.[167] Early investigators in the field drew upon Virchow and the great quantity of European studies on the health of schoolchildren.[168] In 1900, William Burnham noted that school disease was: "a term used rather loosely to indicate diseases prevalent among school-children; more accurately used to denote diseases caused or specially aggravated by the conditions of school life. As it is impossible to determine how many of the former are included in the latter, and as disease among school-children, whatever the cause, affects the welfare of the school, the investigations thus far made have generally had regard to school diseases in the broader sense."[169] Burnham categorized school disease into three categories: contagious, chronic and nervous disease.[170] Among the contagious diseases were diphtheria, scarlet fever, small pox, measles, whooping cough, chicken-pox, mumps, tuberculosis, and conjunctivitis.[171] Under nervous diseases were found headache, chorea, hysteria, epilepsy, neurasthenia.[172] Under chronic diseases were those defined by Copenhagen physician Alex Hertel to be persistent and nonlife-threatening. In the early 1880s, Hertel described "sickly children" to be "*unsound children, who suffer from chronic complaints, but who are, nevertheless, able to attend school regularly; in short children whose state of health is abnormal, and who require special care, both at home and school, during their growth and development.*"[173] Under chronic illness hygienists often listed vision, hearing, digestion, general weakness, curvature of the spine, throat and nose defect, and nervous diseases also overlapped

[167] Richard A. Meckel, "Going to School, Getting Sick: The Social and Medical Construction of School Diseases in the Late Nineteenth Century," in *Formative Years: Children's Health in the United States, 1880-2000*, eds. Alexandra Minna Stern and Howard Markel (Ann Arbor: University of Michigan Press, 2002),191.
[168] Edward R. Shaw, "Fatigue," *National Education Association Journal of Proceedings and Addresses 37* (Printed by the University of Chicago Press, 1898): 550-554. Shaw drew upon the work of Leo Burgerstein(Vienna), Ludwig Hopnfer(Germany),J. Friedrich (Germany) H. Ebbinghaus (Germany,)H. Griessbach, Theodore Vannod (Bern), Alfred Binet (France) Victor Henri (France).
[169] William Burnham, "School Diseases," in *The Universal Cyclopedia Volume X,* ed. Charles Kendall Adams(New York: D. Appleton and Company, 1900),631.
[170] Ibid,. 631-633.
[171] A.G. Young "School Hygiene and School-Houses,"133-140.
[172]Ibid., 125-128; Burnham, "School Diseases," 633.
[173] H. Hertel, quoted in Young, "School Hygiene and School Houses," 99.

into this category. The care and worry about these diseases became a central focus of school hygiene, as medical inspections of students flourished in the early twentieth century.[174] These were the non-life threatening ailments that biological engineers sought to alleviate, raising people to "higher plane of living."[175]

The notion that intensive intellectualism and sedentariness made young people ill was something which physical educators and hygienists tried to establish in the late nineteenth century. Furthermore, modern technology, quickened everyday life and urban conditions kept children from active, natural leisure. Along with adults, children were in need of regulated physical training. William T. Harris, the United States Commissioner of Education, was certain that physical education could help restore children's nervous energy. In 1898, he asserted that American "civilization is so bent on the conquest of nature and the production of wealth that it perpetually strains its supply of nervous energy and produces disaster along this line. Here is the special problem of our time for hygiene to meet: how to restore and conserve nervous energy."[176] Thus, the chief responsibility of physical directors was "along the line of enlightening the student who is on the verge or beyond the verge of nervous prostration how to build anew his nerves."[177] Gulick expressed similar sentiments when he called for a "reformation" of the school system along the lines of modern physiology. He hoped to "build our children nervous systems which can stand and profit by the stress of these times."[178] These ideas regarding the physical importance of modern education applied not only to primary and secondary schools, but to

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[174] Luther H. Gulick and Leonard P. Ayres, *Medical Inspection of Schools* (New York: Russell Sage Foundation, 1908), 14-15. School hygiene is the topic of Chapter Seven.
[175] Dudley A. Sargent, "Should the Teacher of Physical Education in Public Schools Have the Training of a Physical Director and Instructor in Hygiene or that of a Physician?" *National Education Association Journal of Proceedings and Addresses* 46 (Printed by the University of Chicago Press, 1908):1011.
[176] William T. Harris, "The Effects of Exercise on the Vital Organs," *National Education Association Journal of Proceedings and Addresses* 37(Printed by the University of Chicago Press, 1898):931.
[177] Ibid., 932.
[178] Gulick, "Vitality and Modern Life (Continued)," *Physical Education* 5 no. 4 (June 1896):35.

colleges where similar, related apprehensions over student health developed as college attendance rates rose in the nineteenth century. Like workers and children, college students' bodies were affected by the labor that they did or did not do, and they had to be advised how to attain health.

Men, Women and Illness in Higher Education

In 1873 Dr. Edward Clarke published a book which would provoke great controversy for decades. As women were seeking more rights and attending newly-founded women's colleges, Clarke's work sounded an alarm that was heard throughout American society, for he claimed that higher education would render women feeble, unhealthy and likely infertile. In such a declaration there are clear continuities with the over-study concerns in girls and young adults. Additionally, notions that the female sex was inherently weak and ill were also a part of American culture of the nineteenth century. Nonetheless, fears over the health of college women also relate to similar concerns regarding the health of male collegians which date back to the 1830s. A main factor in poor health seemed to be the scholarly life and lack of physical activity.

At Amherst College, President Edward Hitchcock expressed his distress about the health of the male student body in an 1830 treatise titled *Dyspepsy Forestalled and Resisted.* He claimed that American students and professionals faced "premature prostration and early decay…Too many budding hopes have been blasted; too many wrecks are strewed around us, to suffer the reality to be hid any longer."[179] He offered chapters on the prevention of dyspepsia, dealing chiefly with diet, rest, and occupation. Further, Hitchcock admitted to having suffered

[179] Edward Hitchcock, *Dyspepsy Forestalled & Resisted or, Lecture on Diet, Regimen, & Employment Delivered to the Students of Amherst College* (Amherst: J.S. & C. Adams and Co., 1830), 9.

for two decades with "the debility and prostration" of "what is generally called dyspepsy, or bilious, or nervous disorders."[180]

Others agreed that dyspepsia was "the bane of student life."[181] According to historian Harvey Green, antebellum dyspepsia "included mental disturbances from severe depression to indecisiveness as well as heartburn and other forms of indigestion."[182] In 1846 Doctor Charles A. Lee described dyspepsia as a "very modern disease" which was not common in the previous generation when people "were accustomed to much bodily exertion" and "professional men almost universally had farms, on which they laboured more or less."[183] The similarities to George M. Beard's "modern" disease of neurasthenia, brought on by a lack of physical labor in a modernizing society, are indeed striking. In the period following the Civil War, dyspepsia remained a health issue but was generally eclipsed by nervous exhaustion.

The disease of dyspepsia reflects the religious origin of many early American colleges. Speaking near the end of the nineteenth century, Massachusetts Institute of Technology President Francis Amasa Walker observed that the most popular students on campus in the years before the Civil War were talented orators and writers rather than athletes. The "college hero" had a "towering forehead," pallor, poor digestion and "and not infrequently mistook physical lassitude for intellectuality, and gnawings of dyspepsia for spiritual cravings."[184] In this connection between illness and spirituality, Walker expressed a key idea of muscular Christianity, whose advocates eschewed forms of religious asceticism which discouraged physical labor, and hoped to increase the influence of men within a church that they deemed had become overly feminized.

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[180] Ibid., 10.
[181] Harvey Green, *Fit for American Health, Fitness, Sport and American Society* (New York: Pantheon Books, 1996), 104.
[182] Charles F. Thwing, "Elements in the Choice of a College," *The Review of Reviews* 15 no.1 (April, 1897):453.
[183] Charles A. Lee, "Dyspepsia, [editorial note]," in James Copland, *Dictionary of Practical Medicine* 4(New York: Harper Brothers, Publishers, 1845), 385.
[184] Francis Amasa Walker, "College Athletics," *The Harvard Graduates' Magazine* 2 no. 5(September, 1893):2.

Connections between religion and antebellum college life were very strong since most American colleges had been founded to educate ministers, and most antebellum faculty members were clergymen.[185] Indeed, between the mid1810s to the 1840s, 40% of students in New England colleges, not including Yale and Harvard, became ministers.[186] The belief that male college students were weak thus implied the connection between religious and theological study and male weakness that muscular Christians hoped to dismantle. Moreover, the idea that forms of religious experience were now considered to be the medical problem of dyspepsia also illustrates the medicalization of certain types of religious practice which had formerly been accepted as normative.[187]

The physical suffering of male college students prompted the first ever college exercise requirements to be instated in 1860 at Amherst College. Hitchcock's successor, William Augustus Stearns, began to advocate for such requirements in 1854 during his first year as president. He found the "waning of the physical energies" to be very common and "cases of complete breaking down" to be "painfully numerous."[188] Five years later, Stearns commented that while many Amherst students had labored physically in farming or mechanics prior to college, upon beginning their coursework they "neglected" exercise and became accustomed to "hard study and sedentary habits of college."[189] Soon, the student was "physically indolent, his mental powers become dulled, his movements and appearance indicate physical deterioration."[190] Stearns claimed this breakdown was most common during the Junior year, and that such a

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[185] Nicholas L. Syrett, *The Company He Keeps: A History of White Male College Fraternities* (Chapel Hill: University of North Carolina press, 2009), 20.
[186] Ibid., 52. Syrett cites the work of Colin B. Burke, *American Collegiate Populations*: *A Test of the Traditional View* (New York: New York University Press, 1892),140-54.
[187] On the medicalization of religious practice, see Paul Cefalu, "The Doubting Disease: Religious Scrupulosity and Obsessive-Compulsive Disorder in Historical Context," *Journal of the Medical Humanities* 31(2010):111-125.
[188] William S. Stearns "Report to the Trustees," quoted in, Nathan Allen, *Physical Culture in Amherst College* (Lowell, Mass: Stone & Huse Book Printers, 1896), 3.
[189] Ibid., 4.
[190] Ibid., 4.

condition caused the death of two seniors in 1859.[191] Stearns held that "not only would lives and health be preserved" by daily exercise, "but animation and cheerfulness, and a higher order of efficient study and intellectual life would be secured."[192]

The observations of Frederick T. Fuller, an instructor at Exeter and 1870 Harvard graduate, offer a similar depiction of college life shortly after the Civil War. Many of Fuller's Harvard friends became neurasthenic, fitting the mold of the poorly-developed college student who suffered the "inevitable break-down" upon graduation. One of his peers who came to college at the young age of fifteen, "with an abnormally large head, slight frame, hollow chest, flabby muscles, and a nervous system evidently over-stimulated and disproportionately developed."[193] The description of the large head references the popular phrenological belief that people with larger heads were the most intelligent, while the other parts of the description illustrate the late nineteenth century concern with nerves.[194] This young man studied eighteen hours a day and shunned physical activity. Fuller reported that "[G]raduation was followed by a complete physical reaction, with indications of nervous prostration alarming enough to cause him to drop mental effort and take an out-door life."[195] Even though the man took up farming to get natural physical activity, his later efforts to pursue a new profession were interrupted by bouts of nervous prostration, which Fuller thought could have been prevented through proper physical training during his young adult years. Other high-achieving students went through the similar "inevitable break-down," with one case leading to a tragic early death.

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[191] Ibid., 4.
[192] Ibid,. 4.
[193] Frederick T. Fuller, "A Suggestion as to Physical Training," *Harvard Graduates' Magazine* 5 no.18 (December, 1896): 200.
[194] George Combe, *Lectures on Phrenology* (New York: Samuel Colman, 1839); Allan S. Horlick, "Phrenology and the Social Education of Young Men," *History of Education Quarterly* 11 no. 1(spring, 1971):23-38.
[195] Fuller, "A Suggestion as to Physical Training," 201.

It is important to take these ideas of poor male student health into consideration in discussion of the fears regarding female higher education. For both sexes, the student life appeared unnatural and unhealthy due to sedentary lifestyles and a lack of physical labor, leading to calls for physical education. Yet, the case for women was also quite different, for there were widely held notions within nineteenth century society that women were inherently weak. Moreover, the question of women's college study was much tenser since higher education involved a boundary shift from women's traditional gendered sphere within the home. A college education could lead women to question their roles, seek new professions, and make marriage a low priority.[196]

With the establishment of Vassar in 1865, women's higher education entered a period of great expansion.[197] Notions of women's proper role in society were brought to the forefront in the discourse on higher education through debates on curriculum, coeducational practices and women's general entry into colleges and universities.[198] The most well-known declaration that higher education was detrimental to women was Edward H. Clarke's *Sex in Education, Or a Fair Chance for Girls* (1873). A physician and Harvard professor, Clarke claimed that women could not go through rigorous schooling equal to men's education "and retain uninjured health and a future secure from neuralgia, uterine disease, hysteria, and other derangements of the nervous systems."[199] Clarke believed that it was unhealthy for women to attend to studies during the menstrual period. He spoke of the common scenario of a young woman who broke down "simply

[196] For example see, Regina Markell Morantz-Sanchez, *Sympathy and Science: Women Physicians in American Medicine* (New York: Oxford University Press, 1985); Barbara Miller Solomon, *In the Company of Educated Women: A History of Women and Higher Education in America* (New Haven, 1985).
[197] Sue Zschoche, "Dr. Clarke Revisited: Science, True Womanhood, and Female Collegiate Education," *History of Education Quarterly* 29 no. 4(winter, 1989):545.
[198] Barbara Miller Solomon, *In the Company of Educated Women: A History of Women and Higher Education in America* (New Haven, 1985).
[199] Edward H. Clarke, *Sex in Education; Or, A Fair Chance for Girls,* (Boston: James R. Osgood and Company, 1875 [1873]), 18.

because she undertook to do her work in a boy's way and not in a girl's way."[200] The intellectual work that college necessitated would rob the reproductive system of the necessary nutrition, and render women mentally incapacitated, according to Clarke.[201] Such claims could indeed turn back the clock on women's advancement.

Clarke's work reflected traditional thinking and raised new concerns. During this era, the "Cult of True Womanhood" dictated a role for women inside the home and promoted piety, chastity and submission to males.[202] Women's social role was thought to be rooted in biology.[203] According to Carroll Smith-Rosenberg and Charles Rosenberg, doctors viewed women to be "starkly different from the male of the species. Physically, she was frailer, her skull smaller, her muscles more delicate."[204]

Women's reproductive systems were also thought to be closely linked to her mental and physical well-being. As Regina Morantz-Sanchez has illustrated, many physicians believed that the reproductive organs "governed psychological and physical health in women" and were "the driving physiological force behind her being."[205] Since Clarke believed that elevated study for women had a deleterious effect on their reproductive system, higher education was, according to Sue Zschoche, "a flagrant violation of the laws of nature, one that he predicted would lead to a

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[200] Ibid., 102

[201] Cynthia Eagle Russett, *Sexual Science: the Victorian Construction of Womanhood* (Cambridge, Mass: Harvard University Press, 1989), 116-117; Laura Briggs, "The Race of Hysteria: 'Overcivilization' and the 'Savage' Woman in Late Nineteenth Century Gynecology," *American Quarterly* 50no.2 (June, 2000):248.

[202]George Cotkin, *Reluctant Modernism: American Thought and Culture, 1880-1900* (New York: Twayne Publishers, 1992), 77; Barbara Welter, "The Cult of True Womanhood: 1820-1860," *American Quarterly* 18 no.2 Part 1 (summer, 1966): 151-174.

[203] Carroll Smith-Rosenberg and Charles Rosenberg, "The Female Animal: Medical and Biological Views of Woman and Her Role in Nineteenth-Century America," *Journal of American History* 60 (September, 1973):344

[204] Ibid., 334. Also see G.J. Barker-Benfield, *The Horrors of the Half-Known Life: Male Attitudes Toward Women and Sexuality in Nineteenth-Century America* (New York: Harper & Row, 1976).

[205] Regina Morantz-Sanchez, *Conduct Unbecoming a Woman: Medicine on Trial in Turn-of-the-Century Brooklyn* (New York and Oxford: Oxford University Press, 1999), 116.

racial apocalypse."[206] Female collegians would be known for "invalidism rather than erudition, sterility rather than achievement, a degenerate femininity rather than true womanliness—if, that is, she lived through the experience at all."[207] Furthermore, the publication of Clarke's work corresponded to a decrease in childbirth in the United States which began in 1870. Joan Jacobs Brumberg observed, "[P]hysicians did not want to believe that childlessness could be voluntary; instead they linked it to menstrual pathology in schoolgirls, pathology caused by careless inattention to 'rhythmic periodicity.'"[208]

Upon publication, Clarke's work quickly evoked strong responses from many defenders of women's higher education and women's rights, who claimed that women could achieve a college degree without becoming sick. Suffragist Julia Ward Howe put together a compilation in 1874 in response to Clarke featuring a number of writers and reports from specific colleges. At Oberlin, a professor noted "[A] breaking down in health does not appear to be more frequent with women than with men."[209] Writer and painter Eliza Bisbee Duffey also issued a quick response to Clarke, claiming that although women may suffer in their early adult years, it was not from education but from "a course of life which recognizes an element of imagined feminine weakness and invalidism to which it is necessary to yield, and which forbids the wholesome active physical life led by the normally healthful man."[210] In 1874, as well, Harvard Medical School's annual Boylston Essay competition was on the topic of the effects of menstruation on

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[206] Zschoche, "Dr. Clarke Revisited: Science, True Womanhood, and Female Collegiate Education," *History of Education Quarterly* 29 no. 4(winter, 1989):546.
[207] Ibid., 546.
[208] Joan Jacobs Brumberg, *Body Projects: An Intimate History of American Girls* (New York: Random House, 1997), 22.
[209] Julia Ward Howe, *Sex and Education, A Reply to Dr. E.H. Clarke's 'Sex in Education'* (Boston: Robert's Brothers, 1874), 202.
[210] Eliza Bisbee Duffy, *No Sex in Education; or, An Equal Chance for Both Girls and Boys. Being a Review of Dr. E.H. Clarkes' 'Sex in Education' (*Philadelphia: J. M. Stoddart, & Co., 1874), 7.

women. Dr. Mary Putnam Jacobi submitted an essay which refuted Clarke's views and won the prize.[211]

A number of female physicians also defended women's higher education. In 1881, Doctors Emily and Augusta Pope, and Emma Call, physicians at New England Hospital for Women and Children, conducted a study on the health of 430 women doctors. They concluded that the female physicians were as healthy as other American women.[212] Several years later, physical educator and physician Mary Taylor Bissell defended women's colleges, writing that "[T]he institutions which the public has criticized as enemies of health of women prove, upon investigation, to be the only ones, with one or two exceptions, where their physical training is conducted on any thorough scientific basis."[213] According to Bissell, colleges that provided formal physical training were raising the standard of female health.

The Association of College Alumni and others involved in women's higher education issued surveys in efforts to give women a voice in this controversial issue. In 1885, an important report was conducted by Carroll D. Wright of the Massachusetts Bureau of Statistics of Labor. Through as assessment of the Association of Collegiate Alumni surveys, Wright asserted that women who attended college had health equal to those who did not.[214] Moreover, members of the association believed that illness among college women was "due to their common lack of physical training and disregard of the laws of health before they enter college."[215] A similar

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[211] Morantz-Sanchez, *Conduct Unbecoming a Woman*, 257-58, note 35.
[212] Ibid., 123.
[213] Mary Taylor Bissell, "The Physical Training of Women," *Proceedings of the AAAPE at Its Fourth Annual Meeting*, 1888 (New Haven: L.S. Punderson & Son, Printers, 1889):8-9.
[214] *Health Statistics of Women College Graduate, A Report of a Special Committee of the Association of Collegiate Alumnae* (Boston: Wright & Potter Co., State Printers, 1885); John Dewey, "Health and Sex in Higher Education," *Popular Science Monthly* 28 (March, 1886): 606-614; Catherine Baldwin, "Note on the Health of Women Students," *The Century Magazine* 42 no. 2 (June, 1891):294.
[215] Edward Mussey Hartwell, "Physical Education for Scholastic Women," *Circulars of Information of the Bureau of Education No. 5- 1885, Physical Training in American Colleges and Universities* (Washington: Government Printing Office, 1886), 132.

survey of graduates was taken by Charles Franklin Thwing, President of College for Women of Western Reserve University and published in 1894. Thwing included a variety of responses to the general question of "[W]hat are the causes of ill health among college women?"[216] Many respondents rejected notions of female incapacity and pointed to sleep, nutrition, exercise, and academic and social pressure as factors affecting college women's health. [217] Some respondents believed college women were not often ill, with one writing, "[T]he college woman is more interested in the laws of health than other women; she has not time to be ill."[218] Another observed, "[C]omparatively little ill health among college women. What little there is is due to heredity, constitutional tendencies, and other causes which would have worked the same result anywhere."[219] Several agreed with one alumnus who stated, "[H]ealth of college girls is better than that of other girls."[220]

From the publication of Clarke's work to the early twentieth century, some physicians maintained Clarke's views, while others came to doubt their veracity. Often, they saw that higher education was equally taxing of women as it was for men, and they did not think the risks outweighed the possible benefits towards the advancement of women. In a symposium on co-education conducted by the editor of Philadelphia's *Medical News* in 1889, gynecologist Theodore Gaillard Thomas wrote that he did not believe "higher education of women produces changes in the general or generative systems of sufficient frequency or magnitude to lead me to disapprove of movements looking to improved mental training in females."[221] In the same survey, Boston gynecologist James R. Chadwick opined that identical education of the sexes

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[216] Charles Franklin Thwing, *The College Woman* (New York: The Baker & Taylor Co., 1894), 79-80.
[217] Ibid., 80-99.
[218] Ibid., 88.
[219] Ibid., 90.
[220] Ibid., 98-99.
[221] Theodore Gaillard Thomas, "Co-education and the Higher Education of Women. A Symposium," *Medical News* 55 no. 24 (December 14, 1889): 670.

might not be prudent, but women's higher education was generally beneficial. College "tends to improve their general health, and consequently their capacity for childrearing, in that it develops the reasoning powers at the expense of the emotions."[222] Chadwick announced that he had "not found any prejudicial influences exerted directly upon the uterus or ovaries by study, and only indirectly, in participation with the derangements of the general system, where the study has been irrational or excessive."[223] J.J. Putnam, a Boston neurologist, found college to be beneficial rather than harmful for women—particularly those of the "neurasthenic class." He wrote in response to the 1889 survey: "I believe that there are many young woman of this temperament, and, also to many who would otherwise lead aimless lives at home, who would be safer, both at the time and afterward, for the sobering and bracing effect of a well-governed, wide-awake college, where they might be trained in such a way that they would be enabled to take an effective part in the world outside, or the world of their own homes."[224]

In addition to the question of female health and higher education, some observers highlighted social and cultural conditions which were harmful to female development. Herbert Spencer wrote about this in 1860, as Stearns was trying to develop a physical education program to prevent poor male student health at Amherst. Spencer wrote that "[W]e have a vague suspicion that to produce a robust *physique* is thought undesirable; that rude health and abundant vigor are considered somewhat plebeian; that a certain delicacy, a strength not competent to more than a mile or two's walk, an appetite fastidious and easily satisfied, joined with that

[222] James R. Chadwick, "Co-education and the Higher Education of Women. A Symposium," *Medical News* 55 no. 24 (December 14, 1889): 670.
[223] Ibid., 670.
[224] J.J. Putnam, "Co-education and the Higher Education of Women. A Symposium," *Medical News* 55 no. 24 (December 14, 1889): 673.

timidity which commonly accompanies feebleness, are held more lady-like."[225] However desirable this ideal of fashionable weakness might have seemed to his contemporaries, Spencer held that this trait would eventually become "an element of repulsion rather than attraction."[226]

In the late nineteenth century many physical educators noticed that enforced inactivity of young girls was to blame for unhealthy attributes such as "flat chests, angular shoulders, often round and warped forward, with scrawny necks, pipe-stem arms, narrow backs, and a weak walk."[227] William Blaikie thought that many girls had "abundant vivacity and spirit," and wanted to play freely and but could not do so because of their nice clothing.[228] William Krohn observed that young women spent their time crocheting, piano playing and sewing instead of taking "health-giving physical romps."[229] In 1892, F.H. Whittier also lamented that "the girls of to-day are playing with dolls or poring over the books and developing spinal curvature at the piano."[230] They ought to be "tramping through the woods and fields, chasing butterflies or picking blueberries" like women of the preceding generation.[231]

Those who promoted female activity also criticized the practice of wearing corsets. As physical educators were beginning to note the effect of labor and exercise on the body, they emphasized the ways they believed corset usage deformed women's bodies. Early exercise promoter Dioclesian Lewis observed in 1882 that women's organs shifted through the use of severe corsets that restricted the waist between two to fifteen inches.[232] Health reformer and writer John Harvey Kellogg studied the female form, and sketched how he believed the organs were deformed through the use of the corset. Dudley Sargent interpreted women's "constricted

[225] Herbert Spencer, *Education: Intellectual, Moral and Physical* (London: G. Manwaring, 1861), 169.
[226] Ibid., 170.
[227] Blaikie, *How to Get Strong*, 42.
[228] Ibid., 43.
[229] William O. Krohn, "Menstrual Disorders in School-Girls," *Mind and Body* 5 no.41 (May, 1898):59.
[230] F.H. Whittier, "Gymnastics in School," *The Annals of Hygiene* 7 no. 11(November 1, 1892):588.
[231] Ibid., 588.
[232] Dio Lewis, "The Health of American Women," *North American Review* 322 (December, 1882):508-510.

waist…as a deformity artificially produced" comparable to the wrapped feet of Chinese women which restricted mobility.[233] Corsets made the abdominal muscles weaker through external pressure and inhibited proper breathing.[234] Recognizing the detriment of women's clothing and fashion trends to their proper physical development, Sargent called for "much-needed dress reform" and suggested looser clothing, knee-length skirts and bloomer costumes in 1889.[235] Four years later, Luther Gulick noted that more and more women were wearing "only bloomer suits" when working in the gymnasium, and affirmed "[T]his is to be encouraged."[236]

Ideals of class, proper femininity and beauty informed notions of female inactivity in the late nineteenth century. This physical inactivity of young women had been preferable to the labor of the working-class woman, impelled to physical activity in factories and on farms for sustenance.[237] In the extreme, illness and invalidism became sought after conditions. Francis Amasa Walker believed that in the early nineteenth century prejudice against physical endeavors "perverted the ideals of womanly grace and beauty. Languor and pallor were attractive. Delicacy of frame and limb was admired."[238] Female physical educator Mary Allen believed that this ideal remained in 1911: "[T]here still hangs a halo about invalidism."[239]

In 1906, a psychologist at Clark University named Thomas Scott Lowden decided to investigate ideas of sickness in a study on personal hygiene. He surveyed a group of three hundred and fifty male and female college and graduate students from Massachusetts, New

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[233] Dudley A. Sargent, "The Physical Development of Women," *Scribner's Magazine* 5 (February, 1889):180.
[234] Ibid., 181; Sargent, *Health, Strength and Power*(New York, Boston: H.M. Caldwell Co., 1904),73. See also, Sargent, "The Physical Test of Man," *Proceedings of the AAAPE at Its Fifth Annual Meeting*, 1890 (Ithaca: Andrus & Church, 1890):40. His views on gender are fully discussed in Chapter Four.
[235]Ibid., 184.
[236] "Ladies' Suits," *Physical Education* 2 no.10 (December, 1893):149.
[237] Brumberg, *Body Projects*, xvii-xix. Also see Joan Jacobs Brumberg, *Fasting Girls: The Emergence of Anorexia Nervosa as a Modern Disease* (Cambridge, Mass.: Harvard University Press, 1988).
[238] Walker, "College Athletics," 4.
[239] Mary E. Allen, "Physical Development of Women and Children," *Proceedings of the AAAPE at Its Fifth Annual Meeting*, 1890 (Ithaca, N.Y.: Andrus & Church, 1890):10.

York, New Jersey, Pennsylvania, Ohio, Indiana, Kansas, Utah and California, regarding their ideas about health and hygiene. Of the ages listed, most people surveyed were eighteen to twenty-one, therefore born roughly between 1885 and 1888, and living their childhood and young adulthood in the 1890s and early 1900s. When asked about ideas regarding health, one eighteen year old wrote, "[M]erely wanted to be delicate, thinking it was feminine. Became disgusted with my notion in seeing others affecting illness." Another eighteen year old recalled that, "[A]fter an illness, I enjoyed being an invalid as I received special attention, unusual delicacies and much care." Similarly, a nineteen year old stated that "I longed to be delicate for a school companion was delicate, and her parents gratified her every desire." One student wrote that she had been deaf and that, "a long time after I could hear I feigned deafness." Aside from feigning illnesses of various types and wishing for sympathy, other participants yearned to be thin and pale. One nineteen year old wrote that at age thirteen, she had "greatly admired a thin, pale, sunken-eyed girl. I thought her so lovely and tried to be like her. I used to feel my ribs to see if I were getting thin." Later, when she entered normal school, she came to respect health when, "a girl very active and always merry appealed to me." Apparently, it was assumed that feigning illness was something that was done in adolescence most often by females, and that now the people surveyed appreciated health for Lowden asked the leading question: "*How did you first realize the advantages of the most robust health?"*[240]

The effects of education on females related to widespread cultural and social concerns. When we realize that what was at stake in female higher education was a thorough expansion of the female sphere, we can understand the anxiety it provoked from many observers and how this anxiety was translated into the realm of health. Yet, there was also a link between the sexes in terms of college education, which spurred efforts to provide physical education for men as well

[240] Thomas Scott Lowden, "A Study in Personal Hygiene," *The Pedagogical Seminary* 13 no.1 (March, 1906): 8.

as women. At Bowdoin College and Harvard, Sargent took note of the "close students" or "grinds." These tended to be intellectuals or those who had to keep up grades for scholarships. They developed the scholar's body, noted for a "drooping head, flat chest, hollow back, and constricted ribs just over the stomach." These "defects" were caused by "faulty positions while studying, pressure of the desk against the body, the constriction of clothing during the growing period, and the relaxed state of certain muscles and the overstrained conditions of others."[241] At Colby College, a female physician took note of similar developments among female students: "[L]ow shoulders, droop necks, prominent abdomens, and awkward gaits, and poor carriage…muscles are flabby and weak, the skin sallow."[242] Similarly, college men were known to be neurasthenic and suffer collapse, just as their female counterparts were often considered "morbidly self-conscious," nervous, neurasthenic and hysterical.[243]

Looking broadly at the discourse of nervousness in the late nineteenth and early twentieth centuries reveals its connection not only to elite boredom or depression, but to over-work, over-study and worry among the population. Beard's numerous descriptions and claims provided many physicians and educators with a common reference point to support or challenge. His focus on modernization and what we today call stressors, spoke to cultural and social changes of the nineteenth century and allowed workers and children to be diagnosed with neurasthenia.

Alongside nervousness, poor physical health reigned among all classes. The division of labor led many working-class people to labor under unhealthy conditions which could cause

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[241] Dudley A. Sargent, "The System of Physical Training at the Hemenway Gymnasium," in *Physical Training. A Full Report of the Papers and Discussion of the Conference Held in Boston in November, 1889*, ed. Isabel C. Barrows (Boston: Press of George H. Ellis, 1890):73.
[242] Mary S. Croswell, "Rational Education for Girls at School," *American Gymnasia and Athletic Record* 4 no. 6 (February, 1908):82.
[243] On the hysterical nature of college women see Croswell, "Rational Education," 82. On morbid self-consciousness and nervousness in women see Thwing, *College Woman*, 80-99.

strain, while the upper classes remained sedentary for long period. Schoolchildren faced the problem of constrained positions at desks, along with sedentary positions, which many deemed to be unnatural and deforming. Nervousness was seen to be a product of physical strain, inadequate exercise, as well as stress from occupations. In colleges and elementary schools, the "scholar's body" became problematic for educators and physicians. While females were judged to be more at risk from educational stress, males also faced break-downs. Young children, moreover, were subject to "school diseases" which incorporated common illnesses of youth. To many observers, it seemed that children were increasingly nervous, pale, weak, and subject to "chronic illnesses."

Education emerged as a health problem, but also a cure. The next chapter will illustrate how many had faith in the power of physical education and hygiene to cure and prevent health concerns. Throughout various medical and educational institutions, physicians and educators turned to scientific forms of physical training to prevent and cure neurasthenia, weakness, physical deformity and even deviance. The biological engineers believed that physical training could strengthen the will, enhancing and individual's strength, ability and character. If modern life harmed people, a return to pre-modern ways of living, embodied in regulated exercise, might help people to a attain "a higher plane of living."[244]

[244] Dudley A. Sargent, "Should the Teacher of Physical Education in Public Schools Have the Training of a Physical Director and Instructor in Hygiene or that of a Physician?" *National Education Association Journal of Proceedings and Addresses* 46 (Printed by the University of Chicago Press, 1908):1011.

Chapter 3. The Transformative Power of Physical Training

Physical educators, hygienists and many physicians had high hopes in the transformative value of physical education. After citing the prevalence of nervousness in the American population, school defects among the children, and unsymmetrical, weak bodies among those involved in the physiological division of labor, biological engineers claimed that physical education was important and necessary. Physical training not only created a more sound body or stronger musculature; properly done, it could strengthen the will, cure and prevent physical and mental problems, and even solve problems of deviance and criminality. Taking these ideas into account physical director A.H.P. Leuf found that, "[T]he possibilities of physical education in the development of a higher humanity are thus incalculably great. And from this it follows that the responsibility of physical educators are commensurable great. With them rests to a large extent the development of a higher grade of human beings, of social units, whose future glory it must be to properly settle for all time the intricate questions now agitating the civilized world over the great economic and social problem."[1]

Faith in the power of physical education spread through educational, reform and medical circles. In schools, hospitals, reformatories and institutions for the blind, deaf and "feeble-minded," physical educators and doctors aimed to provide programs that would strengthen bodies, minds and wills. In early neurology various types of physical training were used as therapy for neurasthenics and other people suffering mental illness. The practitioners often knew about the work of Blaikie and Sargent and used parts of their systems in an effort to strengthen patients' minds and bodies. While physical training was deemed to be beneficial and therapeutic in dozens of institutions, the controversial case of implementing anthropometry and systematic

[1] A.H.P. Leuf, "The Status of Physical Education," *Mind and Body* 1 no. 1(March, 1894):9-10.

physical training at Elmira Reformatory illustrates how such a program could go awry in a setting traditionally known for corporal punishment rather than corporal development.

Exercise and the Mind, Body and Will

Physical educators of the late nineteenth century held strong beliefs in the value of their work and also wanted to promote their fledgling field. To stake a claim as a valid educational system they publicized one of their key beliefs: that physical education was beneficial for the mind as well as the body.[2] In speaking of the mind, they implied an extensive variety of attributes such as intelligence, mood, will, discipline and virtue. Ranging from professional physical educators such as Dudley Sargent, to concerned intellectuals like William James, those who supported physical education consistently expressed that training was not meant to merely develop perfect physiques, but was intimately connected with the function of the intellect and the will. They employed physiology, biology and psychology to draw connections between the mind and the body, and drew upon philosophy and education to emphasize the importance of training the will.[3] Their ideas were also connected to muscular Christianity of the late nineteenth

[2] Clearly the mind-body relationship has been an important aspect of classical and Western philosophy. As historian of medicine Charles Rosenberg has written, "The conjunction of the words *mind* and *body* suggests a millennia-old philosophical debate." Charles Rosenberg, *Explaining Epidemics and Other Studies in the History of Medicine* (Cambridge, New York: Cambridge University Press, 1992), 74. See also, Roberta Park, "Physiologists, Physicians and Physical Educators: Nineteenth Century Biology and Exercise, *Hygienic* and *Educative*," *Journal of Sport History* 14 no. 1(spring, 1987):28-60.

[3] For a sample of articles that connect science to physical training see: J. Stimpl, "Physiology and Pedagogy," *Mind and Body* 1 no. 4(June, 1894):1-5; William O. Krohn, "The Development of the Will Through Physical Training," *National Education Association Journal of Proceedings and Addresses* 36 (Printed by The University of Chicago Press, 1897): 873-883; Randell Hunt, "Influence of the Mind Upon the Body and Its Relation to Education," *Mind and Body* 5 no.59 (January, 1899): 243-247; Hans Ballin, "The Ethical, Physiological and Psychological Aspect of Physical Training," *National Education Association Journal of Proceedings and Addresses* 40 (Printed by the University of Chicago Press, 1901):765-770; M.V. O'Shea, "The Relation of Physical Training to Mental Activity," APER 9 no. 1(March, 1904):28-35.

and early twentieth centuries, but their exercise programs were not directed solely towards Christian men.[4]

In his early career, Sargent found it necessary to defend the goals of physical education from those who found it unnecessary or even vulgar. Muscular development was not a superficial fetish; it improved organic function, endurance, mental acuity, and mood. He emphasized that it was conducted, "not to attain bodily health and beauty alone, but to break up morbid mental tendencies, to dispel the gloomy shadows of despondency, and to insure serenity of spirit."[5] In working to transform individuals, Sargent believed physical training could also change society. His ideas about the importance of the mind and body connection led him to medicalize many deviant or anti-social behaviors. Thus, he asserted in 1883 that "much of the ill-temper, malevolence, and uncharitableness[sic] which pervade society arises from feeble health, and that the great mental and moral disturbances which sometimes threaten the stability of a government may be traced to physical causes."[6]

Sargent's ideas resonate with the muscular Christianity movement, in which Protestant churches supported physical training as part of mental and physical health. He had been influenced by one of the earlier works in this field, Thomas Wentworth Higginson's "Gymnastics" (1861).[7] Many came to agree with Reverend Theodore Thorton Munger, who claimed, "[A] vast amount the poor, illogical, insipid, morbid, extravagant, pessimistic thought that finds its way into books and sermons and conversation has its origin in poor bodies and bad health…Any religious experience that is connected with a weak or diseased body is to be regarded with suspicion. There can be no healthy thought, no normal feeling, no sound judgment,

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[4] Clifford Putney, *Muscular Christianity: Manhood and Sports in Protestant America, 1880-1920* (Cambridge: Harvard University Press, 2001).
[5] Dudley A. Sargent, "Physical Education in Colleges," *North American Review* 136 no. 315 (February, 1883):177.
[6] Ibid, 177.
[7] Dudley A. Sargent and Ledyard W. Sargent, *Dudley Allen Sargent; an Autobiography* (Philadelphia: Lea & Febiger, 1927), 59. Thomas Wentworth Higginson, "Gymnastics," *Atlantic Monthly* 7(March, 1861):283-302.

no vigorous action, except in connection with a sound body."[8] Thus, the YMCA touted the benefits of physical training and developed gymnasiums and sports teams. Luther Gulick was serving within the YMCA as the International Secretary, and had created the triangle symbol encompassing the unity of the mind, body and spirit. Gulick is credited with developing the sports and physical training side of the organization, supported by his vision of unity.[9] In 1892, he wrote in his magazine, "[O]ur nature has a threefold aspect—body, mind and spirit…What God demands of us is symmetry, a symmetrical body, a symmetrical mind, a symmetrical spirit, and he insists that they be *symmetrical with reference to each other*... Each part needs development, education and training, but always only in their true relation to each other."[10] He thus helped to promote the *mens sana corpore sano,* which became an important motto of physical education.[11]

William James supported Sargent's efforts to improve the physical training program at Harvard University. His ideas on the subject reflect muscular Christianity, the mind-body connection, and the importance of the nervous system. Before a forum on compulsory physical training in colleges, James argued that:

> The nervous system and muscles need exercise in order that their vital metamorphoses shall contribute to the normal chemical composition of the blood that bathes the brain. Bad metabolism means wrong mental states. As a student of psychology, as a member of our philosophical department, I feel the greatest interest in the physical culture of all our students. I know that we shall thereby get sounder views, we shall get truer interests, we shall get less eccentric influences of

[8] Theodore Thornton Munger quoted in, William G. Anderson, *Methods of Teaching Gymnastics,* (New York: Hinds and Noble, 1896), 54. Christopher G. White, *Unsettled Minds: Psychology and the American Search for Spiritual Assurance, 1830-1940* (California: University of California Press, 2009),116. See also Theodore Thornton Munger, *On the Threshold* (Boston: Houghton, Mifflin and Company, 1881).
[9] On Gulick and the triangle, see White, *Unsettled Minds,* 118-123; Putnam, *Muscular Christianity,* 70-71.
[10] Luther H. Gulick, "Physical Education in Its Relation to the Mental and Spiritual Life of Woman," *Physical Education* 1 no.5 (July, 1892):81.
[11]Notions of the mind and body connection abound in physical education literature. See Mary E. Allen, "Physical Development of Women and Children," *Proceedings of the AAAPE at Its Fifth Annual Meeting*, 1890 (Ithaca, N.Y: Andrus & Church, 1890):13; W.P. Manton, "The Development of the Young Child with Reference to Exercise," APER 2 no.3 (December, 1897): 184; John M. Pierce, "The Psychological Aspects of Physical Education," APER 3no.1 (March, 1898):30-37.

> philosophy upon life. Unwholesome broodings over mysteries, pessimistic tendencies, etc., which are supposed to be the fruits of a spiritual life too ardently cultivated, would often disappear if the bodily equilibrium were made right.[12]

Physical educators emphasized that proper physical training led to the development of the will, which was one of the chief goals of the entire educational endeavor. If physical education affected the mind and intellectual ability, it certainly had an influence on the will, the essence of man, from which personality and morality radiated. At a 1907 meeting before the New England Association of Colleges and Preparatory Schools, Sargent emphasized the will's importance: "Training the will! What is more important in education?"[13] Will-training was a priority emphasized by many leading nineteenth century thinkers. According to Ralph Waldo Emerson, one of Sargent's stated influences, "the education of the will is the object of our existence."[14] Another of Sargent's influences, T.H. Huxley, likewise wrote in an 1868 essay that an individual had a liberal education who "has been so trained in youth that his body is the ready servant of the will, and does with ease and pleasure all work that, as a mechanism, it is capable of."[15]

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[12] William James, "Untitled Speech, public meeting at Fogg Art Museum of Harvard University," APER 4 no.2 (June, 1889):221.

[13] Dudley A. Sargent, "Does not Physical Training in View of its Effects on the Intellect and the Will, as well as on the Body, Deserve to Become a Compulsory Subject in School and College, and to Receive Corresponding Credit the System of Marking?" *Official Report of the New England Association of Colleges and Preparatory Schools* (October, 1907):72; Sargent, "Physical Training in School and College, Shall it be Compulsory?" APER 13 no. 1(January, 1908): 6.

[14] Ralph Waldo Emerson, "Courage," in *Society and Solitude: Twelve Chapters* (London: Sampson Low, Son and Marston, 1870):231; Barbara L. Packer, *The Transcendentalists* (Athens: The University of Georgia Press, 2007); Sargent and Sargent, *Dudley Allen Sargent*, 59.

[15] Thomas H. Huxley, "A Liberal Education (1868)," *Science and Education: Essays by Thomas H. Huxley Volume 3* (New York: D. Appleton and Company, 1900), 86. The long sentence continues: "whose intellect is clear, cold, logic engine, with all its parts of equal strength, and in smooth working order; ready, like a steam engine, to be turned to any kind of work, and spin the gossamers as well as forge the anchors of the mind; whose mind is stored with a knowledge of the great and fundamental truths of Nature and of the laws of her operations; one who, no stunted ascetic, is full of life and fire, but whose passions are trained to come to heel by a vigorous will, the servant of a tender conscience; who has learned to love all beauty, whether of Nature or of art, to hate all vileness, and to respect others as himself."

The pioneering psychologist G. Stanley Hall influenced much thinking in the field, as he strongly advocated muscular activity to train the will. In 1887, he held, "[T]he muscles are the organs of the will. It is almost impossible, even to think without some slight tension of the muscles."[16] At the 1896 meeting of the Philadelphia Physical Education Society, one speaker illustrated Hall's influence stating that "[T]he great contribution of psychology to physical training was in teaching us that we can touch character by training the motor centres of the brain. We can strengthen the will through the muscles, and its strength will go out again in mental and moral lines."[17] Likewise, William T. Harris thought "[T]he object of physical training is to put the will into the muscle. It is to give one such control over all his muscles that each act performed by the body is performed by the use of all the muscles which nature has provided for that purpose."[18] In training the will physical educators found a higher purpose and foundation for their fledgling field. According to William Krohn, "[N]o matter to what school of physical training we belong, our own common purpose and aim is so to fit, so to adjust, so to train the body of the child that it will obey every behest of the will."[19]

If the muscles and the will were so closely connected, it followed that strong bodies denoted a strong will and character. Hall did not glorify brute strength, but believed that muscular development was a matter of "quality, not quantity."[20] A "brawny slugger" or "enormously heavy man" were often "not as strong as the light but wiry fellow.[21] Hall and

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[16]G. Stanley Hall, "Intellectual and Moral Value of Industrial Training," *Report of a Conference on Charities and Other Subjects Pertaining to the Prevention of Suffering Pauperism and Crime held in Baltimore, April 15, 16, 1887, Under the Auspices of the Charity Organization Society of Baltimore* (Printed for the Society by Wm. K. Boyle& Son, Baltimore, 1887):53. See White, *Unsettled Minds,* 119.
[17] James A. MacAlister, "Untitled Address, Philadelphia Physical Education Society," APER 2 no. 1 (March, 1897):48.
[18] William T. Harris, "Physical Training In and Out of School," *Primary Education* 12 no.3 *(*March, 1904): 112.
[19] William O. Krohn, "Physical Education and Brain-Building," *National Education Association Journal of Proceedings and Addresses* 42 (Printed by the University of Chicago Press, 1903): 822.
[20] Hall, "Intellectual and Moral Value of Industrial Training," 55.
[21] Ibid., 55.

Gulick portrayed excess fat accumulation as an indicator of laziness, lack of will, and a sign that modernization was taking away the world's muscular labor. In 1894, Hall wrote, "[M]ost of the muscular system, which is the organ of the will, and has done all man's work in the world…is allowed to grow flabby and thus the chasm between knowing and doing is widened, the will is weakened, and it is forgotten how akin weakness is to wickedness."[22] Gulick repeated this sentiment in his popular advice book, *The Efficient Life*: "Muscles that are never used get flabby and soft; they become incapable of obeying the will promptly and effectively."[23] In a chapter called "The Body Shows Character," he lamented that many urban businessmen exhibited "fat, clumsy, unsightly bodies; stooped, flabby, feeble bodies; each and every degree of dilapidation and inefficiency."[24] Such bodies were "not capable servants of their owners" and could provide neither "joy and pride" nor "promote self-respect."[25] In sum, Gulick connected health to personality, writing: "Flat chest, flabby muscles, [and] jelly-like abdomen do not make for what we call a strong personality."[26] The wealth or status of the businessman was not as important as his degree of bodily efficiency.

From this perspective, the benefits of exercise were nearly unlimited. According to Sargent, gymnastics and sports "increased powers of attention, will concentration, accuracy, alertness, quickness of perception, perseverance, reason, judgment, forbearance, patience, obedience, self-control, loyalty to leaders, self-denial, submergence of self, grace, poise, suppleness, courage, strength and endurance."[27] Dr. H. F. Kallenberg, a YMCA instructor, promoted the benefits of proper gymnastic form, believing that it fostered morality, intellectual achievement, neatness, orderliness, accuracy, determination and courage. Moreover, "it develops

[22] "Editorial," *Pedagogical Seminary* 2(1892):5.
[23] Luther H. Gulick, *The Efficient Life* (Doubleday, Page and Company, 1913 [1906]), 50.
[24] Ibid., 35.
[25] Ibid., 35.
[26] Ibid., 46.
[27] Dudley A. Sargent, "Physical Training as a Compulsory Subject," *The School Review* 16 (January, 1908):53.

character through its profound effect upon the motor nerve centres through which the higher faculties express themselves."[28]

In their promotion of their field, physical educators claimed another benefit of exercise was that it engendered discipline. As the biological engineers wished to inculcate people with a "physical conscience," they looked to training to promote healthful routines. This was something that A.H.P. Leuf, a physical director at the University of Pennsylvania, found useful. A true system of physical training "absolutely forbids smoking" and "the drinking of alcoholic or malt beverages" while it "insists upon the necessity of regularity in living, especially as regards time of sleeping, eating, exercise and recreation" and "enforces a good substantial dietary that will never be forgotten."[29] Thus, "regular physical exercise teaches it [a child] system, care and discipline."[30]

Physical training programs provided students with a "safety-valve" or outlet for their "animal powers and sensibilities."[31] Sargent argued that before the introduction of college athletics, "[M]uch of the surplus energy, irritability and discontent left over from the pursuit of such methods of education in the past frequently found a safety valve in hazing, midnight marauding, student rebellions, and 'town and gown' fights."[32] Yet a greater development of physical training in the 1880s, "did much to solve the question of the discipline of students…It afforded a legitimate outlet for energy and daring."[33] At the University of Pennsylvania, Physical Director Tait McKenzie agreed that physical training served as a "safety-valve to let off

[28] H.F. Kallenberg, "The Value of Form in Gymnasium Work," APER 8 no.1 (March, 1903):39.
[29] A.H.P. Leuf, " Physical Education in Children," *Journal of the American Medical Association* 14 no.14 (April 5, 1890): 496.
[30] Ibid.,495.
[31] Hitchcock quoted in Burges Johnson, "Creative Americans," *Outlook* 85 no. 17(April, 1907): 959.
[32] Dudley A. Sargent, "Academic Value of College Athletics," *Education* 27 no. 6(February, 1907):319.
[33] Ibid., 319.

his surplus vital force."[34] For female college students, an 1886 Wellesley College alumnus suggested, the "gymnasium offers a safety-valve for pent up spirits."[35] The women were not learning "calisthenics and dancing steps," formerly associated with their sex, but "systematic and regular" exercise in a "regularly equipped gymnasium fitted out with the most approved apparatus under the direction of Dr. Sargent."[36]

Overall physical educators maintained that most successful people had "sound bodies." However, they were forced to contend with people that contradicted this claim. These took two forms: brainy college students that were recently examined, and renowned intellectuals who were known to have weak or ill bodies. According to Sargent, the great geniuses—Blaise Pascal, Charles Darwin, Herbert Spencer, Marcus Aurelius, William Wilberforce and Robert Louis Stevenson—illustrated "the extent to which nature will go in her variations from the normal when special development for any purpose is required."[37] Of the weak students whom he measured at the Harvard gym, he blamed the education system for subverting the "natural condition of a superior brain in a superior body, that undoubtedly exists in our youth during their early teens."[38] These intelligent students, who were entitled to strong bodies, lived in an unbalanced manner, unduly focused on the mental side of their development at the expense of

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[34] R. Tait McKenzie, "The Regulation of Athletic Sports in Colleges," *Proceedings of the AAAPE at Its Eighth Annual Meeting*, 1893 (New Haven, Conn.: Press of Clarence H. Ryder, 1894):24.
[35] Louise Palmer Vincent, "Out-Door Life at Wellesley," *The Chautauquan* 11 no. 5(August, 1890):623.
[36] Ibid., 623. On the idea that exercise acted as a safety –valve, see Walter Chauncey Camp, "Letter to the Editor," *Outing* 4 no.1 (April,1884):66; C. Rathmann, "Mr. C. Rathmann's Address," *Proceedings of the AAAPE at Its Third Annual Meeting*, 1887(Brooklyn: Rome Brothers, Steam Printers, 1887): 25; James L. Hughes, "Physical Training as a Factor in Character Building," *National Education Association Journal of Proceedings and Addresses* 35 (Printed by the University of Chicago Press, 1896): 916; Ira N. Hollis, "The Moral Aspect of College Athletics," *Harvard Monthly* 24 no.2 (November, 1899): 51-58; William G. Anderson, "Making a Yale Athlete," *Everybody's Magazine* 8 no.1(July, 1905): 41-50; George R. Eastman, "The Control of High School Athletics," *The Ohio Educational Monthly* 57 no. 2(February, 1908): 60-64.
[37] Dudley A. Sargent, "Significance of a Sound Physique," *Annals of the American Academy of Political and Social Science* 34 no. 1(July, 1909): 9.
[38] Ibid., 14.

the physical. He looked to anthropometric research on schoolchildren of Chicago, Cambridge, Massachusetts, Omaha, London, Berlin and St. Petersburg, that all seemed to support his claims that intelligence correlated to health.[39]

In the 1890s, the promotion of play in youth inspired the playground movement and new efforts to provide recreation. Some physical educators began to publish views that perhaps the effect of the mind on the body was also of importance to their work. They wondered if exercise would be more healthful if it was conducted in a spirit of fun and interest rather than duty or routine. It is within this intellectual context that Dr. William G. Anderson invented a "muscle-bed" or "thought-weighing machine" in order to research how the body reacted to the mind. [40] His apparatus was apparently able to weigh where blood flowed in the body, through the use of recording devices.[41] Anderson used it to conduct experiments on Yale faculty members and students who played different sports. When he asked his subjects to think of multiplication tables, Anderson held, blood would flow to the head, and that more blood would flow for more difficult tasks. He asked athletes to imagine playing a sport and found that when it was something they were interested in blood flowed to the body parts that were required for that activity; when it was not their favorite activity, the blood did not flow.[42] In order to get the most good out of exercise and to have blood flow the most, it seemed that the person had to be interested in the task at hand. Anderson concluded, "I can prove by my muscle-bed that the important thing in all exercises is the mental effort put forth."[43] He held that the important action was not the body affecting the mind, but the mind affecting the body. Upon reviewing the topic,

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[39] Ibid., 13.
[40] Apparently Italian physiologist Angelo Mosso had invented a machine of the same name in 1896. See, "A Thought-Weighing Machine," *Medical Record* 50no. 22 (November 28, 1896):787; "Weighing Thought and Emotion," *American Journal of Insanity* 53 (April, 1897):643.
[41] Erasmus Whitford Hopkins, *The Science of New Thought* (Bristol, Connecticut: The New Thought Book Concern, 1904),110.
[42] Ibid, 112.
[43] "How the Mind Rules the Body," *Dietetic and Hygienic Gazette* 14 no. 7 (July, 1903): 433.

another writer concluded "the mind really controls and directs every physical change which occurs within the *body.*"[44]

Anderson's work would support the move away from drill and formal training to sports and games in the early twentieth century. By the early 1900s, the focus on the mind in exercise had become more important than it had been two decades prior. A writer for the journal *Mind and Body* found that during exercise, "[W]hen the mind wanders, and the will is relaxed, there are no results in muscular strength and skill."[45] Exercise which was done with a sense of duty and without joy or interest was deemed "merely a fetish" and "practically worthless, —and at times even injurious."[46] By 1906, Sargent also came to realize that the mind affected the body in various ways. He proclaimed, "[A]ll mental states are followed by bodily changes…The action of the body upon mind, and the reactions of mind upon body go to make up the sum of human experiences."[47] While he had earlier emphasized the effect of body upon mind, by the early 1900s, the psychology of the play movement had made a mark on his philosophy, as it did with most other knowledgeable physical educators.

Edward Mussey Hartwell and the Training of the Nerves to Prevent Neurasthenia

Sargent's early ally in institutionalizing a science of physical training was Edward Mussey Hartwell, an important thinker in the field of physical education, who wrote widely on

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[44] Ibid., 434. On the thought-weighing machine, also see "Muscle-bed," *American Medicine* 3no.6 (February 8, 1902): 214; "Regulating the Blood Supply," *Current Literature* 33no.1 (July, 1902): 87; "A Thought-Weighing Machine," *The Phrenological Journal and Science of Health* 117 no.6(June, 1904):199; "Distribution of Blood in the Body," *The School Journal* 64 no. 10 (March 8, 1902):293. Anderson's work drew the attention of people within the New Thought movement, which focused on the power of mental attitudes in one's philosophy of life. See Horatio Willis Dresser, *The Spirit of the New Thought* (New York: Thomas Y. Crowell Company, 1917), 2; Hopkins, *Science of New Thought,* 114. Also see, Henry Wood, "What is the 'New Thought?' *The Christian Work and Evangelist* 76 no. 1939(April 16, 1904):540; Henry Wood, "Causation: Is It Mental or Physical?" *Mind* 8 no. 6 (June, 1904):562-563.

[45] "The Fetish of Physical Exercise," *Mind and Body* 13 no. 146(April, 1905):41.

[46] Ibid., 41.

[47] Dudley A. Sargent, "Physical Training as a Compulsory Subject," *School Review* 16 (January, 1908): 50.

the physiology of exercise. Although he was not always in complete agreement with Sargent, Hartwell supported early efforts of anthropometry, had a large presence at the American Association for the Advancement of Physical Education meetings, where he spoke both formally and ad hoc for lengthy periods about the history and science of exercise, and wrote thorough reports on physical education for the local and federal government.[48] Luther Gulick cited him as one of his early influences in the science of physical education.[49] Hartwell held an M.D from Cincinnati's Miami Medical College and a Ph.D. in biology from Johns Hopkins University. He was appointed Instructor in Physical Culture at Johns Hopkins from 1882-1890, and then became Director of Physical Training for Boston's Public Schools until 1897. After this position, he worked for Boston's Department of Municipal Statistics.[50]

Hartwell applied physiology to education and sought to incorporate innovative work from the sciences. He hoped that education would "be transformed by the modern spirit till is shall become a science based upon the science of human nature, and shall cease to be an empiric art, mainly shaped and ruled to accord with the dreams of speculative thinkers, the precepts of priestcraft, and the maxims of the market and the caucus."[51] Unlike many in his field he did not like to quote the "line of pagan Latin" attesting to the mind/body connection.[52] Instead Hartwell drew upon European alienists, physiologists and scientists including Albert Bain, Charles Mercier, Michael Foster, J. Crichton-Brown, and Emil Du Bois-Reymond. Hartwell believed that the nervous system was the key to education, not only physical education, and that people must

[48] Edward Mussey Hartwell, *Report of the Director of Physical Training* (Boston: Rockwell and Churchill, City Printers, 1891); Edward Mussey Hartwell, "Chapter XII: Physical Training" in *Report of the Commissioner of Education for the Year 1897-98 Volume I* (Washington: Government Printing Office, 1899): 487-589.
[49] Luther H. Gulick, *Physical Education by Muscular Exercise* (Philadelphia: P. Blakinston's Son & Co., 1904): v.
[50] Roberta Park, "Research Note: Edward M. Hartwell and Physical Training at the Johns Hopkins University," *Journal of Sport History* 14 no. 1(spring, 1987):108-119.
[51] Hartwell, *Report to the Commissioner of Education*, 514.
[52] Hartwell, "On the Physiology of Exercise," *Boston Medical and Surgical Reporter* 116 no. 13 (March 24, 1887):297.

learn to conserve their nervous energy. In 1897 he wrote that "[T]he main field of education is the nervous system," and that "[T]he motor element in education is so large and of such vital importance."[53]

It went beyond common knowledge to argue that muscular physical activity was more important to the nerves than to the development of the muscles, and thus a key for education. Hartwell stated, "[T]he functional improvement, *i.e*. the development of the nervous mechanisms which represent bodily movements is the most important effect of muscular exercise or, to speak more accurately, neuro-muscular exercise."[54] To support his position, he used the work of Emil Du Bois-Reymond, a German physician and physiologist, who had written that, "gymnastics, fencing, swimming, riding, dancing, and skating are much more exercises of the nervous system, of the brain, and spinal marrow."[55] In some way that was "not altogether clear," muscular exercise improved the nervous system, allowing people to learn movements and skills through practice.[56] Yet, he suggested "there is a settled conviction, among those who know most about healthy and diseased nerves, that the frequent and habitual passage of stimuli from a given group of cells through definite fibres to the muscles, concerned in a given movement, leads to some kind of rearrangement of the molecules composing the irritable protoplasm of fibres and cells, so that less and less resistance is offered to the passage of subsequent impulses from the same source."[57] In some way the nerves located in the muscles, the motor centres, learned movements and were trained by repetition. At the time, doctors and scientists were also limited in describing exactly how the nerves worked. Hartwell's penchant for quoting the leading doctors and scientists at length illustrates that he did not really know what to make of their studies and

[53]Hartwell, *Report to the Commissioner of Education*, 501.
[54] Ibid., 498.
[55] Emil Du Bois-Reymond, quoted in Hartwell, *Report to the Commissioner of Education*, 510.
[56] Hartwell, "On the Physiology of Exercise,"322.
[57] Ibid., 322.

speculation. He included this passage by Michael Foster: "We must suppose that training promotes the growth and molecular ability of the motor area and of all its connections. There are doubtless limits to the changes which can be effected, but within these limits, the will, blundering at first in the maze of the nervous network, gradually establishes easy paths."[58] Through training, the will was able to create neural paths from the "maze" of the nervous network, and was thus capable of practicing different movements, while improving the "molecular ability" of the motor area of the body.

Training the nerves was important because, as Hartwell and his peers believed, mankind only had a certain amount of nervous energy with which to make do.[59] He thought that the "main end of education appears to be to develop as fully as possible the power of making the most of the fund of energy which is available in the individual organism after the maintenance and repair of that organism have been provided for."[60] It was easy for Hartwell to think of this energy in terms of money, since both were finite and to be managed wisely, and he thought that upper-class, educated and "civilized people" had more of it:

> Man in contradistinction to the brute—thanks to his more complicated structure and more highly specialized functions—has a relatively larger "live capital" of free energy that can be turned into special forms of mechanical work. In comparison with savages and barbarians, civilized men have a larger fund of such capital at command, together with greater aptitude for expending it wisely and economically; while among civilized men, the educated man, by reason of his superior training, is able to do more and harder and better work than the ignorant man.[61]

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[58] Michael Foster, *A Text Book of Physiology* (Philadelphia: Lea Brothers & Co, 1893), 835-836, quoted in Hartwell, *Report to the Commissioner of Education*, 498.

[59] See Gail Bederman, *Manliness and Civilization*, 85-86. Cynthia Eagle Russett, *Sexual Science: the Victorian Construction of Womanhood* (Cambridge, Mass: Harvard University Press, 1989), Chapter 4. The body was seen as having a limited amount of "nervous force" or "nervous strength," which was often connected with sexual energy and power which could be depleted through masturbation and illicit sexuality.

[60] Hartwell, *Report to the Commissioner of Education*, 497.

[61] Ibid., 497.

Hartwell cited Herbert Spencer's writing that the nervous system was in fact the "latest product of evolution."[62] It followed thus, that the evolution of man was geared toward a more efficient use of the nervous system.

In order to conserve and use the nervous energy most intelligently, "it is needful to prevent the master tissues from developing aimless, blundering, or spendthrift habits of action."[63] Physical training was needed so that people could act "easily or with the greatest economy of force*; i.e.,* so that energy shall not be wasted in purposeless, irrelevant, roundabout, or self-defeating movements."[64] In practicing movements and gaining gracefulness, defined by Luther Gulick as "fundamentally economy of action," students would not commit inefficient actions and they would waste less energy.[65] Publishing at the end of the nineteenth century, Hartwell anticipated the work of efficiency expert Frederick Winslow Taylor who wrote in 1911 that while many cared about the depletion of natural resources, "our larger wastes of human effort, which go on every day through such of our acts as are blundering, ill-directed, or inefficient, and which Mr. Roosevelt refers to as a lack of 'national efficiency,' are less visible, less tangible, and are but vaguely appreciated."[66]

Individuals who exhibited "aimless, blundering or spendthrift habits of action," were liable to develop neurasthenia. Like other physical educators, Hartwell followed Beard's assertion that neurasthenia was a great health concern for Americans, and that it derived from a lack of nervous energy. In his 1897 report, he wrote, "[A]s is well known, city children as a

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[62]Edward M. Hartwell, "The Nature of Physical Training, and the Best Means of Securing Its Ends," in *Physical Training. A Full Report of the Papers and Discussions of the Conference Held in Boston in November, 1889,* ed. Isabel C. Barrows (Boston: Press of George H. Ellis, 1890):11

[63] Hartwell, *Report to the Commissioner of Education*, 497.

[64] Ibid., 511.

[65] Luther H. Gulick, "Physical Education. A New Profession," *Proceedings of the AAAPE at Its Fifth Annual Meeting* April, 1890 (Ithaca, N.Y.: Andrus & Church, 1890): 62.

[66] Frederick Winslow Taylor, *Principles of Scientific Management* (New York: Harper and Brothers, 1919 [1911]),5.

class present more cases of nervous instability than do country children as a class."[67] The prevention of such wasteful nervous expenditure could "only be secured through the intelligent and adequate training of the neuro-muscular system."[68] This view accorded with the work of neurologist Joseph Collins, who emphasized physical education to prevent neurasthenia. In 1900, Collins wrote, "[F]rom the beginning measures should be taken to increase the physiological resistance of the nervous system and to fortify the energizing capacity, by bringing the systems of the body to the highest possible point of development."[69] Additionally, "[O]utdoor exercise should be supplemented by gymnasium practice which will develop physical strength and endurance."[70]

Many physical educators believed that gymnastics taught one how to conduct their actions in a way that would not waste important bodily resources. Mary Taylor Bissell claimed that, "[T]he training of the nervous system, which is the immediate results of a systematic practice of gymnastics, is recognized as one of the greatest benefits of such exercise."[71] Physical educator Carl Zeigler stressed that, "[T]he direct training of the motor nerves insures better coordination, resulting in lesser expenditure of vital energy, in all kinds of muscular work, thus producing graceful movement."[72]

Physical awkwardness became an indication of a weak will and weak nervous system. H.F. Kallenberg, a YMCA worker, emphasized a similar point clearly in 1903. He described an "awkward individual" as one who "fails to produce the proper degree of muscular contraction, and fails to confine the muscular contraction to those groups of muscles needed, but brings into

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[67] Hartwell, *Report to the Commissioner of Education*, 503.
[68]Ibid., 497.
[69] Joseph Collins, *The Treatment of Diseases of the Nervous System* (New York: William and Wood Company, 1900),43-44.
[70] Ibid., 44.
[71]Mary Taylor Bissell, "Athletics for City Girls," *Popular Science Monthly* 46 (December, 1894):152.
[72]Carl Zeigler, *Manual of Exercises in Physical Training* (Cincinnati, 1914), 4.

play other groups of muscles whose contractions defeat the efforts and object of the individual. This results in wasteful effort; i.e., in a loss of nervous and muscular energy."[73] In practicing gymnastics, such a person learned proper form and personal bearing, which "conserves nervous and muscular energy" and "indicates that the motor nerve centers have been properly trained."[74]

As Hartwell expressed that the goal of education was to conserve nervous energy, and that physical education could in some way teach people to do so through graceful movements, others also believed that exercise could prevent nervousness. According to Walter Channing, a doctor affiliated with the AAAPE, "a correct method of physical training is the chief means by which we may hope to overcome and prevent the tendency, now so common among us, to mental and nervous instability and degeneracy."[75] James Hughes, a school inspector speaking before the 1896 National Education Association annual meeting provided an interesting portrait of how proper physical training could prevent nervous exhaustion even in its most likely victim:

> The poor boy whose knees bend weakly as he stands, lacks moral fibre as well as physical definiteness. Straighten his knees and you have done a good deal to straighten and define his character. Watch yon boy with the jerky, angular action. Study him carefully and you will learn that his temper and character have conditions corresponding to every jerk and angle. Transform his jerky, angular action by proper physical training into graceful, rhythmic activity–and his character will gradually tend to conform to the altered conditions. Courtesy and calmness will take the place of uncontrolled irritation. His action gains in force what it loses in spasmodic energy. He can do much more work for the world because he wastes less power. He will probably live longer, even though he may work harder, because you have substituted calmness for petulance, and rhythm for spasmodic effort, and have thereby helped to prevent his becoming a nervous wreck.[76]

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[73]Kallenberg, "The Value of Form in Gymnasium Work," 37.
[74] Ibid., 39.
[75] Walter Channing, "Discussion of the System of Physical Training at the Hemenway Gymnasium," in *Physical Training. A Full Report of the Papers and Discussions of the Conference Held in Boston in November, 1889,* ed. Isabel C. Barrows (Boston: Press of George H. Ellis, 1890):77
[76] James L. Hughes, "Physical Training as a Factor in Character Building," *National Education Association Journal of Proceedings and Addresses* 35(Printed by the University of Chicago Press, 1896): 915-16.

Hughes clearly equated physical habitude to moral nature, and had confidence that physical training could make the boy act more gracefully and efficiently while also transforming his character.

Edward M. Hartwell had distilled and disseminated the work of European physiology for American physical educators, even as the actual process of learning motor activity remained murky in this period. Regarding which system to actually implement in the 1880s and 1890s, Hartwell tended to favor the Swedish system because it was the most thoroughly theorized, and he believed that there was not unified American system. Yet, his main focus was to make education a science which trained the nervous system.

Medical Uses of Exercise

After the Civil War, various physicians began to employ exercise, often in combination with medicine and diet, for both the prevention and treatment of mental and physical ailments. They drew upon the work done by early Swedish-influenced doctors, William Blaikie, Edward Hitchcock and Dudley Sargent in prescribing exercise to their patients. Cognizant of the work done in physical education, many physicians called upon others in their profession to study the benefits of exercise, and to consider it in lieu of drugs.

While George M. Beard is commonly known for his treatise on the social and biological nature of the "American Disease" and for his experiments with the use of electricity as treatment, he also wrote about the importance of exercise for mental health. In 1875, he wrote a thousand-page tome on health for a popular audience, titled *Our Home Physician: a New and Popular Guide to the Art of Preserving Health and Treating Disorders.* In this work, muscular exercise was quite frequently listed as a way to alleviate various ailments such as gout, consumption,

dyspepsia, heart problems and nervous diseases.[77] In reference to nervous diseases such as neurasthenia, it is listed among air, sunlight, water, food, medication, electrization[sic], rest and diversion as a "possible tonic influence on the nervous system."[78] His use of the word "tonic" followed the nineteenth century definition: "having the property of increasing or restoring the tone or healthy condition and activity of the system or organs; strengthening, invigorating, bracing."[79] According to Beard, nervous diseases were to "be treated by concentrating on the system *all possible tonic influences.*"[80] Although he continually asserted that "every case must be studied by itself and treated by itself," the use of various types and combinations of tonics, "apply to nearly all nervous diseases of our time."[81] In reference to gymnastics Beard observed that:

> *Gymnastics* are very properly included under the *Movement Cure.* The gymnasium is really an establishment for the preservation of health and cure of disease by muscular movements. The chief difference between the two lies in this, that in the one case the movements are mostly passive, in the other mostly active. The movement cure is chiefly designed for those who are partial or complete invalids, the gymnasium for those who are comparatively well. The one is used to *regain* health, the other to *retain* it.[82]

Thus, Beard illustrates the use of exercise as a way to maintain health and also as a cure for patients. He thought that those who were weak should take less intense exercise, such as a variation on Swedish gymnastics known as the Movement Cure.[83] In order not to tax all of their

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[77] George M. Beard, *Our Home Physician: a New and Popular Guide to the Art of Preserving Health and Treating Disease* (New York: E.B. Treat, 1875), 595, 632, 649, 772.
[78] Ibid., 742.
[79] *Oxford English Dictionary.*
[80] Beard, *Our Home Physician*, 737.
[81] Ibid., 737.
[82] Ibid., 723.
[83] Charles Fayette Taylor and George Herbert Taylor were early American practitioners of the Movement Cure. See George Herbert Taylor, *An Exposition of the Swedish Movement-Cute Embracing the History and Philosophy of this System of Medical Treatment, With Examples of Single Movements, and Directions for Their Use in Various Forms of Chronic Disease, Forming a Complete Manual of Exercises* (New York: Fowler and Wells, Publishers, 1860); Charles Fayette Taylor, *Movement-Cure: Or, The Treatment of Lateral Curvature of the Spine; Paralysis; Indigestion; Constipation; Consumption; Angular Curvature, and Other Deformities; Diseases Incident to Women;*

energy, weaker patients must "always leave off before they are exhausted."[84] Although exercise was healthy and useful for many patients, it could not be used indiscriminately. Beard thought that people that were already nervous could injure themselves because "where the quantity of nervous force is limited there is the greatest danger possible of drawing too heavily upon it."[85] So, for Beard, physical as well as mental over-work could cause people to suffer from nervous exhaustion because they would exceed the limits of their available reservoir of nervous energy.[86]

Charles K. Mills was a strong proponent of exercise for mental and physical problems. A practicing neurologist and professor of nervous diseases in Philadelphia, Mills studied the history of exercise as a remedy and also used it in his practice. He used exercise treatment in his private practice and the nervous wards of the Philadelphia Hospital, where he worked with A.H.P. Leuf.[87] In 1888, he spoke before the Philadelphia County Medical Society his belief that exercise could treat idiocy, insanity, asthma, chorea, hysteria, general nervousness, neurasthenia, nervous palpitations, lithemia, melancholia, neuritis, cerebral syphilis, diabetes, curvatures, ataxias, paralyses, anemia, headaches, and toxic diseases.[88] Mills cited the work of many European doctors, including Dujardin-Beaumetz on the physiology of exercise and Thomas Smith Clouston on mental illness. He asserted that Silas Weir Mitchell, known for his rest cure for neurasthenia, used "the best method of slowly training by what are really systematized active

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Derangements of the Nervous System; and Other Chronic Affections, by the Swedish System of Localized Movements (Philadelphia: Lindsay & Blakiston, 1861).

[84] Ibid., 269.

[85] George M. Beard, *American Nervousness, Its Causes and Consequences* (New York: G.P. Putnam's Sons, 1881),310.

[86] On ideas of nervous energy in the nineteenth century, see Anson Rabinbach, *The Human Motor: Energy, Fatigue and the Origins of Modernity* (New York: Basic Books, 1990).

[87] Charles K. Mills, "The Treatment of Nervous and Mental Disease by Systematized Active Exercise," *Proceedings of the Philadelphia County Medical Society* 9 (1888): 5.

[88] Ibid., 8-9, 15.Lithemia refers to having an excessive amount of uric acid in the blood. Neuritis means general inflammation of a nerve.

movements, although not so called by him."[89] In the field of gymnastics, he discussed Charles Fayette Taylor, George H. Taylor, Archibald MacLaren, William Blaikie and Dudley Sargent.[90] He chose to follow many of William Blaikie's exercises because they were "clear and plain," "arranged on a natural plan," safe and did not require many specialized pieces of equipment. [91] He praised Blaikie's "great work for the advancement of physical culture."[92] Mills used active exercises, rather than passive exercises such as massage and electrotherapy, both with and without apparatus to treat many types of patients. He depended on the assistance of both doctors and gymnastics instructors to conduct his treatment because in order to use the scientific physical training, one needed expertise in both fields.

Mills was particularly concerned with nervous disease, and asserted that "[I]n a large number of nervous and mental cases, the improvement of general nutrition is the one thing needed to bring about relief or cure, and one of the most effective aids to this end is general, systematized active exercise."[93] One of Mills' cases was a twenty-one-year old businessman who had become "broke down mentally, as the result of too great output of mental energy, and physical exertion in business."[94] He became depressed and began to suffer irrational paranoia and delusions. When he rested his symptoms lessened, but upon return to work he "became excited, and then developed ambitious delusions."[95] His condition was so serious that he was admitted to an asylum. He took up Blaikie's exercises, and paid attention to his diet, sleep and general hygiene. Mills explained that for three years this man was able to assert some control

[89] Ibid., 16. On the rest cure see Suzanne Poirier, "The Weir Mitchell Rest Cure: Doctors and Patients," *Women's Studies* 10 no. 1 (1983):15-40; Helen Lefkowitz Horowitz, *Wild Unrest: Charlotte Perkins Gilman and the Making of "The Yellow Wall-Paper,"*(Oxford University Press, USA, 2010).
[90]Ibid., 2-5.
[91] Ibid., 3.
[92] Ibid., 2.
[93] Ibid., 3.
[94] Ibid., 10-11.
[95] Ibid., 11.

over his mood by living with strict discipline. "On a few occasions he has touches of elation, lasting only a day or two, but he has been able, owing to his increased physical and mental strength, to resist with success the beginnings of such attacks."[96] In this example we see that Mills thought increased health consciousness and discipline could result in a greater control of such "attacks."

The work of Mary Taylor Bissell illustrates how exercise was used on women for mental issues. A pioneering doctor, Bissell served as Professor of Hygiene at the Women's Medical College of the New York Infirmary for Women and Children and wrote books on hygiene and women's health. A great supporter of women's advancement, she aimed to illustrate that higher education was not harmful, as was claimed in the popular treatise by Edward H. Clarke.[97] She argued that, "the institutions which the public has criticized as enemies to the health of women prove, upon investigation, to be the only ones, with one or two exceptions, where their physical training is conducted on any thorough and scientific basis."[98] Referring to the leading East Coast women's colleges of the time –Vassar, Smith, Wellesley, Bryn Mawr, and the Harvard Annex— Bissell thought that, "coincident with the intellectual standard is being developed a standard of health among women which can be demonstrated as *higher* than that of the uneducated girl."[99]

At the 1888 AAAPE Bissell explained her treatment of two women, most likely college students. One woman had a "bad" family history, an "extremely delicate build," and had suffered rickets and pneumonia previously. This woman explained that she was dyspeptic, fatigued, had frequent bronchitis and poor appetite. For three months her diet was regulated and she exercised

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[96] Ibid., 11.
[97] Edward H. Clarke, *Sex in Education; or, a Fair Chance for the Girls* (Boston: James R. Osgood and Company, 1873). See Ann Mari May, ed., *The 'Woman Question' and Higher Education: Perspectives on Gender and Knowledge Production in America* (Cheltenham, UK and Northampton, Mass..: Edward Elgar, 2008).
[98] Mary Taylor Bissell, "The Physical Training of Women," *Proceedings of the AAAPE at Its Fourth Annual Meeting*, 1888 (New Haven, Conn.: L.S. Punderson & Son, Printers, 1889):8-9.
[99] Ibid., 9.

systematically for an hour at least three times a week. This course cured all of the woman's symptoms; her appetite flourished, she gained weight and she told the doctor that she "felt like another being."[100] Another case of Bissell's was chiefly psychological. A seventeen-year-old woman suffered from "hysteria" and strong headaches. She complained of various pains in her body, "[W]ept on slight excitement, was almost hypochondriacal[sic] over her symptoms. Imagined she had various organic diseases."[101] Bissell arranged a special diet and light exercises. She also prescribed iron supplements, but like the first patient, there were no other medications. Soon the one-time hysteric gained strength and was able to take exercise classes along with other people. After a course of three months she "began to take pride in her accomplishments...a new look of vigor and health replacing the rather tired and unhappy expression" and all of her symptoms has ceased. [102] Presented in such a way, Bissell seemed to be telling her audience that these women merely needed to exercise in a systematic way, perhaps to create a structure in their lives, while building up their health and improving their mental states. Once they became more active, they were able to become more interested in their activities and did not seem to dwell on minor ailments. They gained a sense of self-esteem and pride as they learned for themselves that they were not necessarily unhealthy individuals on the road to lives of illness and invalidism.

Many other practicing physicians lauded the benefits of exercise for neurasthenia and other nervous diseases.[103] Henry Ling Taylor, son of Charles Fayette Taylor, generally agreed with Beard that patients who were particularly excitable should do more relaxing, passive

[100] Ibid., 14.
[101] Ibid., 15.
[102] Ibid., 15.
[103] Erastus Edgar Maryott, *The New Medical World* (Springfield, Mass.: The Hampden Publishing Co., 1897):43-47; Edward Schaeffer, "When to Prescribe Physique," *Maryland Medical Journal* 44 no. 93(February 4, 1899): 61- 65; H. Timbrell Bulstrode, *The Prevention of Disease Volume 2* (New York: Funk & Wagnalls Company, 1903):515-528; Hiram Elliott, "Neurasthenia," *Long Island Medical Journal* 1 no. 5(May, 1907): 217- 225.

exercise, while people that were dull and languid should participate in quicker, competitive activities to arouse their interest in physical activity. He wrote that, "[T]he repetition of rather gentle monotonous movements, especially of the automatic or passive kind, tends to allay mental excitement and nervous irritability."[104] For nervous invalids, "the neuromuscular system" had to be "aroused and strengthened by bathing, massage and passive movements."[105] Several years later, J.W. McConnell, a Philadelphia physician, suggested a combination of breathing exercises and light weights for various nervous diseases. He did not think that complicated apparatus was necessary but "oftentimes a pair of one-half pound dumb-bells, or a light-weight pulley machine, has a most excellent psychic effect."[106] This easy routine illustrates what another physician called "the golden rule of neurasthenia," which was to keep "exercise within the limits of fatigue" because exhaustion was detrimental.[107]

Other doctors extolled the use of exercise for numerous other ailments. It was considered by Doctor Thomas Bull to be "one of the best prophylactics against the development or extension of almost any hereditary or organic disease."[108] He held that "the value of exercise is not exceeded by that of any single therapeutic measure," and could prevent "headache, nervousness, sleeplessness, neuralgias, disorders of the stomach and liver, constipation, haemorrhoids, and a thousand and one indefinite ailments which render life miserable both to the patient and physician."[109] In 1897, Charles H. Lewis, a New York City doctor, observed that "all medical authorities" thought that tuberculosis could be prevented through "properly directed

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[104] Henry Ling Taylor, "Exercise as a Remedy," *Appleton's Popular Science Monthly* 48(March, 1896): 633.
[105] Ibid., 633.
[106]J.W. McConnell, "The Use of Respiratory Exercises in the Treatment of Neurasthenia and Allied Conditions," *University of Pennsylvania Medical Bulletin* 16 no. 1(March, 1903): 44.
[107] Philip Zenner, "Neurasthenia," *The Cincinnati Lancet-Clinic* 79 (June 25, 1898):648.
[108] Thomas M. Bull, "The Prescription of Exercise," *The New York Medical Journal* (August 9, 1890): 143.
[109]Ibid., 143, 141.

chest calisthenics."[110] Denver physician Charles Denison agreed that "voluntary muscular activity directed to the pulmonary field furnishes the best prevention we have to consumption of the lungs is a striking fact which is easily demonstrated."[111] Lewis supported prescribed physical training as conducted in universities because they "transform[s] the regular 'ready-made' drill…to one 'made to order."[112]

The use of exercise as opposed to pharmaceuticals was an important topic for numerous physical educators and doctors who had great faith that their cures were better than many of the drugs available. As early as 1883, Alfred Worcester, a doctor affiliated with the Waltham Hospital, wrote that doctors must learn how to prescribe exercise because it was usually more necessary than a drug prescription.[113] He ominously predicted that, "[E]ither physicians must recognize the growing demands for professional advice as to such means of maintaining health or a new profession will arise to keep people out of the doctor's hands."[114] Yet even in the 1890s, exercise advocates still thought that physicians did not know enough about physical education. Taylor wrote that many doctors often "neglect exercise as a therapeutic resource" because they failed "to appreciate the indications for its employment…While its proper prescription is undoubtedly more difficult than that of drugs, no drug is capable of producing effects at all comparable, and the care and attention devoted to its intelligent application by physicians and patient are well repaid."[115] Exercise could target certain areas of the body, while

[110]Charles H. Lewis, "Physical Defects of School Girls," *The School Journal* 55 no.14 (October 16, 1897): 390.
[111] Charles Denison, "The Advantage of Physical Education as a Prevention of Disease," *Bulletin of the American Academy of Medicine* 3 no. 9(October, 1898): 529. This idea fell out of favor in the early 1900s. See Charles L. Minor, "On The Use and Abuse of Pulmonary Gymnastics in the Treatment of Tuberculosis," *National Association for the Study and Prevention of Tuberculosis, Transactions of the Second Annual Meeting* (May, 1906): 368-386; Edward O. Otis, "Use and Abuse of Pulmonary Gymnastics," *National Association for the Study and Prevention of Tuberculosis, Transactions of the Second Annual Meeting* (May, 1906):387- 393.
[112] Lewis, "Physical Defects of School Girls,"391; J.M. Rice, "Physiology and the Prevention of Disease," *The Popular Science Monthly* 41(July, 1892):313.
[113]Alfred Worcester, "Gymnastics," *Popular Science Monthly* 23(May,1883): 85.
[114] Ibid., 85.
[115] Taylor, "Exercise as Remedy," 626-627.

drugs were not able to do so. Likewise, Bissell emphasized that she refrained from prescribing any medicine except iron. Other physical educators believed that exercise "is more effective than any known drugs. When scientifically prescribed, exercise is capable of producing wonderful results."[116]

The technique of employing these tonics or treatments, often including exercise, illustrates the widespread use of therapeutics in mental illness of the nineteenth century. While S. Weir Mitchell's "rest cure" has gained notoriety in the literature on the treatment of neurasthenia, doctors prescribed many different types of treatments and highlighted that it had to be individualized because the care of "functional nervous diseases…comes down largely to a matter of personal equation."[117] In their discussion of neurasthenia, neurologists Joseph Collins and Carlin Phillips stressed that "individualization is more necessary to insure success than in almost any other disease. Although there are certain agencies of reconstruction—such as diet, hydriatics, message, rest and exercise, environmental and climatic change, etc.—that are beneficial in every case, their application, at least their most successful application, is scarcely ever the same in two cases."[118] It also required "a deeper insight into the understanding of mankind than almost any other bodily or mental disease."[119] In addition to learning the intricacies of the different treatments and drugs, the neurologist also had to be aware of "psychical or moral therapy."[120]

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[116]M. Douglas Flattery, "Physical Training in American Colleges," *American University Magazine* 3 no. 2 (December, 1895): 130.
[117] Dr. Theodore Diller, Discussion of Harold Sneve, "Gymnastics and Massage in the Treatment of Nervous Disease," *Transactions of the Section of Nervous and Mental Diseases of the American Medical Association* (Chicago: American Medical Association Press, 1910):127
[118] Joseph Collins and Carlin Phillips, "The Etiology and Treatment of Neurasthenia. An Analysis of Three Hundred and Thirty-Three Cases," *Medical Record* 55 no. 12 (March 25, 1899):414.
[119] Ibid., 415.
[120] Ibid., 416.

Many of these treatments aimed to have patients change their routines and establish new, healthy regimens. Neurologists and other physicians were also supposed to offer certain types of "moral therapy." By the early 1900s, neurologists began to speak of these methods as a "re-education for the patient."[121] In 1914, a resident physician at Johns Hopkins University, Charles Phillips Emerson, approached neurasthenia in such a way, writing, "[T]he object of the treatment is reconstruction and re-education—a *new* person. The patient is a nervous bankrupt. He must first allow his capital to reaccumulate, and then learn how in the future to live within his income of nervous force."[122]

Transforming the Blind, Deaf and "Feeble-minded"

Similar ideas informed physical training professionals and physicians as they initiated programs in institutions for the blind, deaf and "feeble-minded." Administrators and teachers often used Sargent's philosophy, along with his equipment, in building their gymnasiums and creating their programs. They tailored their exercise programs to the particular weaknesses that they perceived in their student populations. Some even found that physical training was more widely available in special education. A Maryland doctor attested to the popularity of physical education in institutional settings: "Oddly enough, in the institutions of Maryland it has been, as a rule, much easier for the deaf, dumb and blind, the feeble-minded and insane, to be placed under systematic and scientific bodily training than for the growing student or the patient with imperfectly exercised or developed physique to receive the same needed care and instruction."[123]

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[121] Lewellys F. Barker, "On the Psychic Treatment of Some of the Functional Neuroses," *International Clinics* 1(Philadelphia and London: J.B. Lippincott, 1907):7.
[122] Charles Philips Emerson, *Essentials of Medicine: a Text-Book of Medicine* (Philadelphia and London: J.B. Lippincott, 1914), 367.
[123] Schaeffer, "When to Prescribe Physique," 61.

Years later, playground advocate G.E. Johnson lamented that in Pennsylvania "a child to obtain the best educational advantages must be blind, deaf, feeble-minded, incorrigible or a truant."[124]

In the 1890s and 1900s, there was much use of physical training in institutions for the blind.[125] If the goal of physical training was to make "the body the efficient servant of the mind," this was something that was "especially needful for the blind; for sometimes it seems that their bodies and minds lacked harmony of action, as though they did not belong to each other."[126] Deprived of the "frolics of childhood" they were left with "a superfluity of nervous energy."[127] According to J.E. Vance, Superintendent of the Iowa College for the Blind, blind children were weak or inactive, "usually due to the indulgence and overcare[sic] of fond parents."[128] Superintendent of the Ohio State School for the Blind G. L. Smead believed that physical training was needed to "arouse them from the inertia so characteristic of many blind persons."[129]

Superintendents and physical educators were very optimistic that physical training could help the blind mentally and morally.[130] They observed that the students had better discipline, and became "more thoroughly poised in mind and body."[131] They worked to institute physical training for blind students at many institutions in the late nineteenth and early twentieth century, including Western Pennsylvania Institution for the Blind, Tennessee School for the Blind, Illinois Institute for the Blind, Texas State Institution for the Blind, Kentucky Institution for the

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[124] G. E. Johnson, "The Playground as a Factor in School Hygiene," *Hygiene and Physical Education* 1 no. 3(May, 1909):227.
[125] William Aston Crippen, "Physical Training for the Blind a Success," *Mind and Body* 3 no. 36 (February, 1897): 229-232; Harold G. Powell, "Physical Education of the Blind," APER 11 no. 1(March, 1906): 7- 11.
[126] G.L. Smead, "Institutions for the Blind in the United States are an Essential Part of Our Educational System," *Bulletin of Iowa Institutions* 7(1905):141, 139.
[127] Crippen, "Physical Training for the Blind a Success," 229.
[128] J. E. Vance, "Physical Education for the Blind," *Bulletin of Iowa Institutions* 9 (1907):33.
[129] G.L. Smead, "Institutions for the Blind," 141. See also George Wittich, "Methods Applied to the Physical Training of the Deaf and Blind Children in the Public Schools of Milwaukee," *Mind and Body* 17 no. 188(April, 1910): 41-48.
[130] Vance, "Physical Education of the Blind,"33; W.A. Crippen, "A Year in the Gymnasium with the Blind," *Mind and Body* 5 no. 51 (May, 1898):52.
[131] John D. Gregory, "Athletic Sports for the Blind," *Outlook for the Blind* 1 no. 2 (July, 1907):38.

Education of the Blind, Indiana Institution for the Education and the Blind and Perkins Institute of the Blind in Boston as early as 1882.[132] In April 1908 the National Athletic Association of Schools for the Blind was created to promote school spirit, sociability, physical development and sportsmanship.[133]

At the Illinois Institute for the Blind, director of physical culture W. A. Crippen began a physical training course in 1896, despite skepticism among college authorities as well as students that gymnastics "meant nothing more than training a selected few of our young men for acrobats or football players."[134] Focusing on posture and development of the chest, he used anthropometry, formal and informal exercise set to music, elements of German gymnastics, wrestling and dancing.[135] Crippen believed his methods worked in developing pupil's muscles as well as mind and character. He hoped other institutions would provide physical training, and maintained that training "will do more to teach the blind to be self-reliant, to endow them with strength and courage to face the headwinds of life than all the other branches included in the curriculum of our schools."[136]

A 1906 report written by the principal of the New York Institute for the Education of the Blind attested to the importance of physical training among blind students. Principal Everett B. Tewksbury explained that "[M]ore than the child who sees, the blind child needs to be taught ease and grace of bodily movements, how to stand erect, and how to run, jump and play. The exercises of the gymnasium disclose to the blind a new world of powers of the body, new joys in

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[132] *Report of the Commission of Education for the Year 1882-'83* (Washington: Government Printing Office, 1884): 120-121.
[133] Fred C. Pixley, "The National Athletic Association of Schools for the Blind," *Outlook for the Blind* 2 no.2 (July, 1908):85
[134] W.A. Crippen, "A Year in the Gymnasium with the Blind,"49.
[135] Ibid., 50.
[136] Ibid., 52.

the use of those powers."[137] Working with chest weights and dumbbells and participating on the parallel bars, trapeze, and other apparatus gave students a chance to be "fearless" and "ambitious."[138] Furthermore, they could acquire, "new facts about the physical world, new sensations, new perceptions, new conceptions, all material for the development of the imagination."[139]

Schools for the hearing impaired came to experiment in physical training in the 1890s and early 1900s. Similar to the authorities in schools for the blind, those in schools for the deaf touted the benefits of training on student discipline.[140] According to Luther Gulick, physical training for deaf people required targeting the chests and lungs. He cited the New York Institution for the Instruction of the Deaf and the Dumb as a noteworthy example of this type of physical training, with an impressive gymnasium similar to Yale's.[141] The institution routinely gave complete anthropometric and medical examinations of the students, along with prescribed individual work. The director, Enoch Henry Currier explained that, "[T]o meet…deficiencies in breathing, a steady course of light work, calisthenics, and breathing exercises, have been employed in the hours set aside for the gymnasium, to which classes rotate in the regular school-room grades, and as a part of the school-room work."[142]

Perhaps the influence of Sargent, Gulick and other leading physical educators was most felt at Washington D.C.'s National Deaf-Mute College. Here gymnastics instructor A.F. Adams touted the multiple uses of gymnastics. He instituted "carefully graded" progressive, regulated

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[137] Everett B. Tewksbury, *Seventy-First Annual Report of the Managers of the New York Institution for the Blind* (New York: The Bradstreet Press, 1907):23.
[138] Ibid., 23.
[139] Ibid., 23.
[140] E.M. Gallaudet, "Discussion," *Proceedings of the Tenth Convention of American Instructors of the Deaf and Dumb, Jacksonville, Illinois,* (Springfield, Ill,: H.W. Rokker State Printer and Binder, 1882): 82; Grace C. Green, The Importance of Physical Training for the Deaf," *Hygiene and Physical Education* 1 no. 4(June, 1909):375-377
[141] Luther H. Gulick, "Physical Training for Deaf and Dumb," *Physical Education* 4 no. 2(April, 1895):17.
[142] Enoch Currier quoted in Gulick, 17.

exercises. In a gymnasium which had been prepared under Sargent's direction, students were measured and put to work on Sargent's pulley apparatus. [143] Students also took part in various types of gymnastics, swimming, track and basketball. Speaking in 1893 before the World's Congress of the Deaf, Adams expressed great conviction in the moral, mental and physical benefits of physical training for the deaf. Regulated, scientific physical training "leaves the pupil possessed of good health and of a fully and harmoniously developed body, which he is able to control instantly and with the least unnecessary expenditure of force."[144] Additionally, the student's courage and will were developed through participating in exercises in which there was an element of danger, and "some which are in a measure distasteful, though excellent for the discipline they impart."[145] He emphasized the importance of teaching the hygienic benefits of exercise to the students in order to "impart an intelligent understanding of their bodies, thereby creating a desire for a continuance of physical care and training as long as life lasts."[146]

Like Blaikie, Gulick, and Sargent, Adams was concerned about the "one-sided" physique that people developed through occupation in certain trades within the division of labor. Adams noted optimistically that, "[T]he period when the deaf were regarded fit for only menial work has passed."[147] As deaf people became well-educated they were seeking new work opportunities. Whereas "[A] laborer has about all the physical exercise he needs" deaf "teachers, draughtsmen[sic] and clerks…derive little physical benefit from…occupation and require artificial exercise."[148] Thus, deaf people now took part in occupations that left them with uneven bodies, and therefore they needed the appropriate physical education. Having a less symmetrical

[143] E.M. Gallaudet, "Discussion,"82.
[144]A.F. Adams, "Physical Training of the Deaf," *Proceedings of the World's Congress of the Deaf and the Report of the Fourth Convention of the National Association of the Deaf* (July, 1893): 244.
[145]Ibid., 244.
[146]Ibid., 242.
[147]Ibid., 244.
[148] Ibid.,244.

body from elevated work opportunities thus became "a sign of advancement."[149] The bodies of deaf people were now equally subject to the physiological division of labor—a great advance for them.

In the late nineteenth century physical educators and physicians also used exercise in training for people judged to be mentally retarded. Various types of institutions were developed in the United States in the 1840s and 1850s which differentiated mentally retarded people from other dependents.[150] Prior to the Civil War, the term idiot was often used in labeling individuals with mental handicaps, but, by the late nineteenth century, the more common label was feeble-minded.

Through the late nineteenth and early twentieth centuries, precise definitions of feeble-mindedness were lacking. An 1895 report described the feeble-minded as, "often feeble in body as well as in mind. Their gait and voluntary movements are generally imperfect and slow, and their special senses inactive and undeveloped."[151] In the 1902 *Report of the Commissioner of Education,* Dr. David F. Lincoln, who wrote extensively on school hygiene, noted that "we feel the difficulty of giving in words an exact definition of the word 'feeble-minded.'"[152] Yet, he elaborated that a child in this category was generally "weak on all sides–weak in perception, attention, memory, in power over number and language, in combination, in judgment, in mental endurance, and no less defective in touch, in hand power, in general bodily activity, and constitutional vigor; but while a full definition comprises all this, we must acknowledge that in some cases the defect is only partial, while in others it is so concealed as to require skilled

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[149] Ibid.,244.
[150] James W. Trent, Jr. *Inventing the Feeble Mind: A History of Mental Retardation in the United States* (Berkeley: University of California Press, 1994), 14-15.
[151] J.T. Armstrong, "Nebraska Institute for Feeble-Minded Youth," *The Thirteenth Biennial Report of the State Superintendent of Public Instruction to the Governor of Nebraska* (Lincoln: Jacob North Printers, 1895): 300.
[152]David F. Lincoln, "The Education of the Feeble-Minded in the United States," *Report of the Commissioner of Education for the Year 1902* 2 (Washington: Government Printing Office, 1903): 2160.

judgment to detect it."[153] In general the feeble-minded person was defined as having "some form of weakness of practical judgment which renders its possessor unfit for independent life. A want of moral insight or self-control is equally disabling."[154] In the classroom, feeble-minded children were often disobedient. In a second writing on the subject, Lincoln described them to exhibit "naturally unruly, mischievous, restless tendencies" and to be at cross-purposes with the teacher."[155]

Unsurprisingly, the supporters of physical training for feeble-minded children believed that it developed their moral compass.[156] Lincoln, maintained that it was crucial for the teacher to foster the "habit of attention, continuity, orderly self-restraint."[157] To instill discipline, Lincoln thought the teacher had to urge participation in games, gymnastics and marching. Physical training was necessary because "[C]hildren who respond to no other stimuli will react to such as influence the muscles, and the entire basis of mental training must be built up on such foundations."[158]

Gulick also explored the treatment of feeble-mindedness with exercise. In 1900, he wrote about his experience working with a fourteen-year-old male who "never wanted to do anything."[159] The young man was timid, hesitant and unable to jump, run or catch a ball, or follow mathematics. Incapable of providing any real classification of the young man's possible problems, Gulick emphasized that the key to his treatment was to train the will. "To awaken

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[153]Ibid., 2160.
[154] Ibid., 2160; See also, Margaret Bancroft, "The Claims of the Feeble-Minded," *National Education Association Journal of Proceedings and Addresses* 39 (Printed by the University of Chicago Press, 1900):677
[155] David F. Lincoln, "Special Classes for Feeble-Minded Children in the Boston Public Schools," *Journal of Psycho-Asthenics* 8 nos.2-3 (December 1902-March 1903): 98.
[156] "Maryland School for the Blind," *Maryland Medical Journal* 39 no. 10(June 18, 1898):642-643; E.R. Johnstone, "On the Training of the Feeble-Minded," *National Education Association Journal of Proceedings and Addresses* 39 (Printed by the University of Chicago Press, 1900):677-680.
[157] Lincoln, "Special Classes for Feeble-Minded," 88.
[158] Ibid., 88.
[159] Luther H. Gulick, "Rationale of the Gymnastic Treatment of the Feeble-Minded," *Journal of Psycho-Asthenics* 4 no. 3 (March, 1900): 120.

both a desire to do and a consciousness that he can do something," however, "has proven one of the most difficult of tasks."[160] With patience, over the course of twenty-three lessons, the young man was able to ease into various types of physical activity, take pride in his accomplishments and improve his school work.

Lincoln's 1902 educational report found that many schools for the feeble-minded offered various types of physical training. Such activities were offered at private institutions in Waltham, Massachusetts; Syracuse, New York; Elwyn, Pennsylvania; Fort Wayne, Indiana; Orange, New Jersey; Haddonfield, New Jersey; and in several public schools in Philadelphia, Boston, and Springfield, Massachusetts. Out of the nine particular institutions surveyed that operated outside of the public schools, six had some form of physical training which included either one or more of Swedish gymnastics, prescribed exercise, calisthenics and dumb-bell work.

The development of physical training in institutions for the blind, deaf, and intellectually-challenged illustrates how the foundational ideas of physical training espoused by Sargent and other leaders of the field, affected various segments of the population. Physical educators were not simply trying to develop the upper-classes of society in elite institutions, but students in public schools and institutions. They believed that physical training was one of the leading constructive, therapeutic and prophylactic agents for health. Many administrators knew that prescribed exercises could promote different bodily changes and sought to tailor exercise to the individual. Furthermore, they expressed their faith in exercise to promote mental changes and develop the will, as well as to assist in the maintenance of discipline within the institutions.[161] While inroads were made in physical education in these various institutions, a frequently-

[160]Ibid., 121.
[161] See also Ethel R. Weeden, "Physical Culture for the Deaf and Dumb and the Blind," *Mind and Body* 3 no. 33 (November, 1896): 170-172; William Astor Crippen, "Physical Training for the Blind a Success," *Mind and Body* 3 no. 36(February, 1897): 229-232.

discussed case of physical training as transformation in the late nineteenth century was the program created by Doctor Hamilton D. Wey at the Elmira Reformatory. Wey illustrated the disciplinary as well as the therapeutic effects of exercise on a prison population of young men. He wrote widely on his work and it became a topic discussion in health reform circles in the 1890s.

Exercise and Deviance at Elmira Reformatory

The case of the Elmira Reformatory is an interesting chapter of the history of physical education. By implementing Sargent's system of anthropometry, drawing upon his philosophy and creating a course in physical training for young reformatory inmates, Dr. Hamilton D. Wey sought to reform young men physically, mentally and morally. Physical educators, moreover, looked to the institution as an important example of transformation through physical training.

The Elmira Reformatory was created in 1876 in upstate New York for first-time male offenders ages sixteen to thirty. By 1891, it had become a model for institutions in Massachusetts, Pennsylvania, Ohio, Minnesota, Kansas, Texas and California, and was thought to have "more or less contributed to a reform in legislation and in institutions for criminals in general."[162] Author Alexander Winter referred to the institution not as a jail or prison, but a "physical, intellectual and above all things, a moral sanatorium."[163]

The key element of reform in the Elmira system was the use of the indeterminate sentence, which allowed prisoners to decrease their sentences through their behavior.[164] This was

[162] Alexander Winter, *The New York State Reformatory in Elmira* (London: Swan Sonnenschein & Co., 1891), 2.
[163] Ibid., 1.
[164] On the importance of the indeterminate sentence see, Nicole Hahn Rafter, *Creating Born Criminals* (University of Illinois Press, 1998): Ch 5. Rafter focuses on the language of degeneration and feeble-mindedness used in Elmira Reformatory by Z.R. Brockway and H.D. Wey. The author does not mention the physical culture class and the ability to transform the prisoner.

considered to be an "application of a radical method of conversion and reform."[165] The men were divided into three categories, with all entering prisoners put into the second category, from which they could either rise or fall, replicating a narrative of conversion. Each group had various privileges.[166] Mobility was achieved through a complicated system of grading in demeanor, labor and school achievement.[167] The purpose of the Elmira Reformatory was not merely to hold or punish prisoners but to rehabilitate. Instead of wasting away in prison, they were monitored and given goals for advancement. Thus, "[T]he regaining of his freedom is a prisoner's only aim and aspiration; it is constantly before his eyes, and is a miraculous force that never ceases to impel him, and it is able to arouse the most insusceptible and dormant character.[168] The "desire for freedom" was thought to be a "powerful driving-wheel."[169] Those who collected statistics of prisoner reformation claimed that on average 35% of the prisoners were released in fifteen months, 36% took roughly two years, 19% "are of such bad principle" that they took three years, with a remaining 10% "recruited from incurables" that pass the maximum term.[170] When they were released, they were generally placed on parole for six months.

From the institution's founding, Hamilton D. Wey served as a resident doctor. In 1886, he initiated physical culture in the reformatory, in hopes that it would improve both the minds and bodies of prisoners, and thus aid in their "path to reform" and possible release. Wey was cognizant of Sargent's methods of physical training and closely tied to the community, serving

[165] Ibid., 4. In 1891, 58% of the prisoners were ages sixteen to twenty, 31.8% were twenty to twenty-five, while the remaining 10.3% were twenty-five to thirty years old. Statistics from 1891 indicate that 93.6 % of prisoners were in prison for a crime against property.
[166] The prisoners in the first grade were allowed many privileges including eating meals together with tables furnished with table-clothes and porcelain dishes, betters cells, and ability to serve as an overseer, assistant and guard to the others prisoners. Along with placement in the second grade, they were able to go to the library weekly and have visitors every three months. Those in the third grade did not have these privileges.
[167] Winter, *The New York State Reformatory*, 29.
[168] Ibid., 25-26.
[169] Ibid., 28.
[170] Ibid., 27-28.

on the Board of Directors of Gulick's *Physical Education* and speaking before the AAAPE and NEA in the late nineteenth century. He received much attention from the physical training and medical community, including Gulick, Sargent, Leuf, Hartwell and Charles K. Mills, who seemed to be impressed with his studies.[171] His central article explaining his prison work was widely quoted in medical and educational publications.[172] Wey was informed on the current anthropometric systems and took many measurements of the prisoners using the system created by Sargent.[173] Over his years conducting physical culture, he measured prisoners at the beginning of their training, and then at two month intervals, using extensive anthropometry which included fifty-five measurements and tests of vision and hearing.[174]

In 1886, Wey formed a small class of twelve "dullards." He described these young men as "the poorly nourished boy of the overcrowded tenement house" and the "homeless wanderer about the street and docks," "the overgrown and stupid dunce found in every rural district," "a neglected yokel." They were deemed to be not completely immoral yet they were the type that

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[171] William A. Stecher, "The Objects and Methods of Physical Training in Primary and Grammar Schools—From the Standpoint of the Physical Training Teacher," *National Education Association Journal of Proceedings and Addresses* 43 (Printed by the University of Chicago Press, 1904):814; Dudley A. Sargent, "The Place of Physical Training in the School and College Curriculum," APER 5 no. 1(March, 1900):3; Luther H. Gulick, "Rationale of the Gymnastic Treatment of the Feeble-Minded," *Journal of Pscyho-Asthenics* 4 no. 3(March, 1900):113-122; E.M Hartwell, "Current Topics," *Physical Education* 5 no. 5(July, 1896):48-50; Hans Ballin, "Physical Training and Its Place in the General Education of Man," *Mind and Body* 2 no. 13(March, 1895):1-5; A.H. P Leuf, "Physical Education in Children," *Journal of the American Medical Association* 14 no.14 (April, 1890): 495; Mills, "The Treatment of Nervous and Mental Disease," 11.

[172]"Reformative Value of Physical Education Among the Delinquent Classes," *Child-Study Monthly* 1 no. 4(October, 1895):142-145; Helen C. Putnam, "Physical Training as a Reformative Agent," *Bulletin of the American Academy of Medicine* 1 no. 23(October, 1894):626-635; " Physical Training in Public Schools," *Journal of the American Medical Association* 14 no.1 (January 4, 1890):7; F.H. Whittier, "Light Gymnastics of Schools," *Fourth Annual Report of the State Board of Health of the State of Maine* (Augusta: Burleigh & Flynt, Printers to the State, 1889):296-297; "Physical Training and Mental Culture," *Medical Record* 31 no. 19(May 7, 1887):522.

[173]Hamilton D. Wey, "The Physical Training Department," *Sixteenth Year Book Containing the Annual Report of the Board of Managers of the N.Y.S. Reformatory at Elmira for the Year Ending September 30, 1891* (N.Y.S. Reformatory Press, 1891):111.

[174]Hamilton D. Wey, "The Physical Training Department," *New York State Reformatory at Elmira Seventeenth Yearbook, Containing the Annual Report of the Board of Managers for the Year Ending September 30, 1892* (N.Y.S. Reformatory Press, December 1892),101- 121.

"the school-room failed to reach."[175] Although ten of the twelve were literate, "[T]heir stock of information was surprisingly small…Not one knew the name of the country in which he lived."[176] None of these young men had found a steady trade "but all had made a precarious living as common laborers, tramps, hostlers and street loafers."[177] The group of men, aged nineteen to twenty-nine, were quite small averaging 133.68 pounds at five feet and a half inches.[178]

Wey created a regimen for the men that greatly improved upon the average inmate diet, exercise and bathing practice. [179] In the mornings they went to school classes. After, they had quite an extensive regime of passive exercise and bathing, including a warm bath for fifteen minutes, followed by a massage in a steam room, and twenty more minutes of massage and washing. Seemingly relaxed after this treatment, Wey revealed "upon return to their cells, they would wrap themselves in their blankets and sleep till dinner."[180] After dinner, they did two hours of exercising, consisting of marching in place and light dumbbell work. Their diet was regulated and improved, as well as supervised so that "there might be no passing of food from other tables or from man to man."[181]

Wey made great claims that the inmates improved physically, intellectually and morally. Eight of the men gained an average of 8.26 pounds, while four men lost an average of 7.56 pounds. They "hardened and developed muscles that previously were soft and flabby." The men exhibited improved posture, quicker reflexes, healthier looking skin and seemingly better

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[175] Hamilton D. Wey, "The Pedagogic Phase of Physical Training," in *Physical Training. A Full Report of the Papers and Discussions of the Conference Held in Boston in November, 1889,* ed. Isabel C. Barrows (Boston: Press of George H. Ellis, 1890):112.
[176] Hamilton D. Wey "Physical Training for Youthful and Dullard Criminals," *Proceedings of the AAAPE at Its Fourth Annual Meeting,* 1888 (New Haven, Conn.: L.S. Punderson & Son, Printers, 1889): 21.
[177] Ibid., 19.
[178] Ibid., 19.
[179] Ibid., 22.
[180] Ibid., 22.
[181] Ibid., 20.

dispositions: "The faces parted with the dull and stolid look they had in the beginning, assuming a more intelligent expression, while the eye gained a brightness and clearness that before was conspicuous by its absence."[182] Physical educators were mostly impressed by Wey's declaration that, "[W]ith physical culture and improvement there came a mental awakening, a cerebral activity never before manifested in their prison life."[183] They also made improvement in scholarship and seemed to be able to maintain focus, although these last gains were sporadic.

The achievement of Wey at Elmira was often seen by contemporaries as an exemplar of the transformative power of physical training on the mind. Physical educators were constantly debating the best methods of training and Wey's work seemed to provide sufficient evidence that physical training could positively influence the minds of everyone in society, if it was able to transform criminal "dullards." [184] In this vein, Hartwell claimed, "[F]rom the experience of the Elmira Reformatory we have gained more proof of the capabilities of this work than from the work yet done in any college. It shows the effect of physical training, even when that training is not of the most elaborate nature, is improved brain power."[185] Wey's account of his progress was seen by the editors of the *Journal of the American Medical Association* as "a striking confirmation of the proposition that such training improves the mental power of its subject."[186] Similarly, Hans Ballin, a well-known German gymnastics instructor, published his opinion that, "[T]he noble efforts of Dr. Hamilton Wey…will undoubtedly find the approval of every humane

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[182]Ibid., 24-25.
[183] Ibid.,25.
[184] Chapter Six reviews the conflicts and debates in physical education.
[185] Edward Hartwell, "Discussion," in *Physical Training. A Full Report of the Papers and Discussions of the Conference Held in Boston in November, 1889,* ed. Isabel C. Barrows (Boston: Press of George H. Ellis, 1890): 131-132.
[186]"Physical Training in Public Schools," *Journal of the American Medical Association* 14 no. 1(January 4, 1890): 27.

thinking man and will find, it is to be hoped, many followers in similar institutions for a like good purpose."[187]

Wey received plaudits of the physical education community because his experiments had proven the mind-body connection and the importance of physical culture. If transformation was possible in reformatory inmates, there was a great optimism for the rest of the population. Wey also employed many of the common physical training ideas. In an 1889 speech before the AAAPE he noted it was popularly assumed that, "the brain is cultivated at the expense of muscle, and muscle at the expense of brain."[188] There were many skeptics that thought of, "the physical training of the illiterate criminal, for purely educational purposes, as Utopian in the extreme."[189] Undoubtedly, he agreed with the physical educators that the training of the body improved the mind, stating that "[I]n the training of defective minds, minds in defective or poorly developed bodies, the body should first be brought to the highest attainable degree of perfection."[190] In prescribing exercises, he also cited Sargent's work, arguing that exercise did not have to be joyful in order to be valuable for development.[191] All routine exercises became distasteful and, "the very energy required to put forth in overcoming this distaste is a wholesome discipline."[192] He called for widespread use of physical training in all types of corrective institutions and orphan asylums. Wey framed his work as an innovative prospect, citing that previous methods of moral reform based on appeals to sentiment proved futile because the inmates were so changeable and volatile in nature.

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[187] Hans Ballin, "Physical Training and Its Place in the General Education of Man," *Mind and Body* 2 no. 13(March 1895):4.
[188] Ibid., 27.
[189] *Annual Report of the Board of Managers of the New York State Reformatory at Elmira for the Year Ending in September 30, 1887* (Troy Press Company Printers, 1888): 73.
[190] Wey, "Physical Training for Youthful and Dullard Criminals,"28.
[191] Ibid., 19.
[192] Dudley A. Sargent, "The Physical Proportions of the Typical Man," *Scribner's Magazine* 2 no.1 (July, 1887): 10.

The second cohort of physical culture inmates was not as successful as the first. Wey could not find another adequate trainer and the new one proved incompetent.[193] The second group also received ordinary prison food and did not seem to have extensive bathing routines. As a whole, the group made progress although they were "more difficult to manage and impress."[194] They resisted the system and were, "inclined to malinger and would often deliberately reduce their physical condition by placing themselves in antagonism to the system being pursued."[195] After touting his initial success, Wey's report of the second cohort seemed quite the opposite and did not bode well for his success in the experiment. Over the next several years, Wey seems to have had mixed results from his course in physical training. Even so, in March of 1890, the *New York Times* reported the opening ceremony for a new and well-equipped gymnasium at Elmira, attended by two hundred people, including Edward Hartwell, "who was most enthusiastic in his praise of the new institution." The guests also saw an exhibition by the physical training class.[196]

Based on the publicity of experiments in innovative, rehabilitative reform, it must have been a surprise when Elmira Reformatory was investigated for criminal abuse of its inmates in 1893.[197] The initial investigation was conducted by a committee of the State Board of Charities. There were twenty-five sessions held and two hundred witnesses examined.[198] Most of the accusations were directed at Superintendant Zebulon R. Brockway, and lower level guards. Dozens of witnesses gave testimony of tortuous forms of solitary confinement, whipping, and beating of inmates for insubordination, sometimes involving paddles and iron rods leading to

[193] Wey, "The Physical Training of Youthful and Dullard Criminals," 26.
[194] Ibid., 26.
[195] Ibid.,26.
[196] "Elmira's New Gymnasium" *New York Times,* 21 March 1890, pg. 1.
[197] "To Investigate Elmira's Reformatory," *New York Times,* 2 September 1893, pg. 4.
[198] John Archibald Fairlie, *The Centralization of Administration in New York State* 9 no. 3 (New York: Columbia University, 1898),516.

horrible injuries, and even death.[199] Wey attended the trial, was accused of kicking a prisoner, and was observed as looking anxious.[200] After investigations lasting from October, 1893 to March, 1894, the Board of Charities made recommendations to the state legislature to relieve Brockway, but had no power to make Elmira's Board of Managers comply. In April, there was controversy over the fairness of the investigation, and the state senate expressed interest in reopening the case.[201] In May, the New York Governor, Roswell Pettibone Flower, began another investigation, and this time the defense seemingly proved that many of the witnesses were coached or were lying about their injuries.[202] Called to testify in August, Dr. Wey roundly denied that the reformatory workers caused any of the inmates' injuries.[203] By December 1894 the second investigation, which seemed to discount most of the inmate testimony, came to an end. The governor dismissed the case and Brockway was fully vindicated and back in his former position.[204] Governor Flower seemed to accept that beatings were justified when dealing with hardened, violent offenders. However, the use of a paddle to beat prisoners was suspended, and the reformatory changed from being supervised by the State Board of Charities to the Commission of Prisons.[205] Brockway would later serve as mayor of Elmira.[206]

The printed testimony of the investigation reveals that inmates were sent to the physical culture class to build up their bodies, and some believed that it was beneficial. One person named Joseph McBride had been sent to Elmira is July of 1888 for three years and eight months.

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[199] "Brockway and His Paddle," *New York Times,* 1 November 1893, pg. 8; "More Complaints of Prisoners," *New York Times,* 2 November 1893, pg.6; "Elmira's Modern Inferno," *New York Times,* 18 November 1893, pg.9.
[200] "Elmira's Modern Inferno," *New York Times,* 18 November 1893, pg. 9; "Coerced with a Red-Hot Iron," *New York Times,* 19 November 1893, pg. 8.
[201] "In Defense of Mr. Brockway," *New York Times,* 10 April 1894, pg. 1.
[202] "Lame Walk, the Blind See; Marvels at the Elmira Reformatory Investigation," *New York Times,* 22 June 1894, pg. 5; "Convicts Admit They Lied; Story of Cruelty at Elmira Retracted Under Date," *New York Times,* 27 July 1894, pg. 8.
[203] "Eighty Per Cent. Reformed," *New York Times,* 8 September 1894, pg. 8.
[204] "Brockway is Vindicated," *New York Times,* 11 December 1894, pg. 1-2; "Mr. Brockway in Charge Again," *New York Times,* 14 December 1894, pg. 5.
[205] Fairlie, *Centralization of Administration,* 516
[206]"The Elmira Reformatory," *New York Medical Journal* 85 no.8 (February 23, 1907): 365.

He referred to physical culture class as the "physical torture" class, yet he was put in it after he had been sick, and remained in it until he was able to eat normally.[207] Another named William Mott stated that he had been paddled too much by prison workers and was run down. He was therefore "placed in the physical culture class to build up."[208] John Comisky was at the Reformatory beginning in 1889 and was currently at Auburn Prison. He testified that at one point, "I was near dying, and they put me in the physical culture class. I got built up a little, and they put me back to work in the foundry."[209] Another man named Leopold Cohn who was admittedly of a "delicate" nature had been in the Reformatory's hospital with "General debility." After, he was assigned work in the gymnasium and he testified "I feel much better now since I have been in the gymnasium; I have made progress in that." When asked if he was stronger, he stated, "I am better now."[210]

However, physical culture also functioned as a form of abuse, particularly when it was under the supervision of an ex-convict John L.J. Berthold. When a prisoner named Thomas Maloney refused to exercise, Berthold was said to have kicked and punched him. Berthold punched him again when he failed to jump adequately and Maloney died that night. Another person told the story of a young man from Staten Island known as "Carter:" "through continuous exercise in the physical culture class went insane. He was brutally beaten by a guard, Berthold, and finally transferred to the insane asylum."[211] Prisoners also referred to beatings by Brockway as "'Physical Culture,' Brockway brand."[212]

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[207] *Report and Proceedings of the State Board of Charities Relative to the Management of the State Reformatory at Elmira* (March 19, 1894): 21.
[208] Ibid., 36.
[209] Ibid., 67.
[210] Ibid., 1086.
[211] Ibid., 6.
[212] Ibid., 79.

Those involved in prison reform lamented the investigation and bad publicity and held that the findings of brutality at the reformatory "bring surprise and pain not only to the thousands of intelligent friends of the Elmira Reformatory in this country, but as well to the many foreign workers for penal reform who have found so much to admire and imitate in the methods put in force at Elmira."[213] Arguing that there was a "constant temptation to use brutality in dealing with brutal criminals" the writer urged readers to realize that Elmira's "methods and achievements are independent of the abuses discovered, and should not be allowed to fall with them."[214] Editors of the *Journal of the American Medical Association* defended the institution against "wild newspaper charges" and "sensational stories of abuse."[215] They described Brockway as a "practical worker" with thirty years of experience and Wey as "a recognized scientific student in his field, whose papers and reports take rank with the work of the great leaders of penology."[216] They disagreed that "blows by a broad strap" were harmful for the prisoners and maintained that such "assertions that reddened skin from blows on the buttocks are 'inhuman' and 'brutal,' reflects sadly on the wisdom of parents and the home experience of many centuries."[217]

The physical educators appeared to be mum on the subject of the trial and allegations. In 1896, Edward Hartwell continued to praise the institution on the pages of Gulick's *Physical Training.* He held that "[P]hysical training would be a much more dignified and efficient department in American schools and colleges, if their masters and presidents had as clear an apprehension and as firm a grasp of the principles of motor-education, as have the

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[213] "The Elmira Reformatory," *The Literary Digest* 8 no.22(March 29, 1894):548.
[214] Ibid., 548.
[215] "Elmira Reformatory," *Journal of the American Medical Association* 22 no.16 (April 21, 1894):593, 594.
[216] Ibid., 593-594.
[217] Ibid., 593. For defense of Elmira, also see "The Reformatory Investigation," *Medical Record* 46 no. 1(July 7, 1894):18-19.

Superintendent and Managers of the Elmira Reformatory."[218]

Clearly Hamilton D. Wey saw the benefits of physical training for prisoners and received plaudits from those in the physical education field. If we are to believe his speeches before the physical education associations, he was a reformer who wholeheartedly wanted to improve the lives of the prisoners through physical training. Some prisoners seemed to think that the physical culture class benefitted them, yet Wey did admit to "resistance and antagonism" from them, even before the abuse scandal. We also see through the testimony that the physical culture class was a site of physical abuse by the "convict-trainer," Berthold. As Michel Foucault has written, the horrific physical torture of prisoners generally gave way to the disciplining of mind and bodies within society. At Elmira, while there was a reforming impulse to rehabilitate and transform prisoners through physical training, the tradition of physical violence still remained. It is an interesting example of two important ways of enforcing discipline. The corporal punishment method disciplined the criminal body through external force and violence, denigrating the mind and body of the person. The physical training method disciplined the criminal through educative efforts to instill obedience and transform the mind through the body, and elevated both to a standard that was thought to be healthier. Yet, physical training could be used as a type of abuse, rendering it another form of corporal punishment.

Throughout the late nineteenth century and into the first decade of the twentieth century, doctors, physical educators and school hygienists looked to physical training as a panacea. They were very optimistic that properly conducted physical training could cure and prevent many physical and mental ailments, including neurasthenia. Physical educators associated exercise with training the will, which was a particularly important concept in the latter part of the

[218] E.M. Hartwell, "Current Topics," *Physical Training* 5 no. 5(July, 1896): 49.

nineteenth century. Training the will had a decided impact on immorality as well as mental retardation which were both conceptualized as a lack of will. The case of Elmira illustrates that the difference between theory and practice was often great. The next chapter examines Sargent's ideas and practices more closely. He sought to change preexisting conditions at colleges which only included the strong and athletically inclined in physical activity, and to institute a universal system that would measure people and prescribe individualized physical training.

Chapter 4. Sargent's System: "A Wholesome Discipline"

Dudley Sargent set out to create an individualized system of physical training which would offset the effect of the division of labor on society, strengthen people against nervousness and collapse, and instill within the individual a desire for healthy development. One of his unique contributions was an extensive system of anthropometry, which he used to classify individual weakness, prescribe exercise and develop health statistics. The measurements would hopefully inculcate students with a greater physical consciousness and motivate them to train on Sargent's pulley apparatus.

Through his publications, lectures, and teaching Sargent influenced the field of physical education for decades. He published in popular periodicals, held symmetrical development contests, and even exhibited statues based on his data at the 1893 Columbian Exposition. Believing that his system would suit exercise novices, he hoped that it would become universally instituted. This practice contrasted greatly with competitive college athletics, which were rising in popularity in the late nineteenth century, and which Sargent judged to be elitist and often unhealthy. Moreover, college athletics received an inordinate amount of financial resources. Rather, he hoped to gain backing for his system of "constructive work or biological engineering for all classes."[1]

Sargent's work evolved over the course of his forty-year career at Harvard. He continued to measure students, but realized that the girth of muscles was not an accurate determinant of strength. In order to uncover the "unknown equation" which translated to ability and vitality, he developed others tests based on skills and strength. Toward the end of his career, Sargent grew more comfortable with athletics, as long as they were inclusive and not overly competitive.

[1] Dudley A. Sargent, "Competition in College Athletics," APER 15no.2 (February, 1909):107.

The impact of Sargent's work was felt throughout the United States as numerous colleges, universities, schools and YMCAs purchased his equipment and instituted anthropometry. Others in the field reasoned that the gathering of such statistics might not only motivate the individual students to exercise, but could mobilize communities to develop physical education programs. Furthermore, as Sargent measured and judged certain bodies as ideal and found certain people surprisingly capable of impressive feats, including women, Sargent challenged many mainstream beliefs regarding health, beauty and ability.

Sargent's Anthropometry

Dudley Allen Sargent was born in rather humble circumstances in Belfast, Maine in 1849. In the late 1860s, after attending high school, working in manual labor, and spending several years as a gymnast in a circus, Sargent was looking to forge a professional career in physical training. In 1869, he began his college education, working his way through undergraduate at Bowdoin College and medical school at Yale University by working as physical director of the gymnasia. Finding that Yale would not offer him a permanent position, he briefly ran his own public gymnasium in New York City in 1878. While in New York City, he took the opportunity to attend the clinics of well-known doctors: pioneer neurologist Edward Séguin, whose work was on mental disability was influential in education circles, and pediatrician Abraham Jacobi.[2] These were likely very important for Sargent, who claimed that the clinics led him to become "more and more certain of the importance of physical activity as an educational factor" and strengthened his belief in "the value of regulated physical exercise as a

[2] Edward Seguin, *Idiocy and Its Treatment by the Physiological Method* (New York: William Wood & Co, 1866); T.G. Rooper, *Educational Studies and Addresses* (London: Blackie & Son, Limited, 1902). Seguin passed away in 1880.

cure for nervous irritability, and as relaxation for a tired brain."[3] With recommendations from physical education writer and Harvard alumnus William Blaikie and Harvard zoologist Louis Agassiz, he was able to obtain a position at Harvard in 1879, where he began to conduct his system of anthropometric examination and outfit the Hemenway Gymnasium.[4]

Sargent was among the first physical educators employed at a college gymnasium who had a medical degree and the respectable rank of Assistant Professor. He was embarking on a career which was usually the province of former professional athletes and gymnasts for, at the time, most colleges did not have supervised departments of physical training. Rather, they had initiated student-run athletics teams in the decades before the Civil War. Among the most popular were rowing and baseball in the 1840 and 1850s, and football in the 1860s.[5]

There were popular systems of physical training in the United States, with which Sargent and the other leading physical educators had to contend. The German Turners made some headway in the 1820s, but grew significantly with the 1848 German migration.[6] By 1860 there numbered 150 societies in America.[7] More than sports clubs, *Turnverein* provided classes in gymnastics, fencing, sharpshooting, swimming, hiking and sports. They also offered dramatics, debates, lectures and literary competitions and encouraged the arts and music.[8] While the groups spread throughout the country, including the northeast, in school systems, they had the most influence in the Midwest.[9] According to physical educators Fred E. Leonard and George B. Affleck, until the late 1880s, most non-German Americans were not wholly aware of the

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[3] Dudley A. Sargent and Ledyard W. Sargent, *Dudley Allen Sargent; An Autobiography (*Philadelphia: Lea & Febiger, 1927), 146.
[4] Heather Munro Prescott, *Student Bodies: the Influence of Student Health Services in American Society and Medicine* (Ann Arbor: University of Michigan, 2007), 38-40.
[5] Paula D. Welch, *History of Physical Education and Sport* (Springfield, Ill. Ch. C. Thomas, 2004), 198-201.
[6] Ibid., 94.
[7] Ibid., 97.
[8] Norma Schwendener, *A History of Physical Education in the United States* (New York: A.S. Barnes Company, 1942), 50.
[9] Welch, *History of Physical Education and Sport*, 101.

organizations because the Turners spoke and published mainly in German.[10] Additionally, the Swedish or Ling system of gymnastics had a small following prior to the Civil War. Catherine Beecher was informed by Swedish gymnastics when she supported calisthenics and exercise for women in her popular works of the 1850s.[11] The Taylor brothers, doctors in New York City, also promoted this form of exercise prior to the Civil War.[12] In 1889, Swedish gymnastics gained more of a following when Mary T. Hemenway endowed the Boston Normal School, a teacher training institution founded upon Swedish principles and under the supervision of Baron Nils Posse.

Originating in the early nineteenth century, the German and Swedish systems offered two different programs for vitality. The former, as envisioned by founder Frederick Ludwig Jahn, consisted of five types of activities. These included tactics and marching; free exercises with dumbbells, wands, rings and clubs; dancing steps for women; apparatus work using balance board, buck, horizontal bars, long and side horse, ladders, parallel bars, poles, rope, round swing, suspension rings, and vaulting box; games and play.[13] An 1894 description of the German-American system added various activities, including wrestling, shot put, calisthenics with weights, pole vaulting, fencing, walking, running, jump roping, swimming, rowing, bicycling,

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[10] Fred Eugene Leonard and George B. Affleck, *A Guide to the History of Physical Education* (Philadelphia: Lea & Febiger, 1927), 305.

[11] Harvey Green, *Fit for America: Health, Fitness, Sport and American Society* (New York: Pantheon Book, 1986), 96; Catherine E. Beecher, *Letters to the People on Health and Happiness* (New York: Harper & Brothers, 1855); Catherine E. Beecher, *Physiology and Calisthenics for Schools and Families* (New York: Harper & Brothers, 1856).

[12] George H. Taylor, *An Exposition of the Swedish Movement-Cure, Embracing the History and Philosophy of Medical Treatment, With Examples of Single Movements, and Directions for Their Use in Various Forms of Chronic Diseases, Forming a Complete Manual of Exercises; Together with a Summary of the Principles of General Hygiene* (New York: Fowler and Wells, Publishers, 1860); Charles Fayette Taylor, *Theory and Practice of the Movement-Cure: Or, the Treatment of Lateral Curvature of the Spine, Paralysis; Indigestion; Constipation; Consumption; Angular Curvature, and Other Deformities; Diseases Incident to Women; Derangements of the Nervous System; and Other Chronic Affections, by the Swedish System of Localized Movements* (Philadelphia: Lindsay & Blakiston, 1861).

[13] Mabel Lee, *A History of Physical Education and Sports in the U.S.A.*(New York: Wiley, 1983), 54.

skating, sawing wood and mountain climbing.[14] In contrast, Per Henrik Ling is known as the founder of medical gymnastics.[15] His Swedish system applied contemporary anatomy and physiology and featured progressive free-exercise movements without weights. It began with "The Day's Order" of apparatus-free exercises, included use of word command for the movements, and stressed form and the use of corrective gymnastics.[16] The system also incorporated gymnastics apparatus such as ropes, sings, and swinging ladders.

In the 1860s, the American health reformer Dio Lewis sought to implement gymnastics suitable for all people with varying degrees of strength and ability, through the use of light weights.[17] Lewis compared his system to the German system, which he judged to be too severe for most people. Lewis' more inclusive system had an influence on Sargent, who likewise sought to attract the whole population to participate in exercise. When Sargent first began at Bowdoin, he practiced a similar type of group work, but soon found it unsatisfactory, lamenting: "To expect that a class of individuals, varying between these extremes, could be grouped together and given the same kind of exercise with any hope of benefitting all seemed to me a little less than absurd. Yet this was the Dio Lewis plan, and I had no other system before me, in America, as a guide at time."[18] Sargent's dissatisfaction with the system of group work, in part, led him to create his own system of individualized training based on anthropometry.

At the time, such anthropometrical measurements were not very popular in gymnasium settings. The one person that was measuring at the time was Edward Hitchcock, the physical

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[14] Ibid., 54-55.
[15] Claudine Sherril and Karen P. DePauw "Adapted Physical Activity and Education," in *History of Exercise and Sport Science*, eds. John D. Massengale and Richard A Swanson (Champaign, Il.: Human Kinetics, 1997), 56.
[16] Ibid., 56.
[17] Dio Lewis, *The New Gymnastics for Men, Women, and Children. With a Translation of Prof. Kloss's Dumb-Bell Instructor and Prof. Schreber's Pangymnastikon* (Boston: Ticknore and Fields, 1862).
[18] Dudley A. Sargent, "The System of Physical Training at the Hemenway Gymnasium," in *Physical Training. A Full Report of the Papers and Discussion of the Conference Held in Boston in November, 1889,* ed. Isabel C. Barrows (Boston: Press of George H. Ellis, 1890):63.

director of Amherst College, who begun measuring in 1860. However, unlike Sargent, Hitchcock did not use his measurements to prescribe exercise. Hitchcock, Sargent and other early anthropometrists were undoubtedly influenced by the work of Adolphe Quetelet, a Belgian mathematician, statistician, sociologist and astronomer who lived from 1796-1874. The work that appealed to physical educators was *Sur l'homme et le développement de ses facultés, ou Essai de physique sociale,* which was published in 1835 and discussed and translated in the 1898 *American Physical Education Review*.[19] Quetelet aimed to find the measurements of the "average man" by collecting data and calculating the mean value. This idea was very important for physical educators, who also sought to discover the appropriate standards of growth and development by which to implement their programs of training.

As we have seen in Chapter Two, Dudley Sargent recognized the effect of the division of labor on the bodies of his Bowdoin students and was inspired to study anatomy, growth and the effect of labor upon the body. Upon beginning to work as Assistant Professor of Physical Education and Director of the Hemenway Gymnasium at Harvard University in 1880, Sargent began to accumulate statistics, and over his lifetime he, or people that worked for him, took 30,000 measurements of individuals in colleges, gymnasiums, schools and other institutions such as the Boston Police Department. He also invited professional athletes to his laboratory to be measured, while others sought him out as an authority.[20] Over his time at Harvard University, he measured a large portion of the student body, including a young Theodore Roosevelt, whom he told had heart trouble and should not be active, advice which Roosevelt refused.[21]

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[19] William W. Hastings, "A Brief Resume of Quetelet's 'A Treatise on Man," APER 3 no. 4 (December, 1898):258-269. See Prescott, *Student Bodies,* 18-19.

[20] "Sharkey Measured at Harvard," *New York Times,* 21 January 1899, pg.8; "Modern Woman Getting Nearer the Perfect Figure," *New York Times,* 4 December 1910, pg. SM4.

[21] John F. Kasson, *Houdini, Tarzan and the Perfect Man: The White Male Body and the Challenge of Modernity in America* (New York: Hill & Wang, 2001), 5.

Historian John Kasson has called Sargent, the "John the Baptist of fitness, preaching the gospel of physical education and longing for the messiah, a 'perfect man' who would show forth the way to all."[22] Sargent was passionate about his cause of training and made great claims about the benefits of exercise. His focus was centered upon the development of a well-balanced body based on his anthropometric training. Reflecting the perfectionist beliefs of nineteenth century health reform, Sargent wrote in one of his college essays, "[P]erfection of man on earth, whatever may be his condition hereafter, comes not from the surpassing development of his highest faculties, but the harmonious and equal development of all."[23]

Sargent's ideal body was one that appeared equal and proportional in its precise anthropometric measurements. His anthropometrical exams took into account a large number of bodily measurements. In terms of height, he recorded the general height, height at knee, height sitting, height at pubic arch, and height at sternum. He measured the depth of the chest and abdomen. He took the girth measurement of the right and left thigh, knee, calf, in step, upper arm, elbow, forearm and wrist, as well as the head, neck, resting chest, full chest, waist and hips. He recorded the breadth of the head, neck, shoulders, waist and hips and the length of the left and right shoulder, elbow tip, and foot. He measured the "stretch" of the arms, lung capacity, as well as the strength of the lungs, back, legs, chest, arm, and forearm. In addition to the tape-measure, he used spring-dynamometers, a spirometer, a manometer, suspended rings, and parallel bars to test for strength. He also kept in mind age and weight in creating the physical profile of each person. Sargent, or an assistant, conducted a brief medical history in which he asked the subject about his past and current health conditions. The subject was asked if he had any ailments such as dyspepsia, rheumatism, headache or asthma. The examiner recorded the

[22]Ibid., 42.
[23]Sargent, quoted Carolyn Thomas de la Peña, *The Body Electric: How Strange Machines Built the Modern America* (New York: NYU Press, 2005), 52.

health and nationalities of the parents and asked which parent the subject most resembled.[24] After the examination, Sargent charted the student's data through percentages. If the subject's legs were measured to be in the 80% category, than his arms should be so accordingly. Sargent would prescribe exercise based on these figures in order to create an even and "harmonious" body. He advised his students not to try to approach the "centre of the chart," which would be the statistical mean, "but to *straighten* your own line, wherever it may be, and then carry it forward as near the one hundred per cent line as possible."[25] Amateurs at physical training were supposed to become proportional in their measurements, strengthening their weak parts and correcting their defects, before attempting to raise their measurements. If they tried to raise their measurements, it was to be done evenly, without favoring a particular body part.

Sargent tried to motivate students to systematically exercise by photographing them in three different positions and by giving them their own anthropometric chart. Seeing their physical growth in these representations was novel for college students.[26] With this level of attention and supervision Sargent hoped to "awaken in the young man a genuine interest in his physique."[27] He believed that, "one half the struggle for physical training has been won when he can be induced to take a genuine interest in his bodily condition,—when he desires to remedy his defects, and prides himself on the purity of his skin, the firmness of his muscles and the uprightness of his figure."[28] This development of interest in exercise for the sake of health, rather than achievements in sports, was a key to Sargent's philosophy of training.

In correlation with his anthropometry, Sargent created his adjustable pulley-weight machines with which to carry out prescribed exercises. There were approximately sixty types of

[24]Dudley A. Sargent, "The Physical Proportions of the Typical Man," *Scribner's Magazine* 2 no.1 (July, 1887):7-9. The collection of Dudley Sargent's examination cards is available at Harvard University Archives.
[25] Sargent, "The Physical Characteristics of the Athlete," *Scribner's Magazine* 2 no. 5 (November, 1887): 559.
[26] Sargent, "The System of Physical Training at the Hemenway Gymnasium," 66.
[27]Sargent, *Physical Education* (Boston: Ginn & Company, 1906), 137.
[28] Ibid., 138.

developing appliances, which most often used pulleys and allowed for adjustable weight. Among the types of equipment found in Sargent's developing appliances were "machines" for the foot, ankle, wrist, back and loins, and abdominals. They included rowing machines with a weight attachment as well as hydraulic rowing machines, parallel bars, horizontal bars, an adjustable ladder, pronator and supinator machines, a head-balancing machine, inclined plains, and stirrups with weight attachments. There were chest weights with a swivel pulley, as well as chest expanders and developers. For the legs, there were extensor as well as flexor machines. Sargent created different types of pulley including high pulleys, single one-arm, and back and side. More traditional equipment was also included such as Indian clubs of various weights, wooden dumb-bells, iron dumb-bells and wands.[29]

This system of appliances allowed students to adjust their body building to the weakness recorded on the anthropometric chart. Sargent suggested that students did the prescribed exercises for an hour, "keeping always within the circuit of his capacity, and adding slowly and surely to his general strength and power of endurance."[30] In conjunction, Sargent would also suggest jogging for most students. Sargent also advised special exercise "[I]f the heart is weak, the lung capacity small, the liver sluggish, the circulation feeble, or the nervous system impaired."[31]

Those students who used the gymnasium were also given a handbook with their prescribed exercises, including the equipment they should use, along with the weight it should be set for and the amount of time to be spent doing a particular exercise. Furthermore, Sargent

[29] Edward Mussey Hartwell, "Physical Training in American Colleges and Universities" *Circulars of Information of the Bureau of Education No. 5, 1885* (Washington: Government Printing Office, 1886): 44
[30] Sargent, "The System of Physical Training at the Hemenway Gymnasium," 67.
[31] Ibid., 67.

furnished them with advice on diet, sleep, bathing, and appropriate clothing.[32] He considered bathing to be of the utmost importance, and often suggested baths after working out, maintaining that "the bath which regularly follows the exercise at the gymnasium, and the habit of bathing established thereby, is almost as valuable as the exercise itself."[33]

In 1887, Sargent published an article on his work for the popular *Scribner's Magazine.* One of the charts he included represented a thirty –three year old man who weighed 161 pounds and was nearly five feet ten inches. This man was quite strong, with many measurements reaching the 80% class. However, one measurement severely fell to the 5% class, the measurement for the depth of chest. This in turn affected the lung capacity, which was in the 40% class. This was not easily detected by sight and Sargent did not think his training could really help the man. He surmised, "[T]o bring the depth of the chest up to this standard by natural processes, although impossible now, would have been a simple matter in early youth."[34] The description shows how Sargent gave each man individual attention and personalized consideration, and how the prescriptions of exercise were not clear-cut. This article, along with two more articles on the proportions of women and male athletes also published in *Scribner's Magazine*, illustrate Sargent's desire to write for and possibly influence the wider public. [35]

Why was symmetry so important for Sargent? He claimed that the development of certain body parts would result in "a further modification of structure which would eventually throw the remaining organism out of gear and constitute a greater or less tendency to disease."[36] He quoted the work of British physician Edward Henry Sieveking, who wrote that, "[T]he greater advance we make in inquiries into the physical signs of health, the more perfectly is the

[32] Sargent, *Handbook of Developing Exercises* (Boston: Franklin Press: Rand, Avery & Co., 1882).
[33] Sargent, "The System of Physical Training at the Hemenway Gymnasium," 67.
[34] Sargent, "Physical Proportions of the Typical Man," 16.
[35] Sargent, "The Physical Characteristics of the Athlete," *Scribner's Magazine* 2 no. 5(November, 1887):541- 561; Sargent, "The Physical Development of Women," *Scriber's Magazine* 5 no. 2(February, 1889):172-185.
[36]Sargent, "Physical Proportions of the Typical Man,"17.

law of proportion, that governs the typical man, demonstrated, rendering it equally apparent how undue or imperfect development of any organ or function throws the remaining organism out of gear, and constitutes a greater or less tendency to disease."[37] Sargent was also undoubtedly influenced by the British physical educator, Archibald MacLaren, who thought that a man was better off, "whose frame is generally and uniformly weak…than he whose frame is partially and locally strong, because the natural tendency to gauge and estimate the general strength by the power of the strongest part."[38] Sargent's system, therefore, was supposed to focus on developing the weakest parts to create proper proportion. He also thought that the weaker parts "have been robbed of their just share of nutriment, in order to sustain the increased life of some other part."[39]

As we have seen, Sargent believed that people became deformed by the work that they did through the division of labor. He therefore thought that, "[T]he grand aim of all sports and athletic exercises should be to make them supplement, so far as possible, the deficiencies in one's life work or occupation."[40] But, instead, he found that athletics were further deforming people's bodies, adding to the damage done by the division of labor and education. As athletics were growing and becoming more competitive, Sargent realized that the need to fill particular positions within a team led to specialized types of training resulting in specialized bodily development. Moreover, men with certain innate abilities or strengths were set to tasks which utilized their strengths rather than instructed to develop their weaknesses. This was not satisfactory for Sargent, who disagreed with common educational mantras of the times, "Cultivate both mind and body along the line of least resistance," and Longfellow's quote,

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[37] Sargent, "The Physical Test of Man," *Proceedings of the AAAPE at Its Fifth Annual Meeting*, 1890 (Ithaca, N.Y.: Andrus & Church, 1890):39.
[38] Archibald MacLaren, *A System of Physical Education: Theoretical and Practical* (Oxford: Clarendon Press, 1869), 47. See also William Gilbert Anderson, *Anderson's Physical Education: Health and Strength, Grace and Symmetry* (New York: A.D. Dana, 1897).
[39] Sargent, "Athletics in Secondary Schools" APER8 no. 2(June, 1903):64.
[40] Sargent, *Physical Education*, 57.

"Study yourselves; and most of all note well wherein kind nature meant you to excel."[41] The key to his system was his defiance of these ideas and support of symmetrical development of mind and body and symmetrical development of body parts.

Throughout his years of work, Sargent insisted on the disciplinary value of physical training. In 1887, Sargent noted that criticism was mounting against formal exercise and, "[T]he idea has become thoroughly established in the community that in order to be beneficial physical exercise must be interesting."[42] He asserted, "let it be understood that exercise itself is beneficial, however disagreeable or distasteful. If the effort is made, the physiological effects of exercise are realized."[43] His main point throughout his career was: "All physical exercises, however pleasant at first, tend to become irksome and distasteful when pursued systematically day after day; but the very energy that one is obliged to put forth in overcoming this distaste is a wholesome discipline."[44] Accordingly, people should have enough discipline to be sufficiently motivated to exercise for the sake of their own health, not for competition or aesthetics, once they were informed of the benefits and necessity of physical exercise. All people were capable of improving their condition through his equipment, even if had a slow start, for it did not require skill. The only competition was with one's own numbers.

Publicizing Symmetrical Standards

While Sargent lamented weak student bodies and people's lack of physical activity, he publicized shining examples of ideal bodies. In 1889, he held a contest at Cambridge, Massachusetts in order to find the man and woman with "the most perfect symmetry of form." In

[41] Sargent, "Physical Proportions of the Typical Man," 17.
[42] Ibid., 10. This critique is explored thoroughly in Chapter Six.
[43] Ibid., 10.
[44] Ibid., 10.

order to be symmetrical, the person could not exhibit any sign of imbalance, deformity, or anything arising from specialized sports or physical labor. Three thousand people entered from ages 17 to 30. In the end, the male victor was a six foot one, 185- pound student and athlete from Bowdoin College. The winning female, ironically named Margaret Blanche Best, was a twenty-five year old teacher and most likely a pupil at Sargent's Summer School of Physical Education. Sargent explained that at five foot five inches, and 130 pounds, his anthropometric tables illustrate that her height as well as her weight were exactly the 82.5%. He concluded that, "with all other women to judge from, Miss Best's height and weight are in just the same proportion: in other words symmetrical."[45] Thus, Margaret Blanche Best was dubbed the most symmetrical woman in this contest, despite any other notions of female perfection or beauty that held sway at the time. Aware that he was publicizing a new standard of beauty, Sargent asserted that women needed "some other standard of beauty and symmetry of figure than that furnished by the fashion plates and corset advertisements of the day."[46] Not everyone who came across Sargent's views agreed with his new standards of physical perfection. A writer reporting on the contest quipped: "Now that Dr. Sargent's new style of beauty contest – where inexorable weights and measures reign – has come into vogue, the verdict of the eye must be regarded with distrust. It will be safe no longer for Mr. Ginty to declare Sallie Waters is the finest girl in town, for Captain Jinks may be expected to respond at once: 'No sir; you are mistaken. Her measurements, according to the percentile system, do not come within ten marks of those that record the superb lines of the peerless Annie Laurie.'"[47]

Sargent brought his anthropometric exams to the public on a grand scale in 1893 at the extraordinary World's Columbian Exposition in Chicago, as part of the physical anthropology

[45]Fred. C. Drayton, "Measuring Out Beauty," *Current Literature* 6 no. 2(February, 1891):216.
[46]Sargent, "Physical Test of Man," 40.
[47] Drayton, "Measuring Out Beauty,"217-218.

laboratory along with several other leading anthropologists, physical educators and psychologists. Edward Hitchcock and Anna Wood of Wellesley presented anthropometric charts, photographs and equipment from their physical education programs. Exhibits of anthropometric studies in children were presented by Harvard Medical School's Henry Pickering Bowditch and G.M. West of Worcester, while the State Board of Health of Massachusetts also contributed instruments and statistics. Assortments of skulls and skeletons were also provided by Franz Boas and Peabody Museum curator W. F. Whitney, while Frederic Putnam featured charts based on 17,000 examinations of Native Americans. Smith College's J. H. Pillsbury, Clark University's C. F. Hodges, and Harvard's C.W. Fitz and Hugo Munsterberg exhibited psychological and neurological charts and instruments.[48]

Taking up an entire room, Sargent's exhibit likely attracted attention for he created life-size statues of the average male and female college students based the mean of 10,000 anthropometrical examinations taken over the preceding thirteen years.[49] Ironically, it was reported that "[T]here was not found in the entire course of the measurements one single figure, male or female, that answered in every requirement to the mean selected for the typical figure."[50] The sculptors "have been greatly troubled to find satisfactory models" while the faces of each statue were based on composite photographs from several students from the various colleges.[51]

The exhibition also measured people at the Exposition and informed them of their measurements. Writing in 1905, Jay Seaver, a physical educator at Yale commented, that these

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[48] *Report of the Massachusetts Board of World's Fair Managers* (Boston: Wright &Potter Printing Co., State Printers, 1894), 160-161.
[49] Milton J. Stone, "The Typical Man and Woman of America," *The Illustrated American* 13 no.174 (June 17, 1893):710.
[50] Ibid., 710.
[51] Ibid., 710.

statues "created a wider interest in the cultivation of the physical growth of students and gave a healthier trend to the gymnastic teaching that has followed."[52]

While the female statue became a subject of much discussion, the male statue was generally well-received. The latter was five foot eight inches and weighed 138 pounds with a chest measurement of thirty-four inches. One report depicted the statue as "[S]tanding squarely, clean-limbed, strong-necked; he looks rather like a runner than a rower; but there is nothing sordid, nothing warped, nothing to indicate the deterioration of a civilization of too many *wheels*, the stunting, or the abnormal one-sided development, of the factory or of city life."[53] Thus the male statue was perceived as a healthy young man, not a neurasthenic victim of modern life or a manual worker with his labor inscribed upon his body. Others commented that the figure showed "immaturity" but a "very good" or "excellent" development, "and the estimate of its many visitors [is] most favorable."[54] They found that "this statue far exceeds the average of any other nation, even England."[55]

The rendering of the female student was wrought with controversy regarding the health of American women, the effects of higher education on women, and standards of beauty and health. The statue was created to be five foot three and 114 pounds, with a chest measurement of thirty inches, the waist "over twenty-four" and feet that were ten inches long. One writer claimed that, "there is already every extreme of expressed opinion, from that which holds this modelled[sic] American girl to be as fine as the Greek standard, to that which holds, with one

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[52] Jay W. Seaver, *Anthropometry and Physical Examination* (New Haven, Conn., 1905), 14.
[53] "Point of View," *Scribner's Magazine* 14 no. 1 (July, 1893):130.
[54] "Far from the Ideal," *San Francisco Chronicle,* 4 June 1893,pg. 2; Mary A. Livermore, "The American Girl," *The Youth's Companion,* 5 July 1894, pg.307; Albert F. Roussel, "Exercise and Over-Exercise, With Especial Reference to Athletics," *Alumni Report (Alumni Association of the Philadelphia College of Pharmacy)*31no.5 (February, 1895):102.
[55] "Point of View," *Scribner's Magazine* 14 no. 1(July, 1893):130.

zealous editor, that the statue would justify us in closing every woman's college tomorrow."[56] This diversity of opinion illustrates how Americans were unsure of standards for health, masculinity, and femininity at the end of the nineteenth century. While the male statue seemed strong enough, the general public was at odds regarding the representativeness of the female sculpture.

Some writers considered the female statue to be merely adequate in health and femininity. According to a writer in *Harper's Bazaar,* the statues put to rest "some of the most prominent bugbears that were abundant when the higher education began amongst us. Those terrors, it will be remembered, lay largely in the fear that the higher education of women would abolish the conspicuous distinctions of sex, and give us a race of mannish, unfeminine, and unattractive women."[57] Although both statues were deemed less beautiful than the statues of antiquity, "[T]here is not a glimpse of hardening or masculinity" in the female figure and the sexes remained "absolutely distinct from one another."[58] The statues also illustrated that there was no injury from "over-study" in college. The writer concluded that, "the essential point is that it is fairly healthy, fairly attractive, and above all, thoroughly womanly."[59] Clearly, the concerns about the masculinizing effects of higher education for women, voiced by Edward Clarke in the 1870s, were still part of the conversation regarding female health and social life.[60]

One newspaper reporter commented that the female statue:

> …makes the believer in feminine loveliness shudder, for certainly it is unlike the popular impression of what modern women are… the female figure is a hideous revelation. The legs are strong but a little heavy about the upper portion of the thighs, and the arms are satisfactory, but the torso is enough to frighten one. The

[56] T.W.H, "Women and Men," *Harper's Bazaar,* 20 no. 26 (May 20, 1893):398.
[57] Ibid. 398.
[58] Ibid., 398.
[59]Ibid., 399. See also Jessie A. Lines, "Gymnastics, Ancient and Modern," *Pratt Institute Monthly* 3no.10 (June, 1895): 199-201.
[60] Edward H. Clarke, *Sex in Education; or, a Fair Chance for the Girls* (Boston: James R. Osgood and Company, 1873).

> impression one gets from looking at it is that the whole body has been shoved upward, making an oval fullness about the chest that resembles nothing that any accepted figure of the female form gives any token of. The waist and back are pittiably[sic] weak, and the former looks as if a good sharp blow would break the upper part of the body off like the bowl of a pipestem[sic]... Since the figures have been open to public gaze in this city every woman who has seen them declares that Dr. Sargent is a brute or that he made some fearful mistake in giving his instructions to the sculptor.[61]

Thus, while the statues were on display in Boston prior to their exhibition at the Chicago World's Fair, the reporter observed that women seemed to be either angry with Sargent for such a depiction, or skeptical about the accuracy of his statistical renderings. Others thought it was accurate and believed it spoke to the need for women's physical training. One writer observed, "[T]he back is hollow, like the back of most American women, and the waist so very weak that it looks as if it might easily break off."[62] He blamed the "unhygienic" use of "tight lacing" and thought that a copy of the statues should be sent to every girl's school as an "object-lesson."[63]

The diverse opinions regarding the female statue illustrate the different attitudes regarding female health and gender of the late nineteenth century. This statue appeared at a time when women were overcoming conventions of weak womanhood by participating in athletics, cycling and other physical activities which called for looser clothing. It depicted the naked body of a woman released from extensive undergarments and clothing of the late nineteenth century. Thighs that were always covered with a full skirt seemed rather large, the waist which was tightly- corseted seemed weak, and the chest without undergarments appeared to take on a bizarre, unattractive shape.

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[61] "Far from the Ideal," 2.
[62] Livermore, "The American Girl," 307. See also, Mabel Haydn, "The Spider-Waisted Girl," *Werner's Magazine* 16no. 10(October, 1894):366.
[63] Ibid., 307.

When faced with censure that the female statue was unattractive or inaccurate, Sargent stated people were "hasty in criticizing" and he revealed more about his data, stressing that the women he measured were unmarried. If he had included married women in his measurements, he thought it might have proven more attractive "because you might call married woman a picked class," since "a man selects a woman for a wife because her beauty first attracted him."[64] He also revealed that working-class women were part of his large pool of examined specimens. While the statues were entitled "Typical College Student" and most other sources claimed that it was a typical female student, comprised of measurements from females from Harvard Annex, Wellesley, Vassar, Smith and other institutions, Sargent indicated that the statistics he used were not entirely compiled from examinations of college women but, that he had included measurements from "shop girls, domestics and from the girls I found in various schools and colleges, all unmarried."[65] Thus, in Sargent's view the statue might not have been the most appealing rendering of womanhood because the women he measured were not married. Even as he revealed that he included working-class women in his measurements, what was most important to him was the marital status of the women in the sample.

There was also confusion among the public regarding the use of typical, average and ideal measures. One title of an article on the statues reveals the lack of clarity: "The Typical Man and Woman of America: Dr. Sargent Incorporates in Two Beautiful Statues the Characteristics of the Ideal Man and Woman as a Result of Thirteen Years of Experiment." Another writer considered the merits of the average against the ideal, and found that "there is a certain ideality in the average. Take an average vast enough, broad enough to comprehend

[64] "Far From Ideal," 2.
[65]Ibid., 2; Stone," The Typical Man and Woman of America" 710; T.W.H. "Women and Men," 39; Sara Annie Burstall, *The Education of Girls in the United States* (London: Swan Sonnenschein & Co, 1894),150.

Nature, and you already approach an ideal."[66] Stressing that his project was based in science rather than art, Sargent emphasized that these were statues comprised of averages and were not idealized, although he did think that the female approached the Greek standard.[67] He speculated, "[P]erhaps we should find that the average Greek was not much better developed than we ourselves."[68]

In the 1890s, Sargent also gained publicity by measuring famous strong men such as the boxer James Sullivan and the famous body-builder and performer, the newly-arrived Prussian muscle-man Eugen Sandow, born Friedrich Müller.[69] Sargent found Sandow to be "the most wonderful specimen of man I have ever seen. He is strong, active and graceful, combining the characteristics of Apollo, Hercules, and the ideal athlete."[70] Sargent was so impressed that he declared to the reporter, "I shall be glad to have him come and lecture before the students of Harvard."[71] In 1901, Sandow sent a cast of his nude body to Sargent to be displayed at the Hemenway Gymnasium. Ever the promoter of physical training for the disinclined, Sargent stated it "will be a treat for them to see a man of his physical development, and will doubtless act as a stimulus. It is a curious fact that a very strong man always has a host of imitators."[72] While it is clear Sargent admired Sandow's strong musculature, he did not stray from his beliefs in symmetry and health. Unlike other strongmen, Sandow was distinguished by his voluntary control of his muscles so there is "very little energy wasted."[73] Indeed, Sandow was described as

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[66]"Point of View," 130.
[67]T.W.H. "Women and Men," 398.
[68] "Far from the Ideal" 4.
[69] For a discussion of Sargent's work with Eugen Sandow see Kasson, *Houdini, Tarzan and the Perfect Man*; David L. Chapman, *Sandow the Magnificent: Eugen Sandow and the Beginnings of Bodybuilding* (Urbana: University of Illinois Press, 1994).Sargent conducted a physical examination of Sullivan which was included in his book, John Lawrence Sullivan, *Life and Reminiscences of a 19th Century Gladiator* (Boston: Jas A. Hearn & Co., 1892)
[70] Sargent quoted in *New York World*, reprinted in G. Mercer Adam, *Sandow on Physical Training; A Study in the Perfect Type of Human Form* (New York: J. Selwin Tait & Dons, 1894):121.
[71]Ibid., 121.
[72]Ibid., 122.
[73]Ibid., 121.

a "human motor" who was able to maintain "the most perfect command of his powers," while lifting heavy weights with "little or no drain upon the nervous system."[74] Sandow showcased his knowledge of anatomy by identifying muscles by name. He was not merely a strongman, but cultivated the reputation of a gentleman and exhibited grace, proportion, and efficiency in his movements. [75]

An Inclusive System of Training

Despite his admiration of Sandow, Sargent generally shunned the 'strong man' type and sought to spread training to all members of society in an accessible way. His was not an elitist system that sought to enhance the physique or talent of a favored few, but a democratic system that aimed to improve the mind and body of the whole population through regulated, informed training. A key element of Sargent's system was that he viewed it as an avenue for opening up physical training to many more people. He frequently explained how gymnasiums of the past were outfitted solely with heavy equipment, which were difficult to use, required strength and mastery at the outset, and discouraged the weak and unskilled from any type of participation. His system suited non-athletes and he encouraged its wide use among adults and children of both sexes. Moreover, he targeted the "scholarship students" at colleges, who he believed deserved more opportunities for physical activity. While he was not radically progressive in his views, he generally avoided racially charged language and allowed African-Americans to attend his training schools.

[74] G. Mercer Adam, *Sandow on Physical Training; A Study in the Perfect Type of Human Form* (New York: J. Selwin Tait & Dons, 1894), 175.
[75] See Kasson on Sandow's cultivation of a gentlemen persona which set him apart from the "strong man" type of performer. John F. Kasson, *Houdini, Tarzan and the Perfect Man,* Chapter 1.

At the time that Sargent was beginning as a professional, German gymnastics and heavy lifting were in vogue for young men. George Winship's health-lifts, which encouraged the lifting of hundreds of pounds, were "in every home and in every office."[76] He told the physical education convention in 1920, "I want to tell you that my nearest rival at Harvard when I took the position there in 1880 was a man running a health-lift establishment in Lowell."[77] In 1883, he contrasted his machines with the apparatus which were currently in use in many college gymnasiums. Among these items was a seventy-five pound canvas "sand-bag" which, after only minimal use "removed the skin from every knuckle, and makes an impression that lasts for a life-time."[78] There were tarred ropes which were, "never used twice by the same person," and weights that were kept in a trough filled with sawdust and dirt. "Every movement is accompanied by a cloud of dust and a deafening rattle and bang."[79] Much of the equipment was "crude appliances that have been handed down in stereotyped forms for several centuries."[80] A person that could not lift his or her own weight was subject to "strains and injuries, and the enormous expenditure of nerve-power necessary to keep his muscles up to their highest tension."[81] With such "heavy, cumbersome and in many cases perilous apparatus," which students used "hap-hazard," it was not surprising that very few students were inclined to use these gymnasiums.[82]

These traditional gymnasiums offered people activities that often proved uninteresting, and possibly embarrassing and harmful. Sargent observed that many people found such

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[76] Dudley A. Sargent, "Informal Addresses Give at the Banquet, New York Convention, April, 1920," APER 25 no. 8(November, 1920): 363.
[77] Ibid., 363.
[78] Sargent, "Physical Education in the Colleges," *North American Review* 315(February, 1883):174.
[79] Ibid., 174.
[80] Sargent, "Apparatus of the Hemenway Gymnasium" *The Harvard Register* 1 no. 3(February, 1880):44.
[81] Ibid., 44.
[82]Sargent, "Physical Education in the Colleges," 174. See also, Sargent, "System of Training at Hemenway Gymnasium," 66; "Proportions of a Typical Man," 9.

apparatus work "distasteful" and a great number would not "use apparatus requiring a high degree of skill, or engage in maneuvers that will bring them into unfavorable comparison with the performances of others."[83] Another equally large proportion of gym-goers "could not go through the regular exercises on the parallel bars and other pieces of heavy apparatus without doing themselves harm, or failing to get the benefit."[84] Instead of this system, or lack thereof, in which only the naturally athletic excelled, Sargent's system included informed and supervised exercise for all students. With their anthropometric charts, the student did not have to face embarrassment in competing with others but "can now compete against himself, that is, with his own physical condition from week to week and from month to month."[85] Everyone was capable of using his adjustable machines to build their bodies and thus their inclusion in gymnasiums, "has opened up the possibility of the gymnasium to thousands to whom it was formerly an institution of doubtful value."[86] Physical training was thus individualized, and democratized, open to those who were not naturally strong or inclined to skilled athletics. Moreover, students also became aware of their development and were urged to keep track of their personal progress, creating a new, scientific health consciousness.

A strong advocate of exercise for women, Sargent considered apparatus work in the gymnasium to be "of the greatest importance to women and children."[87] He believed his exercises were well- suited for those that were new to exercise and for building up particular weaknesses. Women, more so than men, had to exercise their abdominal muscles because of "evil consequences of this silly fashion of constricting the waist."[88] Sargent also emphasized

[83]Sargent, "The Gymnasium of a Great University," *The Cosmopolitan* 9(May, 1890):45.
[84] Ibid., 45.
[85] Sargent, *Physical Education*, 138.
[86] Ibid., 138.
[87] Sargent, "Appropriate Exercise for Girls of the School Age," *American Gymnasia and Athletic Record* 1 no.2 (October, 1904):10.
[88] Ibid., 11.

how his machines could be used any time of the year and that they "allow freedom of dress, and a certain amount of privacy, which cannot be secured on open playgrounds."[89] He suggested that women use wands, dumbbells, chest-weights, swings, ladders, ropes, bars, and heavy gymnastic apparatus, in addition to leisurely recreation in rowing, swimming, dancing, cycling, horse-back riding, and team sports such as cricket, baseball, basketball, field hockey, hand ball, squash and tennis. Similar to his suggestions for men, these recreational activities were useful as long as they did not create deformities or strain from overwork and extreme training.

In addition to touting the benefits of exercise for women, Sargent claimed that women could and should participate in heavy apparatus work, such as rings and the bars in which people had to support their own weight. In this case, Sargent stood out from many other physical educators of the time who disapproved of these exercises for women on the grounds that they were unladylike and possibly harmful. Luther Gulick stated that he had tried to teach women heavy work, but it went "miserably" in comparison to his work with men. He even commented that women that excelled in such work "were, as a class, as I recall them, not the kind of women who seemed to me most womanly. Their shoulders, as a class, were too heavy; and (I will admit this is utterly unscientific, but as simply from a man's standpoint,) their hips are too small."[90] To this comment, made at the meeting of the AAAPE in 1894, Sargent replied, "[F]or a long time I shared the objections of a great many persons to heavy gymnastics for women. In my younger days I looked upon women from perhaps a more romantic point of view than at the present time. They were such delicate creatures, I thought, it was entirely brutish to ask them to circle a bar, or

[89] Ibid., 10-11.
[90] Luther H. Gulick, "Comment," *Report of the Ninth Annual Meeting of the AAAPE*, 1894 (New Haven, Conn.: Press of Clarence H.Ryder, 1894): 51.

to hold their weight between parallel bars."[91] But, he found that when women began such work, "they began to develop a considerable degree of efficiency …and gradually we have felt our way along until now the heavy work becomes a very essential part of our curriculum."[92] He asserted that men and women's muscles were not all that different and that "no muscles are found about the construction of the joints of the arm and chest that are peculiar to her."[93] If a woman carried her weight in the lower portion of her body, she would have difficulty supporting herself just as a man would who was built in that way. He concluded that, "[W]e must conduct this question of heavy gymnastics with caution, because women for a long time have been shackled by inappropriate clothing. As far as the movements go, there is nothing in the line of gymnastics, which some women cannot do with just as much readiness as some men, and I do not think that, outside of the so-called esthetic standpoint, there are any physiological reasons why women should not do most things that men do."[94] Thus, his thinking about exercise at this time, the important division was not between male and female, but weak and strong, and many women proved to be up for the task. According to Van Dalen and Bennett, Sargent "demonstrated that women could engage in chosen gymnastic exercises and outdoor sports without physiological harm."[95]

However, Sargent was not a complete gender egalitarian. In 1904 he voiced views that were more conservative. It was inappropriate, he wrote, to "insist upon girls playing violent athletic games under the same rules and regulations that govern the contests of boys" or "to put

[91] Dudley A. Sargent, "Comment" *Report of the Ninth Annual Meeting of the AAAPE*, 1894 (New Haven, Conn.: Press of Clarence H. Ryder, 1894): 54.
[92] Ibid., 54.
[93] Ibid., 54.
[94] Ibid., 54.
[95] Deobold B. Van Dalen and Bruce L. Bennett, *A World History of Physical Education: Cultural, Philosophical, Comparative* 2ed. (Englewood Cliff., N.J: Prentice Hall, Inc., 1971 [1953]),401

them through the same vigorous method of training."[96] He thought this was "not only cruel to the girl, but it is suicidal to the race."[97] The type of woman which would succeed in these sports would not "be noted for its feminine graces either in figures, manners or accomplishments."[98] While females had a great physical capacity and could practice heavy gymnastics, it was not socially desirable for them to play aggressive athletics under the same rule as males and risk developing a roughness of character.

Sargent's general support of female physical education was clear from his serving as Director of the Sargent School for Physical Education. At first, it was co-educational, but women were in the majority, and soon it became predominantly a women's school. Moreover, he accepted women into his summer program at Harvard, which some authorities did not like. Hundreds of women obtained certificates from his program, including physical education leaders Delphine Hanna and Helen Putnam, giving them credentials to teach physical education at the college level. [99]

Towards the end of his career, Sargent maintained that women were becoming healthier and closer to perfect as they exercised more and eschewed corsets. In 1910, he held that women's hips had become narrower and waists had grown thicker over the past twenty years, but shot down criticism that this was making them "mannish." He was glad women were stepping away from "overfeminized" and "exaggerated" corseted womanhood to an ideal where "fashion plates" featured relatively "hipless" women with larger waists. [100]

While Sargent still spoke against the extremes of women taking on male characteristics and the "assimilation of the sexes," he was relatively open about women's place in the world.

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[96] Sargent, "Appropriate Exercise for Girls of the School Age," *American Gymnasia and Athletic Record* 1 no. 2(October, 1904):12.
[97] Ibid., 12.
[98] Ibid., 12.
[99] Lee, *A History of Physical Education and Sports,* 99-100.
[100] "Modern Woman Getting Nearer the Perfect Figure," *New York Times,* 4 December 1910, pg.SM4.

Sargent believed that women who took on men's work became coarse and masculine, but was open in his definition of appropriate women's work. He asked a reporter in 1910, "What is woman's work? How much of the work now done by man is not as rightfully hers as his? ... Why should she not have an equal chance to perfect herself physically, mentally and morally?" [101] As the United States entered World War I, Sargent also expounded upon the capabilities of women as soldiers. His declaration "that women could be made as fit for military service as men started a country-wide discussion."[102]

Sargent did not speak or write very frequently about the racial applications of his work. Historian Donald Mrozek has written: "To a considerable extent, Dudley Sargent shied away from casual and usually unfounded assertions about the relationship of heredity to performance in sport, of race to willpower, and a host of issues that roused the curiosity of many turners, psychologists, and politicians."[103] Notably, Booker T. Washington, Tuskegee President Robert R. Moton and Washington, D.C. physical educator Edward Bancroft Henderson attended Sargent's Summer School, reflecting that African Americans were permitted to enter.[104]

While Mrozek is correct that Sargent was not extreme in his racial views, concerns about race in the United States did appear in some of his work including a chapter he contributed to an 1897 compilation on America, titled "The Physical State of the American People," which he reprinted in part in his 1906 book *Physical Education,* and in a 1922 APER article, "Taking Account of Stock." In the former he speaks in terms of "quality of stock" and "infusion of

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[101] Ibid., SM4.
[102] "Woman's Fitness for Fighting," *Atlanta Constitution,* 12 March 1916, pg. D4. Also see "Women as Soldiers," *Washington Post,* 18 October 1917, pg. 6; "Brawn and Brain in Women," *The Posse Gymnasium* 27 no. 3 (September, 1919):5-6.
[103] Donald J. Mrozek, *Sports and American Mentality, 1880-1910* (Knoxville: University of Tennessee Press, 1983), 39-40.
[104] David Kenneth Wiggins, *Glory Bound: Black Athletes in White America* (Syracuse, NY.: Syracuse University Press, 1997), 221; "Forty Years of Dr. Sargent," *Harvard Alumni Bulletin* 21 no. 32 (May 15, 1919):653.

foreign blood."[105] Eight pages explored the settlement of North America in terms of race, while twenty-one pages are about his major idea that the health of Americans declined because of the shift in occupations due to industrialization. The latter piece was also about the effects of urbanization, yet he did take into consideration that "the best blood of our native rural communities flows towards the cities" and that the Midwest boasted physical health in the WWI draft because many New Englanders moved west "and thus have contributed their share with the Nordic races of Europe."[106]

Sargent also spoke at a 1914 forum called the First National Conference on Race Betterment held at Battle Creek, Michigan. He did not support negative eugenics and his contribution lacked heated racial rhetoric. Sargent noted a contradiction between hygiene applied to the individual, versus hygiene of a group or race. Individual hygiene "strives to conserve the life of even the most wretched human being, but the hygiene of the race has for its ultimate aim the elimination of those of weak constitution for the improvement of the people as a whole." He looked toward "individual improvement" through physical training as a means to influence the health of the whole, rather than elimination of the weak. Moreover, in grappling with the "declining birth rate in most civilized countries" he did not differentiate between class and ethnic group as others did who had nativist tendencies. He held that declining birth rates "are unfortunately justifiable in the light of our social and economic conditions" and supported the work of mother's pensions and child welfare agencies.[107]

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[105] Sargent, *Physical Education*, 23; This was reprinted from Nathaniel Southgate Shaler, ed., *The United States of America: A Study of the American Commonwealth, Its Natural Resources, People, Industries, Manufactures, Commerce, And its Work in Literature, Science, Education and Self-Government II* (New York: D. Appleton and Company, 1897): 452-475.
[106] Sargent, "Taking Account of Stock," APER 27 no. 2 (February, 1922):48.
[107] Sargent, "The Relation of Physical Education to Race Betterment," *Proceedings of the First National Conference on Race Betterment* (Battle Creek, Michigan: Gage Printing Company, 1914):104-106.

Perhaps another sign that Sargent was not that taken by notions of scientific racism was his declaration that a young dock-worker, who happened to be mulatto, was one of the most well-developed people he had seen. In 1903, the *San Francisco Chronicle* reported that Sargent measured Thomas E. White and found him to be "the finest living example of physical culture known" and "more perfectly developed than the Apollo Belvedere."[108] Interestingly, the article stated that White achieved his physical attributes not only through his physically laborious job, but through a system of training including work with pulleys, weights, dumbbells, and parallel bars.

Sargent and many of the leading physical directors sought to involve people from all social groups. This is clear in their concern for the effects of the division of labor on society, yet it also applied to the various segments of the college population. Indeed, Sargent's wish to attract scholarship students, assiduous "grinds," and those who were not accustomed to physical activity and sports, can be seen in class terms. Prior to 1880, college athletics were often the province of the wealthier students because teams often made players pay to play.[109] Moreover, wealthier students had more leisure time to play sports since they did not need to work during college. Part of Sargent and other physical educators' goal of regulating college athletics, instituting required physical training, and creating intramural sports was to provide less wealthy students with access to beneficial, supervised physical training opportunities.

Sargent's colleague William Blaikie, as well as his student, R. Tait McKenzie, who taught at the University of Pennsylvania, both expressed a concern for the health of the working class. McKenzie urged physical educators to "be devoted to the average man, coming from the farm, the office, the factory, the shop, or the school, with no athletic ambitions, but wanting to

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[108] "More Perfect than the Apollo Belvedere," *San Francisco Chronicle,* 22 June 1903, pg. 11.
[109] Paula D. Welch and Harold A. Lerch, *History of American Physical Education and Sport* (Springfield, Ill.: Charles C. Thomas, 1981), 201.

make every moment of his time count."[110] Blaikie understood that "[T]he woman who works steadily from early morning till well into the night, especially at employment at all sedentary and confining, is undergoing a test and a hardship which will certainly call for a strong constitution, good condition, and a brave spirit as well, or the strain will surely break her down, and bring to her permanent weakness."[111] While the rich might spend four or five hours a day at leisure or take vacations and go "Alpine climbing," working people did not have the luxury. Blaikie suggested several intervals throughout the day when "three or five minutes could generally be spared for a few brisk exercises calculated to limber and call into vigorous action the back, and the many of the muscles so long held almost motionless until they stiffen."[112] Fast-paced walking was also suggested for its mental as well as physical effects. For men who were busy at sedentary work, he also suggested trying to exercise for "even sixty seconds" each hour.

Additionally, Blaikie provided instructions on how to cheaply construct pulley-weight machines similar to Sargent's.[113] With this homemade bars and pulley-weight machine, he suggested adding dumb-bells amounting to 1/25 of the persons' weight.[114] He claimed that "[H]ere is a gymnasium, then, under cover, rent free, exactly at hand, when one is lightly clad on rising or just before retiring, which takes up but little room, can hardly get out of order, which will last a dozen years."[115] These home gymnasiums, Blaikie asserted, were suitable for all family members, young and old.

The democratic tone of this physical education endeavor was a basic element of Sargent's system. In espousing physical education for women, children, and people of all classes, Sargent

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[110] R. Tait McKenzie, *Exercise in Education and Medicine* (Philadelphia: W.B Saunders Company, 1910), 178.
[111] Blaikie, *How to Get Strong*, 68.
[112] Ibid., 68.
[113] See also Anthony Barker, "Physical Training at Home," in *Athletics and Out-door Sports for Women*, ed., Lucille Eaton Hill (New York: Macmillan Company, 1903): 17-34.
[114] Blaikie, *How to Get Strong*, 95.
[115] Ibid., 96.

hoped to raise the health of the entire population. His ideas also put him at odds with competitive intercollegiate sports, at a time when they were becoming increasingly popular at American colleges.

Ethics, Energy and Elitism in Competitive Sports

While supportive of recreational activities, Sargent was very critical of highly competitive sports and spoke out against intercollegiate football throughout his career.[116] Sargent's criticism incorporated three interrelated themes. First, competitive sports were elitist because they only included a small percent of the student body that had natural strength and ability. Colleges often spent thousands of dollars on these teams while not providing resources for the majority of students. Secondly, Sargent lamented that sports were often commercialized, corrupted and marred with violence and poor sportsmanship. Lastly, the requirements of heavy competition led students to specialize in sports and even certain events and positions, leading them to develop certain body parts at the expense of others. Such narrow training and focus on victory also led to over-exertion and possible nervous collapse.

Sargent sought to spread his system of training to the entire student body as athletics became increasingly exclusive and expensive. In 1895, he wrote in a medical publication that Harvard and Yale spend over fifty thousand dollars yearly to employ thirty athletic trainers and coaches to work with fifty top athletes while "the departments of physical training in each institution are spending one-fifth of that sum, and have one-fifth that number of men, to look

[116]Dudley A. Sargent, "The Regulation and Management of Athletic Sports," *Proceedings of the AAAPE at Its Seventh Annual Meeting*, 1892 (Springfield, Mass.: Press of Springfield Printing and Binding Co., 1893):97-114; Sargent, "History of the Administration of Intercollegiate Athletics in the United States," APER15 no.4 (April, 1910):252- 261.

after the physical training of the remaining students— 98 per cent., or about 3000, at Harvard University."[117]

Although Sargent's system became widespread throughout the country, at Harvard it never grew into the department Sargent had wanted it be become. In 1919 a writer for *Harvard Alumni Bulletin* claimed that as the gym became "more popular, lack of money and cooperation hindered natural growth." The gymnasium had been appropriated $12,000 for years, "while other parts of the University have received more money as they have progressed."[118] Additionally, Sargent hoped that physical education would become compulsory and be deemed worthy of academic credit. He noted in an unpublished document: "Physical training in its best sense is applied Hygiene or Biological Engineering, and a man should certainly receive as much credit for reconstructing and moulding[sic] his own body as for fashioning a piece of wood or iron"[119]

Such uneven funding and undue focus on competitive sports exacerbated the condition of uneven development of the mind and body. In 1883, Sargent concluded that the campus was divided into four different types of students: athletes, sporting men, scholars and idlers. Athletes were the skilled and strong men on campus, who did not spend much time at their studies, and sporting men were the avid spectators who were not skilled enough to participate. Idlers were not motivated by pursuits of the mind or body. Scholars usually found physical exercise "irksome" and were "invariably brooding over some lesson or problem."[120] Yet, a small number did exercise systematically out of a sense of duty and participated in Sargent's idea of exercise as a "wholesome discipline." "Such men are often called machine-workers," Sargent observed, "but

[117] Sargent, "Physical Training vs. Athleticism," *Medical News* 66 no. 25(June 22, 1895):709-710.
[118] "Forty Years of Dr. Sargent," *Harvard Alumni Bulletin* 21 no. 32 (May 15, 1919): 655.
[119] Dudley A. Sargent, "To the President of the University," 14-A, Sargent Correspondence, Financial Records, Personal History, Dudley Allen Sargent Papers, Harvard University Archives
[120]Sargent, "Physical Education in Colleges" *North American Review*, 170-171.

they are the ones who profit most by their exercise, because they take it regularly and make it subservient to their highest aims."[121]

Extreme competitiveness ruled the athletes as well as the "scholarship student" or "grind." Sargent observed that to attain their positions, both groups focused exclusively on either body or mind, making competition "the arch-enemy of all true culture, mental as well as physical."[122] He sought to pass regulations that athletes must maintain grades and scholarship students must have certain health standards. By 1902 the university found it fair to require certain standards for students receiving financial assistance, mandating that they be examined periodically, while those with adequate resources were subject to less regulation.[123]

According to Sargent and others in the field, college sports unleashed immoral behavior. Far from exemplifying gentlemanly conduct, college sports fostered intense rivalry and an "anything to win" spirit, frequently leading to the dehumanization of opponents and poor sportsmanship. By "attributing diabolical qualities to an opponent" the players justified, "trying to 'do him up' or 'to put him out of the game.'"[124] Sargent considered this to be, "simply remnants of primitive characteristics possessed by our early ancestors."[125] Taking a cue from evolutionary biology, he reasoned that in order to fight opposing tribes in a prehistoric society, the early humans attributed negative or evil characteristics to these opposing groups. This primitive disposition was visible in athletes as well as in spectators from the college community and the home city. At college games, "grave and dignified professors rush up and down the side

[121]Ibid., 171.
[122] "Scholarships and Physical Training," *Harper's Weekly* 52(January 11, 1908):6; "Poor Physique of High Scholarship Students," *Boston Medical and Surgical Journal* 158no.1 (January 9, 1908): 65.
[123] "How Weak, Narrow Chested, Consumptive Looking Men are Transformed into Models of Strength and Grace," *New York Tribune,* 2 December 1902, pg. A3.
[124] Sargent, *Physical Education,* 289.
[125]Ibid., 289.

lines of the football field shouting 'down him,' and 'kill him'" while "delicate ladies…with flushed cheeks and staring eyes wildly shriek their approval."[126]

In 1882, he served as one of three members of the Standing Committee on the Regulation of Athletic Sports in Harvard University, which roundly condemned competitive intercollegiate football as it was then practiced. [127] Sargent cited several games between Yale, Princeton and Wesleyan where "an average of two men per game were taken out unconscious from fisticuff fights between players, and one such fight had to be stopped by the police and spectators."[128] In 1885 the Committee asserted their power to ban the sport for a year.[129] Many faculty members and some Harvard alumni opposed such approbation and seemingly pressured Eliot to dismiss Sargent. In his study of Sargent, Bruce Lanyon Bennett wrote that he was demoted from the rank of Professor to Director of the Hemenway Gymnasium after this incident.[130]

Even though the alumni believed Sargent's views warranted demotion, his concerns were not anomalous. Indeed, the level of violence in football was an important topic in late-nineteenth and early-twentieth century college life.[131] In Massachusetts the sentiment seemed particularly strong in the 1890s. N.S. Shaler, a professor of Geology at Harvard, claimed that "the most serious evils connected with athletic sports arises from the wild celebrations with which victory in important contests is received. All our larger colleges suffer from this evil."[132] Harvard's president Charles Eliot was also a great critic of the game, and called college sports

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[126] Ibid., 289-290.
[127] "The Athletic Committee" *The Harvard Alumni Bulletin* 14 no. 13(January 3, 1912):196.
[128]Lothrop Withington, "Football in 1910," *The Harvard Monthly* 51 no. 2(November, 1910):46.
[129] Ibid., 46.
[130]Bruce Lanyon Bennet quoted in J. Edmund Welch, *A Physical Education Reader: History and Foundations* (Parsons, W.Va.: McClain Print Co, 1974), 51.
[131] See Watterson, *College Football,* James L. Patterson, "Athletic and Oratorical Contests" *University of the State of New York Regents Bulletin, 35th University Convocation, June 28-30, 1897,* 224-229; Paul C. Phillips, "Faculty Control by Physical Director" *American Gymnasia and Athletic Record* 2 no. 4 (December, 1905): 78-79; R. Tait McKenzie, "Systematic Physical Exercise for College Students," *Second International Congress on School Hygiene, London, 1907, Transactions Vol. 1* (London: William Clowes and Sons, Limited, 1908): 273-276.
[132] N.S. Shaler, "The Athletic Problem in Education," *The Atlantic Monthly* 63(January, 1889): 86.

"an enormous exaggeration of anything desirable in the form of physical training."[133] In 1892 a member of the Massachusetts House of Representatives sought to criminalize anyone who played football before spectators or who played violently.[134] At the University of Michigan, V.C. Vaughan encountered an athlete, who was "naturally a man slow to anger" in everyday life, but on the football field proved to be "very violent." This player told Vaughan that "he never entered a football contest that he did not feel like tearing his opponents to pieces." Vaughan declared that football was a "brutal" game that should not be played in colleges.[135] James H. McCurdy, working at the YMCA Training School suggested several reforms to the game, including decreasing the use of "brute force," minimizing danger, and decreasing "the physical shock to players of mass plays."[136]

Physical educators were unhappy when their craft was lumped together with college athletics and they sought to distance their field from them. William G. Anderson wrote in 1896, that "[T]he stigma resting on athletics is made to cover gymnastics, the abuse heaped on the former spills over on the latter, while the Press makes no distinction between the two."[137] Negative publicity of college sports had made people "thoughtlessly censure athletics and gymnastics alike."[138] While only ten percent of Yale students actually played sports there was, "a large percentage …of students about whom little is known outside, but who are being built up day by day by a scientific and well-tested process."[139]

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[133] Charles W. Eliot "Comment," APER4 no.2 (June, 1889):230.
[134] John Sayle Watterson, *College Football: History, Spectacle, Controversy* (Baltimore: Johns Hopkins University Press, 2000), 27.
[135] V.C. Vaughan, "Comment," *Sixtieth Annual Report of the Superintendent of Public Instruction of the State of Michigan with Accompanying Documents for the Year 1896* (Lansing: Robert Smith Printing Co., 1897): 333.
[136] J.H. McCurdy, "Solving the Athletic Problem," *American Gymnasia and Athletic Record* 2no.4 (December, 1905):82.
[137] William G. Anderson, "Physical Training at the Universities," *The Cosmopolitan* 21 no.1 (May, 1896): 62.
[138] Ibid., 67.
[139] Ibid., 67,

Jay Seaver blamed the immorality of sports on the growth in the employment of athletic trainers in the 1880s and 1890s. Not only did trainers focus too much on winning, but they were also not well-educated in medicine. He called attention to one trainer with no medical background who gave the powerful drug digitalis to runners at his institution; another which newspapers dubbed "the greatest trainer in America" who was known "to be not only immoral himself but to be advising immoral practices for the young men in training."[140] Seaver hoped that colleges would only employ trainers with adequate educational, technical and medical training as well as good character.[141]

By the early 1900s, Sargent became more supportive of sport in general, but still opposed excess. He also continued to stress that students choose sports which would develop weaknesses.[142] He emphasized the need for athletics to be regulated by someone that was interested in the balanced health and regulation of the whole mass of students, not by administrators, trainers and coaches that sought victory and money from ticket sales. In 1909, he compared unregulated competition in athletics with a laissez-faire economy stating: "As unregulated competition is not the life, but the death of trade, so unregulated competition in sports tends not to be their preservation but to their destruction."[143] In order to increase participation, Sargent sought to "make competition in all sports less intense and more diffusive."[144] He insisted, "[L]et us give less attention to the exploitation of the strong, and more attention to the instruction of the weak."[145] Thus, Sargent saw his system as a way to spread attention on physical training to non-athletic students. In this way, he saw it as more fair and

[140] Jay Seaver, "The Athletic Trainer," APER4 no.2 (June, 1889): 225,228-229.
[141] Ibid., 229.
[142] Mrozek, *Sport and American Mentality*, 37.
[143] Dudley A. Sargent, "Competition and Culture," *National Education Association Journal of Proceedings and Addresses* 48 (Printed by the University of Chicago Press, 1910):225.
[144] Ibid., 225.
[145] Ibid., 228.

democratic, while sports at the time were "unregulated," subject to corruption and available only to the physical elite among the students. Through the use of anthropometry and his pulley appliances, all people could attain their best bodies, if only they had the discipline and the will to do so.

While these various concerns regarding funding, morality and participation revolved around the way in which sports were conducted, many physical educators also considered the effects of sports upon the body. They held that sports could create unbalanced bodies, and that athletes often overexerted themselves, leading to the development of nervous exhaustion, "collapse" and early graves. They were among the first to connect athletic over-training to the American Disease. However, if sports were regulated, and taken in moderation, most physical educators thought they could be a legitimate and healthy form of exercise and character training.

Sargent was convinced that football in particular was taxing the nervous system of students to an extreme and unhealthy degree. To understand his explanation fully, we must consider Sargent's view of physical education as a broad concept with four aims which he labeled: hygienic, educative, recreative [sic] and remedial. The first aim included the "self-preservation and personal well-being," through teaching hygiene, individualized exercise, prevention of diseases and maintenance of a standard of bodily health. The educative aspect was directed towards acquiring certain skills such as athletics and horsemanship while the remedial aim involved curing deformities. His definition of recreation was essential to his philosophy of physical education because such physical exercises were supposed to result in "a renovation of the vital energies."[146] He did not conceptualize recreation as a mere pastime, taken for pleasure, "but an act of duty undertaken for the sake of the subsequent power which it generates and the

[146] Dudley A. Sargent, "The Harvard Summer School of Physical Training," *Boston Medical and Surgical Journal* 134 no.8 (February 20, 1896):182.

subsequent profit which it insures. Recreation, therefore, may be defined as that which, with the least expenditure of time, renders the exhausted energies most fitted to resume their work."[147]

In light of these principles, Sargent stressed that many games of skill, involving mental acuity as well as muscular activity, emphasized the educative aim and neglected the hygienic aim, so that the individual "draws heavily upon the same supply of nerve force which sustains him in his mental pursuits, and by thus burning the candle at both ends is likely to break down from nervous exhaustion."[148] If games were played to the point of exhaustion, the recuperative quality was nullified. Sargent declared football to be one of the most taxing sports because, "most of the participants probably expend more nervous energy upon this sport than upon all their courses combined."[149] He stressed that members of the crew teams were often forced to leave college due to poor health to "rest and recuperate from the effect of their 'recreation.'"[150] When someone participated too intensively in sports they were liable to become "overtrained" and "the extreme mental activity relapses into mental dullness or into nervous irritability and lack of control, the weight falls off and the muscles cease to develop, the heart may become enlarged or unduly dilated, the lungs become congested, the stomach refuses to do its work and the whole man is upon the verge of a general collapse."[151]

This concern for overtraining and neurasthenia in college was circulated through educational and medical channels.[152] One doctor held that "[M]any athletes and prize fighters

[147]Ibid.,182.
[148]Ibid.,181.
[149] Ibid.,182.
[150]Ibid., 182.
[151] Sargent, "Athletics in Secondary Schools," APER 8 no. 2 (June, 1903):64.
[152] See also, E.L. Tompkins, "The Dangers of Excessive Physical Exercise," *New York Medical Journal* 52 (Nov. 29, 1890): 589- 595; Margaret A. Cleaves, "Discussion of Neurasthenia," *Journal of the American Medical Association* 30 no. 15 (April 9, 1898):831; "Exercise and Over-Exercise," *The Dietetic and Hygienic Gazette* 14 no. 12(December, 1898):771-772.

become neurasthenic by dint of too much muscular exercise."[153] A study of the Harvard Crew team found that overtraining could result in heart problems, poor digestion, fatigue, and nervous problems resulting not only from physical overwork. The writer stated that, "[I]t may be that anxiety about a coming contest, together with the prolonged mental strain of mastering the technicalities of such a difficult art as rowing or such a complicated game as football, may lead to a condition of nervous exhaustion, and that this nervous exhaustion contributes to overtraining."[154]

Sargent's counterpart at the University of Pennsylvania, A.H.P Leuf, also highlighted the problem of overtraining. Even at prep schools, "there is a large element of risk attached to the encouragement of these competitive sports" and students were "likely to suffer serious and permanent damage from overwork, *i.e.,* strain."[155] Leuf believed that upon leaving college, many former athletes suffered from neurasthenia because they had taxed their energies. After attaining lofty reputations, they had "so sapped their nervous or vital energies in the three or four years' excessive strain, that they had not enough left to ward off the common ailments…they had lost their ambition, and they were sick and could not get well; they were getting worse. What was the trouble? They had the great American disease called neurasthenia or nervous exhaustion."[156]

Besides taxing people's nerves, unregulated sports could lead to various types of bodily imbalance, the result of specialized rather than general physical activity. This was linked to the "natural selection" process in college sports; large and strong men were used for their strength in football or hammer-throwing, and tall, slender men served as long-distance runner and pole-

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[153] George F. Butler, "Neurasthenia," *Transactions of the Mississippi Valley Medical Association* 4(October, 1902): 348.
[154]Eugene A. Darling, "The Effects of Training," *Boston Medical and Surgical Reporter* 141 no.10 (September 7, 1899):233.
[155] A.H.P Leuf, "The Effect of Athletics in the Philadelphia Preparatory Schools as to Mental and Moral Character," *Medical News* 64 no. 14(April 7, 1894):368.
[156] Ibid., 370.

vaulters.[157] The former students needed to be made "more flexible, more graceful, more refined," while the latter had to gain weight and strength, yet "sacrifices his opportunity to develop himself as a man in order that he may perfect himself as a high jumper, pole vaulter, or some athletic specialist."[158] Specialization in a certain sport and intensive training tended to develop people "to the extreme" resulting in "sometimes a prodigy but more often a failure."[159]

The increasingly popular activity of cycling also posed risks. Sargent spoke of an avid cycler who neglected his upper body. Despite Sargent's advice to take more balanced exercise, the student focused on winning bicycle races, developing his legs at the expense of his chest, which Sargent connected to the student's death from consumption within two years of graduation. He wrote that "the young man could have been saved from an early grave if he had devoted more attention in his college days to the development of his lungs and chest."[160] While Sargent diplomatically praised bicycling for encouraging inactive people to exercise, he believed that it could cause uneven development, "malformations" in children, and if done improperly "a permanent drooping of the head, elongation of the neck, rounding of the back and flattening of the chest, all physical defects which are now far too common."[161]

Many doctors and physical educators agreed with Sargent and Leuf about the potential injury and poor health resulting from intensive sporting practices. In 1897, V.C. Vaughan expressed this view: "I believe it is true that the average life of the college athlete, so called, is very short; that he dies before he reaches middle life from diseases of the heart or kidneys."[162]

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[157] Sargent, "Competition and Culture," 226.
[158] Ibid., 226.
[159] Sargent, "Physical Characteristics of the Athlete," 560.
[160] Sargent, "The Inomotor," *Journal of the Boston Society of Medical Science* 5 no.8 (March 19, 1901):399.
[161] Ibid., 400.
[162] V.C. Vaughan, "Comment," *Sixtieth Annual Report of the Superintendent of Public Instruction of the State of Michigan with Accompanying Documents for the Year 1896* (Lansing: Robert Smith Printing Co., 1897): 333.

Through the late nineteenth century to 1920, physicians also connected various sports to heart disease.[163]

From the writings of Sargent, Leuf, Seaver, and plethora physical educators, we see that they envisioned their field as distinct from intercollegiate sports. They touted scientific, supervised physical training as opposed to competitive athletics for several reasons. While regulated exercise in the gymnasium was thought to build up a man or woman's weakest parts, and contribute to overall health of the body and mind, unregulated sports were seen as producing moral depravity, uneven bodies and weak nerves. However, over the course of his long career, Sargent experimented with forms of training that would appeal to his students in the same way that sports did. This led to the rise of intercollegiate strength tests and the training machine called the inomotor.

Strength Tests and Inomotors

In the late 1880s, Sargent began to experiment with strength tests in order to discover what actually made some people perform better than others and to interest students in their physical development. He was pragmatic in realizing that students thrived in competition with others, rather than just themselves, so he began to use competition in his physical training activities. Thus, he took part in making strength tests competitive and, in 1901, he developed the inomotor, which served a similar purpose of making adequate physical development subject to competition.

[163]James C. Whorton, "'Athlete's Heart': The Medical Debate over Athleticism, 1870-1920," in *Sports and Exercise Science: Essays in the History of Sports Medicine,* eds., Jack W. Berryman and Roberta J. Park (Urbana: University of Illinois Press, 1992):109-136. Whorton thinks that in the second half of the twentieth century, this distinction was reversed, and athletics were seen as a way to produce healthy hearts.

Sargent realized that he might have to compromise his principle of exercise as a duty and frame training as a competition with others. Ideally, he still held as his ideal those with "sufficient morale" who did not need to make training a competition. They were able to have discipline and "hold themselves down to a particular line of work in order to insure their physical improvement, and prepare themselves for the anticipated joys and pleasures of a useful life."[164] Preferably, all people would seek physical development as a means towards efficiency in work and overall health in life. These people would not need the extra impetus of competition for motivation in disciplined exercise; they would internalize Sargent's ideals and practice training on their own. However, after twenty years in the gymnasiums, Sargent realized that formal training exercises were "apt to become a little monotonous to persons who feel that they must have some immediate object in view, like a real or imaginary opponent, in order to induce them to make any earnest physical effort."[165]

The Intercollegiate Strength Test began in 1898, and had grown out of the practice of anthropometry in colleges. In developing the Strength Test, Sargent had reasoned that girths of muscles would simply not reveal the actual physical power of the individual because these girths can include fat as well as muscle. He averred that, "there is in the composition of many individuals an unknown equation that makes for strength."[166] It was this "unknown equation" that he sought to measure in his various incarnations of tests for strength, endurance and efficiency, over his forty years at Harvard. He exhibited a similar inquiring zeal in his anthropometric examinations to determine the "average student" as he did in conducting strength tests to be able to comprehend this "unknown equation."

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[164] Sargent, "The Inomotor," 396.
[165] Ibid., 396.
[166] Sargent, "Strength Tests and Strong Men at Harvard," APER 2 no. 2 (June, 1897):108.

The strength test committee, comprised of Seaver, Columbia's Watson L. Savage and Sargent as Chairman, created the guidelines for the test including several criteria. The first Intercollegiate Strength Test took into account the force of the back, legs, fore-arms, lungs, triceps and biceps. The legs, backs, and forearms were tested through the use of dynamometer. The spring manometer and spirometer were used to test the lungs. The power of the triceps was calculated by the number of times a person could lift himself on the parallel bars, using a "dip" motion, and the strength of the biceps was found by the number of times one could do a "pull-up" on a horizontal bar. The total strength was computed in a complicated way: "The number of kilos lifted with the back and legs straight, and the number of kilos lifted with the legs bent, added to the strength of the grip of the right and left hand, expiratory power as tested by the manometer, and one-tenth of the weight in kilos multiplied by the number of times that the person can raise his weight by dipping between the parallel bars and pulling his weight up to his chin on the horizontal bar."[167] It appears that when the Intercollegiate Strength Test was first instituted, lung capacity was measured, but not included in the strength total.

The strength tests were conducted at each university between October and May of the academic year. The apparatus and instruments used would be examined by officials before October and were to be made accessible to "the college community." The gymnasium directors were to publish the results of the top fifty men at the school, and the strongest man would be the champion, while the school with the strongest fifty students would receive a trophy for total strength. For each test at least three people had to be present to act as witnesses.[168] The colleges that competed were part of the College Gymnastic Association, which included Harvard, Dickinson, Amherst, Columbia, the University of Minnesota, Wesleyan, New York University,

[167] "Intercollegiate Strength-Tests," APER2 no. 4(December, 1897):219.
[168] Ibid., 220.

Yale, Bowdoin, Dartmouth, the University of Virginia, the University of Pennsylvania, the University of California, the University of Wisconsin, the University of Washington, the University of Jefferson and Johns Hopkins University.[169]

These examinations were not compulsory, but in 1882, Harvard asked Sargent to clear men before they became part of competitive sports teams.[170] In 1885, particular strength test scores were made a prerequisite for participation in the various sports at Harvard. In 1897, these scores were recorded as the following: 700 for participation on the University crew, University football, and for weight throwers, 600 points of Class crews, football teams and gymnastic, wrestling and sparring contests, and 500 for baseball, lacrosse and track and field.[171] They were also used to confirm the wellness of "scholarship students" before they began college. They needed a mere 300 points.[172]

Of the three winners of the Harvard strength test in 1900, only one was an athlete. For the most part this person "participated in various games for enjoyment alone, instead of striving for the much sought and well earned glory of the crews or the football field."[173] One of the men had entered college with average strength, but "he began systematic exercise in the gymnasium with the hope of increasing his strength."[174] The test was considered to be a way to make a comparison of strength among the various students, "without inciting them to special efforts or training."[175]

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[169] "Strength of College Men," *New York Times,* 24 May 1899, pg. 4. For coverage of these competitions see, "Columbia Won the Strength Test," *New York Times,* 12 May 1900, pg.11; "Physical Development Statistics," *New York Times,* 30 September 1901, pg. 5; "Book is C.C.N.Y. Strong Man," *New York Times,* 9 April 1908, pg. 7.
[170] Dudley A. Sargent, "The Origin and Significance of the Intercollegiate Strength Test," *Harvard Illustrated Magazine* 9 no. 7 (April, 1908):164.
[171] Sargent, "Strength Tests and Strong Men at Harvard," 118.
[172] "How Weak, Narrow Chested, Consumptive Looking Men are Transformed into Models of Strength and Grace," *New York Tribune,* 2 December 1902, pg. A3.
[173] J. Prince Jones, "Harvard's Strong Men," *Harvard Illustrated Magazine* 1 no.8 (May, 1900):197.
[174] Ibid., 198.
[175] Ibid., 199.

At times, large, strong men were judged to be unable to play sports according to the strength tests, confounding popular views regarding the correlation between muscle size and strength. As Sargent's examinations re-envisioned standards of female beauty, they also challenged notions of strength. In one case, a 270-pound man known as "Zeus" Roberts had a difficult time attaining the score of 700 points required for the University football team because he could not lift his weight easily, failing to do the required number of pull-ups and dips. Yet, an observer commented that many men "whom a good wind, it may seem would blow away" could in fact do 50 pull-ups and dips. It was these men, rather than the large athletes, who were "heralded year after years as the intercollegiate strength Samsons of America."[176]

Over time, students found ways to master certain aspects of the strength test by bending the rules. "As in other forms of athletics, where the competitive spirit runs high," Sargent explained, "every means and device that the rules governing the contest would admit, were resorted to, in hopes of establishing new records. Many things that the rules did not sanction, such as 'jumping' the manometer, 'jerking' and 'swaying' on the lifting appliances, cutting short the 'chins' and 'dips', etc., were allowed in some institutions, and these practices soon brought the tests as a competitive event into disfavor."[177] A common practice was that in the chinning and dipping exercise, men conserved their energy by allowing gravity to lower their body weight, rather than lower it in a controlled manner. Thus, the Intercollegiate Strength Test soon became as competitive and unsportsmanlike as the athletic sports that Sargent criticized and endeavored to reform. Sargent took efforts to guard against these "tricks" that students used by

[176] "How Weak, Narrow Chested, Consumptive Looking Men are Transformed" pg. A3.
[177] Dudley A. Sargent, "The Origin and Significance of the Intercollegiate Strength Test," 166; Sargent, "Twenty Year's Progress in Efficiency Tests," APER 18 no. 7(October, 1913): 452-456; "A Bowdoin College Boy's Strength," *New York Times,* 7 November 1897, pg. 4.

altering the tests and wording the rules in a more explicit manner.[178] Throughout his career, Sargent would experiment with different types of tests, and physical educators for decades would follow his lead in seeking to discover the means of measuring "physical efficiency."[179]

The strength tests had become a part of the university culture and the idea of creating a competition around them was controversial. In 1901, a student writer for the *Harvard Monthly* editorialized about the nature of these tests. He thought that since the test was required for participation in sports, it tended to overemphasize the importance of physical examinations. He wrote that "[T]his inordinate desire for a high strength-test would never have arisen if the physical examination had preserved its original scientific character. And if the practice of comparing statistics of strength is really likely to confuse the 'strength-test' with true sport, it would be well to make the 'strength-tests,' like 'college health statistics,' frankly uncompetitive; and to treat them in sensible fashion as so many scientific data for scientific purposes."[180]

In 1900, Sargent began to publicize his invention of the inomotor. This peculiar machine had so many functions "it is almost a gymnasium in itself."[181] It was to be used to develop all of the main muscle groups, especially the back, waist and abdomen which were the "weak points of many of the American people of both sexes."[182] It also provided cardiovascular exercise because Sargent found that many of the people that built themselves up on his pulley apparatus did not develop strength and endurance. Sargent intended the inomotor to correct the "drooping head,

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[178] Sargent, "The Origin and Significance of the Intercollegiate Strength Test," 167-169.
[179] "New Strength Test," *New York Times,* 30 January 1903, pg.11; George Meylan, "Twenty Years' Progress in Tests of Efficiency," APER18 no. 7 (October, 1913): 441-445 ; Sargent, "Twenty Years' Progress in Efficiency Tests," APER 18 no. 7 (October, 1913): 452-456; Joseph E. Raycroft, "Twenty Years' Progress in Efficiency Tests," APER 18 no. 7(October, 1913): 446-451; Carl L. Schrader, "How May Efficiency Tests Be Made Generally Efficient?" APER 18 no. 7(October, 1913): 457-462. See Chapter Seven.
[180] "Editorial" *The Harvard Monthly* 32 no. 3 (May 1901):126.
[181] Sargent, "The Inomotor," 403.
[182] Ibid., 403.

rounded shoulders, and flat chests, which characterize so many of our school children, students, literary men, and those who pursue a sedentary occupation."[183] It could be used for general exercise or, like his pulley equipment, could be adjusted in ways to target particular weaknesses and deficient areas, and thus was also a corrective machine.

This multifaceted machine was essentially a modified rowing machine, which Sargent summarized as "a pair of levers connected by four adjustable rods with a sliding seat, and a sliding foot rest, which are each in turn connected by a power-applying rod or cord to a crank clutch gear or sprocket wheel."[184] The inomotor could be stationary or "racing."[185] This latter type was mobile and Sargent believed it could be used indoors and outdoors, and could be attached to vehicles and used to propel them on land, ice, snow and the water. The *New York Tribune* reported that "[T]he idea of competition, of incentive, of actually doing something, is embodied in them, and it is for this reason that they are so adjusted that men can race each other across the gymnasium floor, and by means of registers inform themselves just how much strength and speed they are putting into their work."[186]

In the early 1900s, Sargent promoted his invention and received some newspaper coverage.[187] In October of that year six racing and seven stationary inomotors were available for use in the former rowing room of the Hemenway Gymnasium yet it is uncertain whether or not these machines were widely used. [188] In his 1915 book, Tait McKenzie commented briefly on these machines, but did not detail their uses or popularity.[189]

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[183] Ibid., 403.
[184] Ibid., 403.
[185] "Athletic Notes," *Harvard Bulletin* 4 no. 4 (October 30, 1901):4.
[186] "How Weak, Narrow Chested, Consumptive Looking Men are Transformed," pg. A3.
[187] "Physical Training" *Harvard University, The Summer School of Arts and Sciences Announcements for 1901* (Cambridge: Published by the University, 1901):71; "How Strength is Tested," *New York Times*, 7 February 1904, pg. 17.
[188] "Athletic Notes*," Harvard Bulletin* 4 no. 4(October 30, 1901): 4.
[189] R. Tait McKenzie, *Exercise in Education and Medicine* (Philadelphia: W.B Saunders Company, 1915), 64-65.

A 1902 *New York Tribune* article listed the inomotor and the strength tests as innovations that emphasized the introduction of competition into the field of developing strength. The reporter thought that work on the pulleys and heavy apparatus had been "slow, tedious, uninteresting" while the strength tests and inomotor turned work into play, by offering recognition and a prizes. The writer lauded the inomotor as "probably the best exercise in existence."[190]

The strength tests and inomotors both illustrate how Sargent desired to insert a spirit of competition into physical development. His creation of strength tests also illustrates Sargent's passion for measuring strength, or vitality, which he realized was not indicated by the size of one's muscles. Inspired by Sargent's work, other physical educators conducted various tests on male and female college students into the twentieth century. These examinations furnished a stimulating research agenda for leading physical educators in the following decades.[191]

The Wider Use of Anthropometry

Dudley Sargent was not the first person to conduct anthropometrical examinations, but he became one of the most well-known advocates, in part because of his famous Columbia Exposition statues and because his system of equipment for prescribed exercise. However, throughout the United States, at universities, schools and YMCAs those people in charge of physical training and the health of students carried out various types of anthropometrical exams. Physical educators sought to use anthropometry to help legitimize the profession and the field, which still had many skeptics questioning its value. Anthropometry was also used by physical

[190] "How Weak, Narrow Chested, Consumptive Looking Men are Transformed," pg. A3.
[191] John F. Bovard and Frederick W. Cozens, *Tests and Measurements in Physical Education* (Philadelphia: W.B. Saunders Company, 1938[1930]); R. Burton-Optiz, "Tests of Physical Efficiency," APER27 no. 4 (April, 1922): 153-159; James H. McCurdy, "Adolescent Changes in Heart Rate and Blood Pressure," APER15 (June, 1910): 421-432; Frank L. Kleeberger, "Physical Efficiency Tests as a Practical Means of Popularizing Physical Education at the University of California," APER no. 9(December, 1917):551-554.

educators to make their work into a science. Through research, doctors and physical educators drew various conclusions based on their statistics. The practice also helped to increase health consciousness at a time when people were discovering the benefits of preventive medicine and other health practices.

The earliest measurements in the United States were conducted by Edward Hitchcock at Amherst College, when he began his tenure as Director of the Gymnasium in 1860. He had contact with a scientist named W.T. Brigham who began to take measurements of Mongolian emigrants aboard a ship in 1867 and of American men in 1869, but did not pursue the work much further. Jay Seaver wrote that the Brigham's list of measurement formed the basis of those adopted by the AAAPE.[192] Hitchcock continued his examinations throughout his time at Amherst, yet according to Hartwell, "they were used for statistical and not for diagnostic purposes."[193] Measurements were taken throughout the 1880s to the 1900s at diverse institutions throughout the country, and many of the statistics were presented at physical education and health forums. Others were taken in order to prescribe exercises but were not necessarily put to greater use.

Physical educators at various institutions used statistics to draw comparisons among students. In 1893 M. Anna Wood examined 1,500 female students at Wellesley and the following year Delphine Hanna measured 1,600 female Oberlin students.[194] This data was compared and it was found that "the Wellesley student is somewhat larger in general dimensions, while the Oberlin student represents more nearly the type that has been popularly attributed to the Yankee. A comparison of these tables suggests a possible influence of environment in

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[192] Jay W. Seaver, *Anthropometry and Physical Examination (*New Haven, Conn., 1896), 93.
[193] Edward Hartwell, "On Physical Training in the United States," *Public Health Papers and Reports Presented at the Twelfth Annual Meeting of the American Public Health Association* 10 (October, 1884): 34.
[194] Delphine Hanna, *Anthropometric Tables Compiled from the Measurements of 1600 Women* (Oberlin, Ohio: The College, 1893).

producing a racial or local type, for in general the ancestry of the Ohio pupil is the same as that of the Wellesley pupil."[195] In 1903, Anna L. Barr compared her measurements of 1,500 female students from the University of Nebraska with the Wellesley and Oberlin statistics and concluded that Western college women were healthier than their eastern counterparts.[196] Barr wrote that, "[I]n girths where fatty tissue is more likely to accumulate the Eastern girl excels, but in most muscular girths, if they may be so called, the Western girl excels."[197] She argued that this was due to environmental causes rather than biological or "racial" reasons. The women in the West walked more in the open air than the Eastern town and city habitués, while the altitude and climatic conditions of the Nebraska area were known to be "invigorating," creating in many people a need to "push" and "rush along" sometimes resulting in "extreme nervousness" and "little chance of storing away of much fatty tissue."[198] The idea that people living in the Western plains states were subject to nervousness corresponded to Beard's view of the geography of nervousness.[199]

A similar statement about urban and rural health was conjectured from several hundred measurements taken at the University of Wisconsin later on in the decade. The Medical Examiner at the university, J. Elsom, took various measurements of the male students. He compared the students taking the "short course," who were mostly working on farms while attending classes, with the rest of the fulltime student population. Elsom found that, despite the common concern that "the average farmer's boy is apt to be poorly nourished and underdeveloped," they surpassed the general average in almost every category. He concluded

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[195] Seaver, *Anthropometry and Physical Examination,* 104.
[196] Anne L. Barr, "Some Anthropometric Data on Western College Girls," APER8 no. 4 (December, 1903):245-248.
[197] Ibid., 248.
[198] Ibid., 246.
[199] George M. Beard, *American Nervousness: Its Causes and Consequences* (New York: G.P Putnam's Son, 1881), 163-165.

that he knew these were not "authoritative statistics" but that they "fairly show that the boy from the farm is physically more vigorous than his brother from the city." [200]

Outside of the college setting, examinations were also conducted in public elementary schools and high schools. The first notable investigation of children in the United States was done by Henry Pickering Bowditch, a professor of physiology at Harvard Medical School, who examined 24,500 Boston public school children in 1876. While he was interested in how growth varied between the sexes, he also wanted to compare American students to other nation groups.[201]

Bowditch drew a number of conclusions from his work. He was able to assert that girls tended to gain weight earlier than boys as they approached puberty. This led him to question whether education should be adapted according to growth rate, since it might prove detrimental to burden young people while they were growing. In terms of nationality, he claimed that Boston children of Irish descent were shorter and lighter than those with a longer American line. He believed that this was in part due to the lower economic levels of most of the Irish, along with their "race stock." He drew another comparison between the better-off classes of children in America and in England and found that the Americans were larger. This might have been his main impetus for he concluded: "It will thus be seen that the theory of the gradual physical degeneration of the Anglo-Saxon race in America derives no support from this investigation."[202] Furthermore, he wanted statistics to be useful in education. He hoped for "the future hygienist

[200] J.C. Elsom, "Statistics Regarding Short-Course Students, University of Wisconsin, Season 1909-1910," APER 15 no. 69 (May, 1910): 348-349.
[201] H.P Bowditch, *The Growth of Children* (Boston: Albert J. Wright, State Printer, 1877).
[202] Ibid., 32.

and the educator" to use measurements as "a guide for the application of their sanitary regulations and a test for the efficiency of their systems of physical training."[203]

Another notable example was William Townsend Porter's 1892 measurements of 35,000 St. Louis schoolchildren. Porter's goal was to try to determine the effect of health upon intelligence and he believed his studies proved that smarter children were heavier and taller than less successful students.[204] While Porter demonstrated that girls from the laboring class weighed less than girls from the mercantile class, he did not believe that it was highly significant. He wrote that "the middle values of St. Louis children are little influenced by considerable differences in social condition."[205] He concluded his study with the following recommendation: "*No child whose weight is below the average of its age should be permitted to enter a school grade beyond the average of its age, except after such a physical examination as shall make it probable that the child's strength shall be equal to the strain."*[206] Clearly Porter wanted his statistics to be applied to school hygiene policy. He believed that low weight made children more vulnerable to sickness and made schools veritable "nurseries of disease."[207] Boston physician E. O. Otis agreed on this count, and wanted to use anthropometry to keep track of growth in hopes of preventing disease, especially tuberculosis.[208]

William W. Hastings, a physical educator and YMCA physical director, measured 2,500 children in May of 1898 in Lincoln, Nebraska, taking into account fifteen measurements and fifteen questions regarding medical history and filled out by parents. He found that girls were

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[203] Ibid., 46.
[204] W. Townsend Porter, "The Physical Basis of Precocity and Dullness," *Transactions of the Academy of Science of St. Louis* 6 no. 7(March, 1893): 162, 174. W. Townsend Porter, "The Relation Between the Physical Development of School Children and their capacity for Mental Labor," *Transactions of the Academy of Science of St. Louis* 6 no. 7(March, 1893):336.
[205] William Porter, "The Growth of St. Louis Children," *Transactions of the Academy of Science of St. Louis* 6 no. 7(March, 1893):310
[206] Porter, "The Physical Basis of Precocity and Dullness," 181.
[207] William T. Porter, "Comment, Boston Physical Education Society," APER2 no.4 (December, 1897):234.
[208] E.O. Otis, "Comment, Boston Physical Education Society" APER2 no. 4 (December, 1897):234.

heavier and taller than boys at the age of 13 and 14, and that those labeled American were larger than children of immigrants. He compared his findings with those of similar anthropometric examinations and found that Lincoln children were taller than Quetelet's Belgian, Roberts' English, Porter's St. Louis and his own previous measurements of Omaha children, while Bowditch's Boston children measured taller.[209] He found that his conclusions generally supported Porter's assertion that taller children were more intelligent, and that, "children of the same age and sex increase in mental efficiency according to the development of their various qualities, height, weight, etc."[210] The correlation between health indicators, such as height or weight, and intelligence proved to be a justly controversial topic in the 1880s and 1890s, one which Francis Galton weighed in on in 1898, claiming that there was indeed, no correlation.[211] This was a perennial question in fields of school hygiene and psychology throughout the twentieth century.

Informing a community about the health of their youth was one of the most important possibilities of anthropometry. Hastings thought that the people "understand that physical evils exist and that in the abstract there is some remedy for them, but it rarely occurs to them that the state ought to apply the remedy."[212] After examination "children learn that they have a body to be developed, become intelligently interested in care of health" and parents were, "reminded that the strength of their children is their immediate and most vital care."[213] Teachers would also pay more attention to health and learn how "certain children who appear dull and lifeless at times are so from pathological reasons rather than psychological; that such children are not stubborn, but

[209] William W. Hastings, "Anthropometric Studies in Nebraska," APER 5 no.1 (March, 1900):55.
[210] Ibid., 55.
[211] Francis Galton, "Useful Anthropometry," *Proceedings of the AAAPE at Its Sixth Annual Meeting,* 1891 (Ithaca, N.Y.: Andrus & Church, 1891):51-57.
[212]Hastings, "Anthropometric Studies in Nebraska," 61.
[213]Ibid., 61.

physically abnormal."[214] By alerting teachers to the laws of growth and development would avoid, "[A] vast amount of friction between teacher and pupil which now passes under the name of necessary evil."[215] Like Sargent, Hastings wanted people to consider the possible biological reasons for malevolence and poor attitudes. If teachers realized the implications of unhealthy bodies on the mind, they might have more sympathy for disobedient students. In bringing medical supervision into classroom and college halls, these doctors were contributing to the medicalization of aspects of education, in which negative student behaviors were interpreted in light of possible health problems.[216] Lastly, the publicity of growth statistics served as a resource to try to convince unsympathetic law makers and school boards to support physical education and hygiene. Resistance was still quite common; Hastings observed that school board members conceded "that the only body-building a boy needs is a wood-saw (but they do not see to it that he gets the wood-saw regularly); that careful supervision of recreative games is a waste of time; that their boys can play without extraneous help as they themselves did, and that after all play is a matter of secondary importance; that girl need only to *exist* at home as their mothers did."[217] The men making up the school boards overlooked the changes that occurred in the last generation, "the labor-saving devices, the specialization of the age, which removes largely the necessity for varied forms of labor, which in fact, leave very few of the 'household chores' of a generation ago."[218]

Methods of measuring were also used in Young Men's Christian Associations, and were was a popular topic of discussion among physical educators writing in the YMCA periodical,

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[214]Ibid., 61.
[215]Ibid., 61.
[216] Stephen Petrina,"The Medicalization of Education: A Historiographic Synthesis," *History of Education Quarterly* 46 no.4 (Winter 2006) 503-531; Peter Conrad, "Medicalization and Social Control," *Annual Review of Sociology* 18 (April, 1992): 209-232.
[217] William W. Hastings, "The Propaganda of Physical Education Throughout a State," APER6 no.4 (December, 1901):274.
[218] Ibid., 274.

Physical Education, which was edited by Luther Gulick.[219] The YMCA sold anthropometric chart forms to be used by physical directors.[220] More open to people of diverse classes than most colleges, YMCAs were responsible for spreading anthropometric work to a broader spectrum of the population. An example of the Sargent system of anthropometry and prescribed exercise was at the Y.M.C.A on West 57th Street in Manhattan. It provided examination, photography, and prescribed exercises for the participants. Under the direction of Louis R. Welzmiller, each member of the gym was thoroughly measured, had twenty-seven strength tests taken and were questioned about their medical history. Welzmiller explained to a reporter: "The methods applied in all of the Young Men's Christian Association gymnasiums throughout the country are directed solely for the development of the man and not the exercise. No person is allowed to exercise on the gymnasium floor at haphazard. We first find out what a member requires in the way of physical training and then we prescribe for him."[221] A newspaper reporter observed that anyone who wanted to use the well-equipped Y.M.C.A gymnasiums, "unless previously informed of all of the requirements, [would] be surprised at the thorough and somewhat complicated system of examinations…The physical measurements and tests are numerous and exacting."[222] There was also a large camera room to photograph cases of deformity. Welzmiller assured that this was a place for scientific training without any "circus element" or "lofty tumbling."[223] Through this regimented, supervised work, Welzmiller asserted, "[W]e do not try to make star athletes, but we do try to make the perfect man."[224]

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[219] William A. Jackson, "Graphic Methods in Anthropometry," *Physical Education* 2 no. 6 (August, 1893): 89-94; "Anthropometry," *Physical Education* 2 no.8 (October, 1893):122-124; Luther H. Gulick, "Physical Measurements and How they are Studied," *Physical Education* 2 no. 9(November, 1893):140-142; "Current Topics," *Physical Education* 4 no.2 (April, 1895):23-24.
[220]Blank Charts Advertisement, *Physical Education* 3 no. 11(January, 1895): unnumbered after page 184.
[221] "Helpful Physical Tests," *New York Times,* 3 January 1897, pg. 10.
[222] Ibid.,10.
[223] Ibid.,10.
[224] Ibid.,10.

While the physical educators were using anthropometry to prescribe exercise, build health-awareness, and study the health of populations, some supporters of eugenics sought to utilize similar methods of measurement in their work.[225] However, the data gathered in colleges proved to be not very useful in other fields. According to a leading physical anthropologist, Alěs Hrdlička "[C]ollege and prison anthropometry follow, regrettably, their own lines and use more or less separate instruments, in result of which most of the work is lost to Anthropology."[226]

Clearly, Sargent's system of training incorporated a multifaceted philosophy that evolved over his forty years at Harvard's Hemenway Gymnasium. His system of anthropometric examination and prescribed exercise prevailed in many colleges and universities in the late nineteenth and early twentieth century. It was a way to create widespread physical activity for people at all levels of fitness and experience. In criticizing the immorality and elitism of competitive sports, Sargent also believed they were not healthy and created uneven bodies. While he believed in the 1880s and 1890s, that people should exercise in a disciplined way, and even take recreation as a "duty" to regenerate their nervous energy, over the late 1890s and early twentieth century, he realized that students would exercise more if he provided more competition into his system, so he created the strength tests and the inomotor.

Sargent's system became quite widespread, albeit with variations over time and space. The presence of his system and equipment came to be synonymous with the creation of the "modern" gymnasium. The next chapter seeks to reveal the student's views of systems of physical training and the uses of modern gymnasium through the analysis of student newspapers.

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[225] Havelock Ellis, *Studies in the Psychology of Sex Volume VI: Sex in Relation to Society* (Philadelphia: F.A. Davis Company, 1910), 627; Paul Popenoe and Roswell Hill Johnson, *Applied Eugenics* (New York: MacMillan Company, 1918),336.

[226] Alěs Hrdlička, *Physical Anthropology, Its Scope and Aims* (Philadelphia: The Wistar Institute of Anatomy and Biology, 1919), 140.

While Sargent hoped that his system would be implemented universally and involve the entire study body in healthful physical training, students expressed diverse ideas about physical training, athletics and health.

Chapter 5. Systems and Students

Throughout the last two decades of the nineteenth century, Sargent's system of physical training grew in popularity in many parts of the country. Numerous gymnasium directors and instructors at colleges and YMCAs purchased his equipment, took anthropometrical examinations, created charts and prescribed individualized exercise for students. However, the exercises varied from institution to institution, as they did from student to student. Instructors often made their own changes, while maintaining the basic system of measuring students and prescribing certain exercises.

Thousands of students, male and female, thus encountered gymnasiums and systems of training in the late nineteenth and early twentieth centuries. Student-run publications reveal many of the students' views on training, health-consciousness, discipline, athletics and the effect of exercise on the mind and body. These sources give a glimpse into the diverse ideas and practices regarding physical education and training. At the University of Michigan students sought Sargent's system and envied its establishment at other colleges. While some students supported compulsory training at Hamilton College and Lafayette College, it was mostly tied to ambitions to improve college sports. Student editors at Vassar College demonstrated knowledge of the philosophy of physical training and issued support for Sargent's system as well as recreation. At Lehigh University, student-editors criticized students that cut required physical training and wished their peers would take more pride in their physical development. Generally, physical educators often faced the issue of students trying to be excused from gym through a letter from a family physician. While some students advocated for universal, compulsory

physical training, their lamentations about a lack of enthusiasm among the rest of the student body attest to widespread noncompliance.

The Growth of Prescribed Exercise and Compulsory Training

As early as 1884, a report by the American Public Health Association stated over forty institutions owned a substantial number of Sargent's developing machines. His system of anthropometric examination and exercise prescribed by developing machines was practiced at Harvard University, Cornell University, Johns Hopkins University, Lehigh University, Smith College, Hartford Theological Seminary, YMCA Union Gymnasium, Haverford College, The National Deaf Mute College and Penn Charter School, in addition to private gymnasiums in Boston, Philadelphia and Cambridge.[1] In 1889, Sargent claimed that some of his equipment was in use in three hundred and fifty institutions or more, with membership numbering over 100,000.[2]

Sargent's influence was also felt in the number of physical educators produced at his Summer School of Physical Education in Cambridge. From 1887 to 1918, 3,052 people had graduated, representing each state in America and 53 foreign countries. They had gone to work in 232 colleges, 245 secondary schools, 65 normal schools, 326 public schools, 11 normal schools for physical education, 72 YMCA gymnasiums, 51 YWCA gymnasiums, 19 municipal gymnasiums, 30 athletic associations, 27 state institutions, and 4 schools for vocal training.[3] African-American leaders such as Tuskegee Institute's Booker T. Washington and Robert R. Moton, as well as Edwin Bancroft Henderson had also taken the course along with many people

[1] Edward M. Hartwell, "On Physical Training in the United States," *Public Health Papers and Reports* 10 (October, 1884): 35.
[2] Dudley A. Sargent, "The System of Physical Training at the Hemenway Gymnasium" in *Physical Training. A Full Report of the Papers and Discussion of the Conference Held in Boston in November, 1889,* ed. Isabel C. Barrows (Boston: Press of George H. Ellis, 1890*):*65.
[3] "Forty Years of Dr. Sargent," *Harvard Alumni Bulletin* 21 no. 32 (May 15, 1919): 652.

involved in hygiene, physical education, athletics and education.[4] Among the most notable in the field of physical education were William Burdick, Thomas D. Wood, and Fred E. Leonard, and women's physical educators Delphine Hanna, Helen C. Putnam and Abby Shaw Mayhew.[5] Many leading physical educators and physicians were lecturers or special instructors at one time including Henry D. Bowditch, Walter Channing, Edward Cowles, Edward M. Hartwell, James McCurdy, George Meylan, and Tait McKenzie.[6]

A 1911 survey illustrated the preponderance of prescribed exercise in the college setting, the other chief aspect of the Sargent system. Of 124 of colleges and universities that were questioned, 98% had gymnasiums, 95% had regular courses in physical education, and in 87% of these it was prescribed. Of those programs with prescribed training, 44% had it for the first two years of college, 27% for the first year, and the remaining colleges over two years or only for students whose health fell below a certain standard.[7] Physical education had also gained respect as part of the curriculum. Students received grades in physical training in 63% of the colleges.[8]

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[4] Ibid., 653; "Black Sports Pioneer…Edwin Bancroft Henderson," *The Crisis* 92 no.1 (January, 1985): 20

[5] Ibid., 653 . Deborah Lynn Cottrell, "Women's Minds, Women's Bodies: The Influence of the Sargent School for Physical Education" (PhD Dissertation, The University of Texas, Austin, 1993)

[6] Ibid., 653. On the Sargent School see, George J. Makechnie, *Optimal Health: The Quest—A History of Boston University's Sargent College of Allied Health Professions* (Boston: Boston University, 1979); Deborah Lynn Cottrell, "Women's Minds, Women's Bodies: The Influence of the Sargent School for Physical Education," (PhD Dissertation, The University of Texas, Austin, 1993).

[7] George Meylan, "Presidential Address," APER16 no.79 (June, 1911): 356.

[8] Ibid., 356. For examples of prescribed exercises and physical examinations at various colleges see the following college catalogues: *Catalogue of Washington and Jefferson College for the Ninety-First Year 1891-'92* (Washington, PA: Published by the College, 1892): 38-40; *Catalogue of Tufts College* 1892-93(Cambridge: John Wilson and Son, 1893): 72; *Catalogue of the California State Normal School at San Jose for the School Year Ending June 29, 1894* (Sacramento: A. J. Johnston, Supt. State Printing, 1894): 30; *Annual Catalog of Union University, 1895-96* (New York: P. F. McBreen Printer, 1896): 68-69; *Concerning the Massachusetts Institute of Technology*, 1909, 112-113; *Catalogue of Tufts College*, 1897-98 (Boston: The Bara Press, 1898); *University of Kansas, Lawrence, 1898-'99* (Lawrence, Kansas, 1899):132-33;*The Catalogue of Bowdoin College and the Medical School of Maine, 1899-1900* (Brunswick, Maine, 1899): 39; *Fifty-First Annual Catalogue of the University of Rochester*, 1900-1901(Rochester: E. R Andrews Printing Co., 1900): 106; *Catalogue of Brown University* 1904-1905 (Providence: Brown University, 1904):107; *Washington and Jefferson College*, 1904-1905(Washington, PA: Published by the College, 1905):46; *Western Reserve University, The College for Women, Catalogue for 1904-1905* (Cleveland: Winn & Judson, 1904):53; *Annual Catalogue, New York University* (Washington Square, New York City, 1914):72; *Annual Catalogue of the University of New Mexico at Albuquerque, 1917* (University of New Mexico: Albuquerque, 1918): 82.

Despite employing physical examinations and prescribed exercises, physical educators conducted their programs in a variety of ways. For instance, in 1889, the Woman's College of Maryland chiefly used the Swedish system of training, and was equipped with Zander machines, which were mechanized by steam or electricity and often used in sanatoriums. Since the goal of the training was "to secure a symmetrical development of the body," everyone was required to get a medical examination and physical measurements so that the work was "carefully adapted to the need of the individual."[9] At Swarthmore in the early twentieth century "a constant supervision over their health is kept from week to week, and exercise is assigned according to the student's ability."[10] The requirements were quite substantial, with one hour of exercise daily for every year of college, including sports in seasonable weather, and gymnastics classes in the winter. At the Normal School at San Jose, students were given physical examinations and advised on "the hygienic regimen most conducive to health and systematic development."[11] The requirement was stated in these terms: "No student is graduated from the school until his physique and bodily heath are such as will enable him to perform a teacher's duties easily and creditably."[12]

Despite the growth of gymnasiums and compulsory training requirements illustrated in these statistics, there was indeed no consensus. Many college Presidents and authorities still had problems obtaining funding from school boards and boards of trustees that thought such training

[9] "Physical Training and Hygiene," *The Woman's College of Maryland* (Baltimore: Steam Press of Wm. K. Boyle & Son, 1890):37.
[10] *Swarthmore College Bulletin* 5 no. 2 (December, 1907):173.
[11] *Catalogue of the California State Normal School at San Jose for the School Year Ending June 29, 1894* (Sacramento: A. J. Johnston, Supt. State Printing,1894):30.
[12] Ibid., 30.

was unnecessary.[13] The statistics do not reveal the true nature of development of physical training, as one college president noted:

> The truth is we affect to have great interest in the physical development of the young student and we set forth our superior advantages in this respect in our annual catalogues; but the whole pretense is a ridiculous farce,—hollow and nothing in it. We do not mean it. Often fair gymnasiums are built and to some extent equipped, but how soon in too many cases do they become neglected old barracks and look more like a rented mansion in a deserted village! Most of what is done in our college is accomplished through athletic organizations of the students themselves.[14]

This chapter sets outs to reveal students' various views of physical training and health, along with their actions in response to the development of gyms. It looks at numerous student publications to capture the students' words and opinions, at male, female and co-educational institutions from the last quarter of the nineteenth century into the early 1920s. Instructors' and administrators' writings and speeches are also used in an effort to illustrate students' actions, but the opinions of these people are largely omitted and will be explored in Chapter Six.

"interminable gymnasium-agitation" at Ann Arbor, 1869-1894

The development of college gymnasiums in the last quarter of the nineteenth century was not always generated by the faculty, administration or boards of directors. At the University of Michigan, Ann Arbor, students campaigned for the construction of a modern gymnasium and the creation of a properly staffed physical culture department. This complicates views of health reforms as methods of social control issued from above.[15]

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[13] Frederick W. Hamilton, "Comment," *Official Report of the New England Association of Colleges and Preparatory Schools*," (October, 1907): 92; William G. Anderson, "Methods in University Gymnasiums," *American Gymnasia and Athletic Record* 1 no. 10 (June, 1905):273-274.

[14] D.C. Thomas, "Value of Athletics to College Discipline and Moral Training," *Sixtieth Annual Report of the Public Instruction of the State of Michigan for the Year 1896* (Lansing: Robert, Smith Printing Co., 1897):329.

[15] John Evans, Brian Davies and Jan Wright eds., *Body Knowledge and Control: Studies in the Sociology of Physical Education and Health* (London and New York: Routledge, 2004); David Kirk, "Physical Education and Regimes of the Body," *Australian and New Zealand Journal of Society* 30 no. 2(1994):165-77; Patricia Vertinsky, "The Social

Students publicized their opinions and ideas in several student publications including, *The Michigan Argonaut, The University Record* and *The Chronicle.* In their coverage, students presented many views on the uses of a gymnasium, reported on their political activism, engaged with the ideas of various educators, and expressed their views creatively through humor and poetry. Unlike some northeastern colleges, where donors contributed many thousands for the construction of gymnasiums, the less wealthy students at this public university worked to obtain money from fellow students, the legislature, select alumni and philanthropic businessmen.

The "interminable gymnasium-agitation" began in the late 1860s, when the university students initiated a "Gymnasium Fund," for collecting money.[16] Throughout the late nineteenth century, the money was raised intermittently through fundraising and political efforts. Finally, the University was able to build the Waterman Gymnasium for men in 1894, followed by the creation of a women's gymnasium, the Barbour Gymnasium, in 1896. In addition to the Gymnasium Fund, Joshua Waterman and Levi L. Barbour contributed a great deal to the buildings that were named for them.

In 1871, a writer for *The Chronicle* expressed concern about the lack of gymnasium facilities for exercise in the winter months. He asked if the administration would provide the students with "a room *somewhere* in the college buildings, either old or new, that we can have as a place for exercise through winter."[17] He suggested a room in a building that was in the late stages of construction, since "the workmen, in finishing it off, will only occupy a small portion of it as a workshop."[18] The wish to exercise in an unfinished room in a half-built building illustrates the strong desire for space to exercise indoors. A similar sentiment was expressed the

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Construction of the Gendered Body: Exercise and the Exercise of Power," *International Journal of the History of Sport* 11 no.2 (1994): 147-71.

[16] "The Gymnasium," *The Michigan Argonaut* 5 no.2 (October 16, 1886):11.

[17] "H," "Gymnastics," *The Chronicle* 3 no. 1 (September 23, 1871): 5.

[18] Ibid., 5.

following year, when another student considered various exercise options: "[C]lubs, dumb-bells, boxing gloves, base ball, foot ball… form an elegant means of exercise; but the former are too little resorted to by the average student, and the latter are comfortably accessible, only when the mercury is considerably above zero. But give us a gymnasium and we will use it; — at least, every one will whose life, health and 'physical vigor' are worth preserving."[19]

However, not every view in the school newspaper was pro-gymnasium. In 1873, an oppositional article was published by a writer with the pseudonym "Musculario." Although it might be taken as a joke, the writer presented several arguments against spending public money for the gymnasium. He argued that, "the constitutional weariness of the student cause him to neglect his opportunities for physical culture."[20] If the university mirrored the inflexible structure of a boarding school, with set hours for every task, "then it would the duty of the powers that be to furnish the means for physical culture."[21] He continued:

> While the rules of the University are such that a man may room in Ann Arbor and take his meals in Ypsilanti, there is no reason why the state should furnish a race track for the boys to do their walking in, and while the streets are lined with trees, there is no reason why the state should spend ten thousand dollars or more in building a house, with a ladder inside for the boys to climb on, and while the noble Huron presents such facilities for aquatic sports, we do not need lifting machines to strain our backs on; in short, while we are as we are, a gymnasium is one of the least of our necessities.[22]

Thus, this student thought that his classmates ought to be able to get exercise in their daily lives without making an effort to artificially exercise. Through walking, water sports, and climbing trees, active people would be able to maintain health. He concluded that "no student who is not too lazy to make use of his gymnastic opportunities needs a gymnasium."[23] In

[19] "C," "That Gymnasium," *The Chronicle* 4 no. 14 (April 18, 1873):158.
[20] "Musculario," "'That Gymnasium' Again," *The Chronicle* 4 no. 15(May 3, 1873):171.
[21] Ibid., 171.
[22] Ibid., 171.
[23] Ibid., 171.

essence, he argued that those who were active would find various ways to remain active, with a gymnasium or not, while those that were inactive would also remain that way, even with the construction of a new gymnasium.

Students initiated many fundraising ventures in the late nineteenth century. In 1876, they raised money through subscription, asking for student donations.[24] The Athletic Association, partnered with extracurricular groups in presenting shows that charged admission fees to contribute to the gymnasium fund. In March of 1879, musical groups known as the University Trouveres and the Weber Quintette Club gave performances for this purpose.[25] There were also minstrel shows performed by students.[26] Over the course of the late nineteenth century, the Lecture Association contributed money consistently and the proceeds of the Field Day and sporting events also went to the fund.[27] In 1899, an alumnus mentioned facetiously that, "[O]nly one who was here in Ann Arbor at the time can have even a faint conception of the weary miles danced at balls whose proceeds were to go toward the Gym, of the cubic feet of song and speech with which University Hall has been inflated time and again, of the ink flowing like water in the student publications, of the footballs kicked and the baseballs batted, of the carloads of cork burned for the minstrelsy, of the coffee mills worn out in winding up the wax figures at Mrs. Jarley's entertainments, and of the gallons of ice cream and tons upon tons of fleecy cake swallowed in those strenuous years—all to the final end of bodily development."[28]

In the late 1870s, the efforts reached a fevered pitch, with much campaigning and petitioning to the state legislature and Board of Regents. Some students felt that it was their right to be provided with a gym. One such student wrote to the editors of the newspaper, "Michigan

[24] "B" "Correspondence," *The Chronicle* 9 no. 15(May 18, 1878):231.
[25] "Things Chronicles" *The Chronicle* 10 no .12(April 5, 1879):188-189.
[26] "Untitled Editorial," *The Chronicle* 20 no. 5(November 10, 1889):62.
[27] "Untitled article," *The Chronicle* 17 no.1 (October 15, 1886):8-9; "Editorial" *The Michigan Argonaut* 1 no.3 (November 4, 1882):52.
[28] "Changes of a Decade," *The Michigan Alumnus* 6 no.47 (October, 1899):4.

University has no right to furnish from eight to twelve hours of mental work to its students, and to offer them no means of sustaining the soundness of body which is so necessary to sustain such work."[29] In February of 1879, students circulated a petition and sent it to the state legislature. They reported that several legislators "expressed themselves as quite favorably disposed to the project; to these expressions we pin the shadow of our faith."[30] Many students were optimistic about the chances of obtaining public money. In the February 15, 1879 edition of *The Chronicle*, a student wrote that "[T]he gymnasium question was informally discussed by the regents, who look at it with favorable eyes."[31]

By May, however, the optimism had flickered out. Apparently, this was the first time that the Athletic Association tried to gain support from the Regents and it was "thwarted by the opposition of one man," Dr. Charles Rynd, who became a subject of contempt for the pro-gymnasium students.[32] In his address he pronounced, "the public funds should not be used for any purpose not immediately and directly connected with the great public trust of education the students."[33] He denigrated the gymnasium movement as comparable to "an appropriation for a fiddler and dancing master."[34] During the discussion someone in the legislature proposed that lumber and 1,000 saw-bucks should be sent to the University instead of the gymnasium.[35]

The students felt betrayed because Rynd had not brought up any objections in the early stages of the proposal.[36] In a published letter to Rynd, they berated him, writing that "as a doctor, you know or at least ought to know" the importance of cultivating the body along with the mind. They concluded "[Y]ou are probably the best cursed man this side of the Mississippi

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[29] "DHU," "Still Another," *The Chronicle* 10 no. 1 (October 12, 1878):7.
[30] "Our Parting Bow," *The Chronicle* 10 no. 9 (February 15, 1879):137.
[31] "Things Chronicled," *The Chronicle* 10 no. 9 (February 15, 1879):139.
[32] "Various Topics," *The Chronicle* 10 no. 14(May 3, 1879): 210.
[33] Charles S. Mitchell, Published Letter to Charles Rynd, *The Chronicle* 10 no. 11(March 15, 1879):172.
[34] Ibid., 172.
[35] "Things Chronicled," *The Chronicle* 10 no. 10 (March 1, 1879): 156.
[36] Charles S. Mitchell, Published Letter to Charles Rynd, *The Chronicle* 10 no. 11(March 15, 1879):172.

river."[37] Rynd's sarcastic response, dated two days later, was promptly published. He noted that the student member who had written him, Charles S. Mitchell, was listed in the student directory as hailing from Minnesota. Rynd wrote, "a discussion in regard to the propriety of levying a tax on our people, for any purpose, between an honored citizen of the State of Minn. and a Regent of the University of Michigan, might be considered in bad taste."[38] He dealt with the students' anger and ideas about the importance of a gymnasium by crafting the following:

> Your assurance that I am the "best cursed man this side of the Mississippi" is not only cheering but grateful news. To be "cursed" by some of whom time may give discretion were an honor. But, I fear the abnormal excitement may injure your young friends. A tender brain may easily become the subject of morbid influences. Advise the dear young men to assuage their angry passions, study the Scriptures, and contemplate the character of Plato…Having confidence and prudence I again beg to you to allay the serious trouble which seem brewing. Do you fear an immediate outbreak?[39]

In the printed response, Mitchell wrote back, "[A]s to the personal remarks concerning myself…I can merely reply to you as a private citizen of Michigan, that to a citizen of Minnesota they sound most puerile and ungentlemanly, and are most certainly entirely uncalled for." [40]

In March of 1879, the *Chronicle* editors suggested trying to select from the legislature those members that were sympathetic to their cause and work with them. They wrote, "[W]e detest and would discourage any attempt at 'lobbying;' but there is no need of any dishonest practices…All that is necessary is, in a face to face conference, to inform those members who are willing to lend an attentive ear to our cause, of the true state of affairs here, of the universal desire for the erection of a gymnasium building on our campus."[41]

Like other college newspapers at the time, the University of Michigan's had a section where they compiled information about developments at other colleges and universities. They

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[37] Ibid., 172.
[38] Charles Rynd, Published letter to Charles S. Mitchell, *The Chronicle* 10 no. 11(March 15, 1879):172.
[39] Ibid., 172.
[40] Charles S. Mitchell, Published Letter to Charles S. Mitchell, *The Chronicle* 10 no. 11(March 15, 1879): 173.
[41] "Various Topics," *The Chronicle* 10 no. 11(March 15, 1889):163.

often wrote about the improvements of other colleges' physical education facilities. These news items illustrate that they were very cognizant of developments and other colleges, and often quite envious. In 1878 they published details on the construction of the Harvard gymnasium: "Mr. Augustus Hemenway, '75, it seems is to give the college as much money as shall be found necessary for the erection of a new gymnasium. The new building is to be of brick, and is to contain all the necessaries and conveniences of a first-class modern gymnasium…"[42] They later reported that the yearly expenses of Harvard's gymnasium were $10,000. [43] In 1882 a student wrote, "Cornell has a new gymnasium well underway, and is about to have an Athletic Association. We have an Athletic Association well under the weather, and are about to have-er-well, that's where the analogy seems to go to pieces."[44] When they recorded that Columbia University was spending $165,000 for a new gym, a writer reasoned, "[C]onsidering that the U. of M. has more than three times the number of students possessed by Columbia, this description should be calculated to turn Ann Arbor men green with envy."[45] Over the years, they kept up with gymnasium developments at Yale, Bowdoin, Trinity College, Dartmouth, University of California and Hobart. [46]

Having not succeeded in their campaigning in the 1870s, students organized various exercise programs to keep active in the cold weather months in the early 1880s. A fencing class was to be conducted at Armory Hall, and a student predicted that "[N]o doubt many a spirited *salle d'armes* will take place this winter and many an Ann Arbor landlady's nerves will be sadly

[42] "General College News," *The Chronicle* 9 no. 7(January 19, 1878):110.
[43] "General College News," *The Chronicle* 17 no. 1(April, 16, 1886):238.
[44] "College World, clippings and comments," *The Michigan Argonaut* 1 no. 9 (November 18, 1882): 74.
[45] "Athletic Notes," *The Michigan Argonaut* 5 no.18 (March 12, 1887):146.
[46]"General College News," *The Chronicle* 17 no.12 (April 17, 1886):237; "Athletics," *The Chronicle* 17 no. 8(February 13, 1886):158; "General College News," *The Chronicle* 17 no.13 (May 1, 1886):256; "General College News," *The Chronicle* 10 no.15 (May 17, 1879):237.

jarred by the violence of the turmoil on her second floor."[47] Students also took it upon themselves to seek places for systematic physical training by organizing gymnasium work with apparatus at locations on Main Street and Ann Street, and at a place known as McMahon's Hall. This exercise was not merely recreational for "only those who are willing to work hard and regularly will be admitted."[48] The student reporter considered these various efforts to be "commendable" but thought it was a "melancholy fact" that the majority of students would not be included, and that they "will have no means of keeping their blood in circulation, save an occasional walk to the post-office, and we fear next spring will find the students of the University of Michigan a pallid, sickly crowd, with weak limbs, sluggish nerves and countenances altogether too spirituelle."[49] Thus, we see that students organized alternative ways to exercise, despite the failure to obtain a modern college gymnasium. One of their chief concerns was to get exercise during the long, cold winters.

Despite these notable enterprises, a student observed in late 1882 that fundraising activity had "gradually grown less."[50] When William Blaikie came to lecture at the university in January of 1886, the writer reported that "[I]t is much to be regretted that so few were present…As long as students show so little interest in field sports, it will be impossible to get a gymnasium, and the legislature will be, to some extent, justified in refusing an appropriation for that purpose."[51] The students involved in the Rugby Association had arranged for Blaikie to lecture, and were also instrumental in the creation of a temporary gymnasium in 1886. This shows a possible divide between less enthused student and the pro-gymnasium Rugby Association and student editors.

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[47] "The Fortnight," *The Michigan Argonaut* 1 no.3 (November 4, 1882): 45.
[48] Ibid., 45.
[49] Ibid., 45.
[50] "The Gymnasium Fund," *The Michigan Argonaut* 1 no. 6(December 16, 1882):112.
[51]"Various Topics," *The Chronicle* 17 no. 7(January 30, 1886):125.

In February of 1886 a temporary gymnasium was created along with an ice-skating rink. The gym included assortments of bars, rings, a spring board, a trapeze and mattresses for safety, along with pulley-weights, Indian clubs, wooden and iron dumb-bells and a small track. Dr. Herdman, a member of the medical department, was to measure and weigh a number of students who used the gym regularly, at the beginning and end of the school year. The students hoped to present these measurements to the state legislature to support their efforts for appropriation of funds.[52] The gymnasium was under the supervision of Dr. Fremont Swain, who aimed to conduct extensive anthropometric measurements, using "a complete set of Dr. Sargent's apparatus."[53] Swain wanted to "take the measurements of all those taking regular exercise in the gymnasium and to prescribed a regular course of exercise to suit each case."[54] In the same year that students had access to the temporary gymnasium, the editors of *The Chronicle* noted it "has grown very popular, and sometimes the building, large as it is, seems much too small for the many participants."[55] Reports were also written by students stating that the gymnasium helped to spur athletic activity.[56]

Although the editors of the publications were all male, a female student was able to contribute a poem in support of the gymnasium movement. Elsie Jones, of the class of 1888, contributed a poem called "Gymnasium Song," which was set to the popular minstrel song "Master's in the Cold Cold Ground." The following was published on June 18, 1887:

Once there was a wealthy farmer,
in the State of Michigan,
Sent his boy down to Ann Arbor
For to be a college man.
Fresh from fields of dewy clover,

[52] "Various Topics," *The Chronicle* 17 no. 9 (February 27, 1886): 163-64.
[53] "Things Chronicled," *The Chronicle* 17 no. 13 (May 1, 1886): 253.
[54] Ibid., 253.
[55] "Things Chronicled," *The Chronicle* 17 no. 11 (March 27, 1886):214.
[56] "Various Topics," *The Chronicle* 17 no. 15 (May 29, 1886):283-284.

Fresh from blithesome buck and saw,
Came the farmer boy to college,
Entered in the School of Law.

CHORUS.
Oh, poor old farmer,
Hear the warning sound,
Take your boy back to his mother,
Save him from the cold, cold ground.

Soon the farmer boy grew sickly,
Called a medic dwelling nigh,
"Exercise is what you need, sir,
Exercise or you will die."
Then the farmer boy full quickly
Hied him to his faithful chum,
Cried," Where is this institution
Known as the gymnasium?"
Scornfully his chum made answer,
"Rats! What do you take me for,
Getting off such chestnuts on me?
Ask some legislator."
Then the farmer boy grew sicker,
Lower drooped his youthful head,
Pills and powder brought no comfort,
Soon he was quite cold and dead.

CHORUS.
Oh, poor old farmer,
Drop your tears around.
Take your boy back to your mother,
Put him in the cold, cold ground.

Yet his spirit still doth wander,
Cold and patient, pale and dumb,
Waiting for that institution
Known as the gymnasium.
Oh, ye mighty legislators,
Listen to our mournful song,
Let his wretched, wandering spirit
Step into his grave ere long.

CHORUS.
Poor old gymnasium.
Pass the hat around,
Smallest favors are accepted,

Raise it from the cold, cold ground.[57]

Jones illustrates several of the common themes in physical education at the time. Her poem shows that, like physical educators, students were issuing warnings about the detrimental effects of education. The poem's subject, a young man born to a "wealthy farmer" had been accustomed to natural exercise as a result of farm work and the "buck and saw." When his health began to fail due to an unbalanced lifestyle of studying, a doctor told him he must exercise, but he found that there was no place to do so, and resorted to "pills and powder." He was a typical case of the student body with the "drooping head" advancing toward collapse. In this morbid scenario, the student was put into the ground before his time because of a lack of exercise from a proper gym. The hope was to raise the gymnasium from the ground, so that it might serve as a type of savior of youth from poor health.

The creation of gymnasiums at colleges in the late nineteenth century coincided with the debates about religious requirements and practices on many campuses. This was symbolically illustrated in 1881, when a writer reported, "[A]t Hobart College the old chapel has been fitted up, and is awaiting the fixtures necessary to convert it into a gymnasium. Wouldn't that be a good plan to adopt here?" [58] Several years later another student noted that from 1885-1890, religious organizations had spent $75,000 on various buildings. The student felt that the money would have been better spent on a gym, because there was no "lack of high and refining spiritual influence"[59] at Ann Arbor. Like other students, he was particularly concerned about physical activity in the winter months. Using the "safety-valve" idea, he thought that the college student did not have a "legitimate means of working off his superfluous activity," which resulted in "a

[57] Elsie Jones, "Gymnasium Song," *The Michigan Argonaut* 5 no. 30(June 18, 1887):242.
[58] "Miscellaneous," *The Chronicle* 13 no.1 (October 8, 1881):13.
[59] A Philosopher and Athlete, "Communications," *The Michigan Argonaut* 8 no. 9(March 15, 1890):148.

good deal of conduct of, to say the least, questionable propriety."[60] The student argued that, "[A] gymnasium could not fail to remove much of this, a great deal more of it, we think, than any teaching or moral principles, for it would reach a class of men whom moral principles do not as a rule very much affect."[61]

In 1889, the editors of *Michigan Argonaut* commented that "[F]or years the University has longed and worked for a gymnasium, and for years it has flitted like a Will-o'-the wisp from legislature to legislature until now a dull despair has settled over the minds of men."[62] Yet, they still tried to rouse the mass of students into action. After years of working, they asserted "there is no use in giving up all effort. Another attack must be made on the hitherto impregnable Lansing stronghold."[63] In the meantime, the editors of *The Michigan Argonaut* wrote short rants such as the following:

> One more gymnasium wail. We want to ask the boys whether or not they consider it hard luck, when at home, after having dilated upon the advantages of the U. of M. to a crowd of admiring friends, to be suddenly brought to silence by the innocent question, "Have you a fine gymnasium?" We find it so. How is it with you?[64]

The last decade of the nineteenth century would bring the long-awaited gyms. In 1894, they managed to complete the men's gymnasium, in part, through a $20,000 donation from by Waterman, in addition to the Gymnasium Fund which amounted to $6,095, and a sum distributed by the University Regents. The final cost was $61,876.[65] In April of 1892, construction was under way, but "[T]he women's wing remains for the present a blue-print drawing and a pious

[60] Ibid., 148.
[61] Ibid., 148.
[62] "Editorial," *The Michigan Argonaut* 8 no. 10 (December 14, 1889):72.
[63] Ibid., 72.
[64] "Football Notes," *The Michigan Argonaut* 8 no. 11 (January 11, 1890): 84.
[65] Wilfred Shaw, "The University's Early Days," *Michigan Alumnus* 27 no. 260 (January, 1921):229.

wish."[66] In 1894, the authorities decided that the women would share gym access, and have the gym to themselves between 9 A.M. and noon each day. However, two years after the completion of the Waterman Gymnasium, the women would have their own, named for Levi Barbour. Although begun in 1896, it was still not completely finished until February of 1898.

Although over the years, athletic teams supported the building of the gymnasium, and sports and physical training seemed synonymous to some people, the editors of the *University Record* held that "a gymnasium does not exist in the interest of athletics; it exists in the interest of the student's physical health. To some it may sound strange, but it is none the less true, that the average student has great difficulty in finding enough of the right kind of exercise to keep him in good physical condition."[67] The gymnasium was to provide students of all abilities with exercise that was "varied, interesting, social, and easy to get in all kinds of weather" and was "a potent enemy of ill-health and sluggishness."[68]

When students finally got the gymnasium that many classes had earnestly fought for over decades, the question of compulsory physical training was put on the table. The editors considered that, "[O]n the one hand it seemed likely that, if no requirement were made, a large number of those who ought to have regular exercise would fail to do so, and that the gymnasium would thus become what it is desired that it shall not become, namely, the *rendezvous* of a comparatively small number of enthusiastic athletes."[69] Here we see the concern that athletes might dominate the gymnasium if rules were not created for compulsory training, allowing all students to use the gymnasium, if they wanted to or not. Although athletes had supported and worked for the creation of the gymnasium, the prized institution was meant to serve the majority

[66] "Various Topics," *The University Record* 2 no. 2 (June, 1892): 25.
[67] "Various Topics," *The University Record* 1 no.1 (April, 1891): 4.
[68] Ibid., 4.
[69]"Various Topics," *The University Record* 4 no. 3(November, 1894): 52.

rather than the athletic minority, reflecting the view of Sargent and other physical educators on athleticism and modern physical training.

For men, in the academic year, 1898-1899, training, comprising two hours of class work, was required for freshman in the literary and engineering fields. This numbered roughly 300 students, yet 1,192 rented lockers at the gymnasium.[70] An alumnus maintained that the first year of compulsory training encouraged the development of exercise habits. He thought that "[M]en who would not go to the gymnasium of their own free will, are convinced after a season that such exercise has a decided value and are eager to continue it."[71] The Director of the Waterman Gymnasium, Keene Fitzpatrick, concurred that numerous unlikely exercisers were keeping with their training after a year of the required physical activity. He boasted, "[T]here is nothing in the east which in any way compares with the attendance at our gymnasium. A visit here by the eastern directors would open their eyes to the fact that they are way behind the west in general gymnasium work."[72] Even though the University was over twenty years late in building a modern gymnasium, Fitzpatrick thought that they were ahead of their Eastern counterparts in student participation.

Yet, the physical training program for men was not as unanimously approved by the students. Although there were over a thousand lockers rented, the president reported that "[M]any lockers were rented by students simply for the purpose of having access to the baths."[73] He also observed that "[I]t was a very general feeling among the faculties that some means ought to be devised for awakening a more extended interest in regular gymnasium work."[74] Since most of the work was optional for students, the director faced some practical difficulties in

[70] "Is The University Gymnasium Effective?" *The Michigan Alumnus* 5 no. 51(February 1900): 203.
[71] Ibid., 205.
[72] "Gymnasium Work," *The Michigan Alumnus* 6 no. 54(May, 1900):356.
[73] *The President's Report to the Board of Regents for the Year Ending in September 30, 1897 and the Report of the Treasurer for the Fiscal Year Ending June 30, 1897* (Ann Arbor: Published by the University, 1897): 10.
[74] Ibid., 10.

"any efforts that he may make to reach large numbers or to bring about regularity in work."[75] President Angell also spoke of "a special effort" which was made "to interest the students more generally in the physical examinations."[76] This consisted of giving each student his own anthropometric chart, by which he would note his "general condition" as well as "his relation to the average student."[77] The physical director and president hoped that these exams would give students an impetus for training and an interest in their own development.

When the women's gymnasium was built in 1896, there were physical examinations and anthropometric measurements, and a class drill, made up of elements from Swedish, American, and German gymnastics. The university hired Dr. Eliza M. Mosher to be Professor of Hygiene and the Women's Dean in the Department of Literature, Science and the Arts in October of 1896.[78] Mosher had graduated from the University of Michigan Medical School, had a position as a physiology professor and resident physician at Vassar, and had a private practice in Brooklyn. President Angell persuaded her to come to the University, making her the first female faculty member at Ann Arbor. Mosher was in charge of the physical examinations, guiding gymnasium work and lecturing on in hygiene. The president noted in his report that the physical examination "brings her into close relation with the women of the University in the early months of their student life, thus giving opportunity for personal counsel at a time when it is often much needed."[79] Thus, it is suggested that the physical director had multiple roles and could have closer interaction with students than other faculty members. This would have been particularly important for women. Not one to take physical training lightly, Mosher pushed for the

[75] Ibid., 10.
[76] Ibid., 10.
[77] Ibid., 10.
[78] For more on Mosher see, Alison Marie Wrynn, "The Contributions of Women Researchers to the Development of a Science of Physical Education in the United States," (Ph.D., Dissertation, University of California, Berkeley, 1996).
[79] *The President's Report to the Board of Regents for the Year Ending in September 30, 1897,* 9.

compulsory gym requirement because she found that "gymnasium work was interrupted and made more difficult by reason of irregularity in attendance."[80]

For over twenty years, students at the University of Michigan sporadically campaigned for a modern college gym, and constantly wrote about the uses and benefits of systematic training in various college periodicals. However strong the voice was of the pro-gym contingent, it is clear that many did not take enthusiastically to systematic training. At various other colleges in the late nineteenth century, similar situations prevailed. Students expressed wishes for modern gyms on par with Harvard, publicized these aims and participated in various activities to attain them. When the gyms were created, there were mixed reactions among the greater population of students, particularly concerning compulsory physical training. While Michigan students applauded the widespread use of the gym among all students, at Hamilton College and Lafayette College, gymnasium training was seen as a way to bolster athletics, rather than to foster universal systematic training.

Gymnasiums and Athletics at Hamilton and Lafayette

At Hamilton College the students also awaited the building of a new, modern gymnasium. Located in Clinton, New York, Hamilton developed from a late eighteenth- century academy and was chartered as a college in 1812, and remained all male into the late twentieth century. In 1881, a writer for the student literary magazine described the current facility for training as, "[A]n unfinished room, whose winter temperature can hardly be raised above that of the surrounding air; a few damaged Indian clubs; horizontal bars; one or two broken ladders; a few broken ropes. For years past, such apologetic, shame-faced apparatus as we have possessed

[80] Ibid., 9.

has been purchased by the students."[81] This place had been in control of temporary committees of students over the years and was not well-managed; there was even "ruthless destruction of property."[82] However, the writer believed that students were interested in exercise because "[M]any a man keeps in his own room dumb-bells and Indian clubs."[83] Yet a gymnasium was necessary because "even of the owners of such things, we suppose that not one in five has formed the habit of their regular and systematic use."[84] Moreover, gymnasiums provided a sense of companionship and rivalry, which this writer thought was essential for the development of routine exercise: "[T]he simple desire for personal health and strength, unaccompanied by any feeling of rivalry, is not strong enough in most college men to bring them to the steady drudgery of regular exercise."[85] He wanted "a comfortable room" filled with "the ordinary appliances of the gymnasium," and sent a message to the college authorities that "the appreciation of the unaccustomed luxury of a good gymnasium would be too general and deep to permit any display of wantonness," that had happened in the past.[86]

In 1882, the gym was repaired and the university supplied a bowling alley and new apparatus. A student wrote that "[W]e longed for it, and talked about it, and wrote editorials upon it."[87] Finally, after such work "[T]he old building has put on a look of youth, and an appearance of having a purpose in life."[88] By 1885, however, the condition of this refurbished gym was viewed as "dilapidated," and a student asked, "[W]ill not the alumnus who is over-burdened with cash, who is heavily laden with the ducats, build us a first-class gymnasium, and

[81] "Athletics" *The Hamilton Literary Monthly* 16 no. 2(September, 1881):62.
[82] Ibid., 62.
[83] Ibid., 62.
[84] Ibid., 62.
[85] Ibid., 62.
[86] Ibid., 62.
[87] "Material Progress," *The Hamilton Literary Monthly* 16 no.5 (January, 1882):189.
[88] Ibid., 189.

endow some prize for athletic games?"[89] An editor lamented a recent loss to Hobart College and urged for the students to train more for athletics. He wrote that, "[T]here is no better way of inducing the men to train and of exciting an interest in athletics, than by a regular attendance at the gymnasium."[90] The student hoped that the faculty would improve the apparatus in the gym and hire a new instructor to oversee training. Moreover, he wished there to be compulsory training for freshmen and sophomores, so that students could be exposed to training and develop athletic talent early in their college years. If these changes could come, then "Hamilton need never fear that she will have to blush for her success in athletics."[91]

By 1892, the college had constructed the Soper Gymnasium and a physical director was appointed. The college found it prudent to institute mandatory training of freshman and sophomore, labeled as "practical work" in the gymnasium. The first year students had to take four and a half hours, and the second years merely two and a half hours weekly.

Although the editors of this paper often connected the importance of training to victory in athleticism, one also claimed "one's health demands more exercise than many students take. Then we owe a duty to ourselves in acquiring as great physical powers as possible."[92] Referencing work of college physical directors in anthropometry, the editor wrote in 1891 that, "[P]hysical examinations and measurements have proved that the body can be improved by systematic training patiently continued, and that the advantages of a well developed physique are well worth the pains taken to acquire it."[93] Students could not make the excuse that they did not have time for building up their bodies, for, according to the editor, "[T]en minutes each day is sufficient to keep the flesh hard and firm, and but little more time is required for a great degree

[89] "Around College," *The Hamilton Literary Monthly* 19 no.3 (November, 1884):113"Around College," *The Hamilton Literary Monthly* 19 no.6 (February, 1885):223.
[90] "Athletics," *The Hamilton Literary Monthly* 20 no. 1(June, 1886):20.
[91] Ibid., 20.
[92] "Athletics," *The Hamilton Literary Monthly* 25 no.7 (March, 1891):276.
[93] Ibid., 276.

of muscular development, if the time is regularly given."[94] Despite exhortations for a great standard of health and discipline, similar to those of Sargent, the editor of the newspaper once again revealed the priority which was reiterated over the 1880s and 1890s: "…there is one reason in particular which should appeal with great force to every loyal student at Hamilton, and that is, it is every man's duty to contribute what he can, during the season just before us, to aid Hamilton in taking even a higher position in athletics than she has ever taken heretofore."[95] In the 1890s, the editors still promoted athletics at Hamilton, yet at times it seemed to be a lost cause, leading an editor to wish for the college to "emerge from the gloom which at present surrounds her in the athletic world."[96]

Like their counterparts at Hamilton, the editors of the school newspaper at Lafayette College in Easton, Pennsylvania, supported the creation of a gymnasium for compulsory physical training, and were also vocal in asserting its role in training athletes. Affiliated with the Presbyterian Church, Lafayette College was founded in 1826, and was also all male until the late twentieth century. The gym was opened for use in October of 1884.

One writer believed that his fellow students hoped the college would hire a skilled physical director who would have "influence and authority enough to direct the work and see that it is carried out."[97] This was crucial as the writer admitted "[M]ost of us do not know how to exercise to the best advantage."[98] The man that was eventually hired was J.D. Updegrove, whose "interest in the athletics of the college we can not doubt."[99] A physician was also hired to serve as the medical director. Soon, the college required each class of students to go to a class drill twice a week. There was also physical examination of the students, in which the "weak

[94] Ibid., 276.
[95] Ibid., 276.
[96] "Baseball," *The Hamilton Literary Monthly* 29 no. 3(December, 1894):108.
[97] Untitled article," *Lafayette College Journal* 9 no. 3(December, 1883):36.
[98] Ibid., 36.
[99] "Untitled Article," *The Lafayette* 10 no. 1(October, 1884):2.

parts of the body were pointed out and special work assigned for their development."[100] The gym was fitted with "modern apparatus" including pulley weights. Apparently there were top-notch bathing facilities which Sargent declared "one of the best arranged bathing apartments in the country."[101]

A student writer considered the question of compulsory physical exercise in December, 1883, and roundly came out in favor of such a requirement. The people that would find it "irksome" were listed as "Junior orators, emaciated prospective preachers, high graders and editors." Students that were "very flabby-muscled, inactive, bilious, lazy" would "oppose a compulsory rule bitterly" even though many students "do not take enough exercise in a term to keep a boarding-school girl in health a week."[102] The writer believed that exercise would help the student to keep a positive mentality, and wrote "[H]ow often does one go into the gymnasium or on the campus feeling dispirited, cross and nerveless, and come away after half an hour of good exercise, buoyant and good tempered."[103]

Yet, most students seemed to emphasize the athletic aspect of the gym and hoped that that work in the gym would translate to a more successful college sports record. Shortly after its construction, an editor wrote that "[W]e anxiously await the fruit of its advantages. We have had good athletes without it, we certainly should have better ones with it."[104] The writer did not think that any man should be allowed to play football or baseball who did not work regularly in the gymnasium because, "[S]uch men's playing is always spasmodic and cannot be relied on."[105] The student suggested that men that did not train be barred from playing until they started to fulfill the requirement.

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[100] "The Gymnasium," *The Lafayette* 10 no. 2(November, 1884):23.
[101] Ibid., 23.
[102] "Untitled Article," *Lafayette College Journal* 9 no.3 (December, 1883):37.
[103] Ibid., 37.
[104] "Untitled Article," *The Lafayette* 10 no. 1(October, 1884):2.
[105] Ibid., 2.

The Lafayette student newspaper mainly mentioned the gymnasium under the sub-heading "Athletics." In 1884, one writer considered "[T]o obtain success in life a sound mind in a sound body is necessary. To this end college athletics were instituted."[106] Athletics promoted, "coolness, fearlessness, self-reliance, and, above, all, a manly spirit of independence" while "campus and gymnasium exercises act as a safety valve, allowing the excess of spirit and energy of the students to escape in harmless amusements."[107] From this description, and the newspaper coverage over the 1880s and 1890s, it would seem that the students valued the former. In 1887, an editor commented, "[I]t is surprising how few men are seen in the gymnasium when not required to exercise…the great majority are seldom seen in the gymnasium except at class drill and then many of them consider it a great scheme to shirk all they possibly can."[108]

In 1886, two years after mandatory drill was put into place, an editor took issue with the "double-headed rule over the gymnasium," opposing the authority of the Medical Director. Similar to other conflicts over mandatory training involving medical excuses, the editor wrote:

> The Medical Director of the Gymnasium seems to have vivid ideas of punishment thru the means of the "Gym." A doctor's certificate counts for naught and moreover it is on the tapis that no one will be excused who has brought sickness on himself by bad habits…If a man is not in a fit condition to work in the "gym" and has a certificate to that effect; that is a finality and he should be excused from the regular work. Professional courtesy, we should think, would take a doctor's word for it and would certainly not pry into professional secrets.[109]

On several occasions, students voiced a preference for outdoor activities and sports over training in the gym. In 1889, a student suggested that gymnasium drills should not take place in the warmer spring season. He wrote that, "[T]he close air of the 'gym' is not to be compared with

[106] "Athletics," *The Lafayette* 11 no. 1(October, 1885): 10.
[107] Ibid., 10.
[108] "Untitled Article," *The Lafayette* 12 no. 9(February 10, 1887):98.
[109] "Untitled Article," *The Lafayette* 11 no. 4(January, 1886):43-44.

the free fresh air that is breathed in such exercises as tennis, base ball, walking and like sports, and the benefit from swinging dumb-bells is a great deal less than from these enjoyments."[110]

In 1891, the newspaper recorded some student distaste for the class drill. Although"[A]ll of us know that exercise is necessary to the best results of intellectual training," gymnasium drills, "have again caused some discontent to those who on a nice day would prefer to watch the football practice, or, on a stormy day, to take a nap or a hand at whist."[111] The use of a routine system of training did not make allowances for weather and temperament. The writer bid students "who now grumble at the drill" to "take the medicine bravely since we know it is for our good, and show the respect due to the college by saying nothing, if we can say nothing good."[112]

As athletics became more intense in the late nineteenth century, students at colleges such as Hamilton and Lafayette thought that the appropriate gymnasium training for athletes would increase their chances for quality teams and victories. Many students emphasized that athletes needed regular conditioning rather than "spasmodic" training in this period of increasingly competitive college sports. Students supported the construction of new gymnasiums modeled on Harvard and other eastern colleges that pioneered in modern physical education. While valuing a healthy student body on one hand, the priority of some seemed to be to train to gain sports prowess and pride for their college.

Exercise and Women's Health at Vassar

The student-writers and editors for the *Vassar Miscellany* supported physical education for women, yet expressed the view that it should be interesting and recreational. In 1883, the editors claimed that, "it is certain that we take far too little interest in our calisthenic[sic]

[110] "Untitled Article" *The Lafayette* 14 no. 10 (April 17, 1889):146.
[111] "Untitled Article," *The Lafayette* 18 no.5 (November 20, 1891):70.
[112] Ibid., 70.

work."[113] They believed that, "[T]he development of mind to the detriment of the body, while it is of rare occurrence, as we believe, at Vassar, is very much to be dreaded; and a course of gymnastics which would afford muscular work at once beneficial and interesting, particularly during the days when much outdoor exercise is unpleasant, would have the effect of developing the body, and increasing our mental strength through our physical."[114]

In May 1884, the students staked their claims for a modern gymnasium on the grounds that they deserved to have physical training which would assist their mental development. They made arguments in favor of the Sargent system of prescribed exercise, ones that were very familiar in the world of physical education:

> …the mind cannot do its best work, if all the vital forces are used up in the effort to ward off physical breakdown. We college students, are here, not for slipshod, inefficient mental training, but for the best and highest of which conscientious work can attain. Hence, it is for our interest and welfare, mentally as well as physically, that our minds shall not be developed at the expense of our bodies, but that our bodies shall be trained up to the point where they will aid each added effort of the mind. [115]

In order to accomplish the goal, the writer called for "suitable gymnasium thoroughly equipped, and a carefully trained instructor in gymnastics."[116] Their current gymnasium was "adapted to general use, without any reference to the special needs of special cases."[117] She argued:

> If we were to make gymnastics our profession, it might be worth while to adapt ourselves to the apparatus, but we have no such end in view. Nor have we the time to spend in doing what we do not really need. What we do wish and intend to do, if possible, is to strengthen our bodies where they are weak, and to bring about their symmetrical development. To do this we must have special apparatus, and that is just what we do not possess…this matter of physical development and training is

[113] "Editor's Table," *The Vassar Miscellany* 13 no.8 (May, 1884):876.
[114]Ibid., 876.
[115] "Home Matters," *The Vassar Miscellany* 13 no. 8(May, 1884):881-882.
[116]Ibid., 882.
[117] Ibid., 882.

> one that will not admit of delay, if we wish to remove from woman's name the stigma of weakness, and to put in its place the badge of health strength.[118]

Here, the Vassar students, seemingly unassisted by college authorities, asserted their right to prescribed exercise which would make their bodies symmetrical. They viewed this as a way to attain health, and sought to exchange their old fashioned gymnastic equipment for Sargent's new developing appliances.

Most importantly, it was imperative to institute proper training in order to remove "the stigma of weakness." Vassar students challenged the stereotype of the weak, sick middle and upper-class female, and the sick female college student, and asserted the rights of women to the highest quality of physical training.[119] The writer seemed accustomed to the idea that a student's father would be opposed to training requirements, recounting a scenario in which a patriarch would assert "your gymnasium nearly killed my daughter. I approve of everything else about your system…but never a penny for your gymnasium, unless to induce you to burn it down. I don't believe in gymnastics for girls."[120] Yet, if training had any harsh effect on students, the writer held it was due to faulty instruction, not innate female weakness. She wrote that one woman:

> had used dumb-bells, wands, rings, with a vigorous, long–armed girl for a partner, although she was a delicate, small girl, with a sensitive spot in the spine and imperfect heart action. Her teacher had probably been an exquisite dancer, and had an infallible memory for evolutions; but had known nothing—absolutely nothing—of the effect of violent arm-exercise upon spinal irritability or upon weak muscular action of the heart. As a result, the girl drops in a dead faint in the middle of the gymnasium some day, and frightens herself into nervous prostration.[121]

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[118] Ibid., 882.
[119] Edward H. Clarke, *Sex in Education; or, A Fair Chance for Girls* (Boston: James R. Osgood and Co., 1874). See Ann Mari May, ed., *The 'Woman Question' and Higher Education: Perspectives on Gender and Knowledge Production in America* (Cheltenham, UK and Northampton, Mass.: Edward Elgar Publishing Limited, 2008).
[120] "Physical Education for Educated Women," *The Vassar Miscellany* 13 no.8(May,1884): 864.
[121] Ibid., 865-866.

Another element contributing to a possible breakdown was the constant talk about the benefits of training and physical health. The writer explained that "[T]he amount of discussion concerning the possibility of physical development and sound health during the period of education for a girl is waxing so enormous, that it threatens to induce a morbid physical self-consciousness, which will render certain the very nervous or muscular break-down which the agitators are so eager to avoid."[122] This student realized that a goal of physical educators was to prevent this sort of "break-down," which ironically, could be caused by such intense focus on developing the body. This vague idea of "morbid physical self-consciousness" could have resulted in hypochondria, neurasthenia, or an obsession with one's own physique.

Proper physical training could prevent these circumstances and bolster support for the physical training of women from fathers and other likely donors. The writer asserted that "had the so-called victim of physical education been examined by a competent physician to begin with, and had her exercise been prescribed with as much care and accuracy as would be required in the case of a diphtheria patient, for instance, another result would probably have followed."[123] The physical educator had to be aware of "physical idiosyncracies[sic]." This student writer wanted an instructor that set out "[F]irst, to find the weak place, and second, to make it, if possible, as strong as the strongest parts of the body."[124] This was a strong declaration for the use of the Sargent system at Vassar, for the writer also claimed that she "can vouch for three cases in which women of studious habits have regained lost vigor, appetite, sleep in less than a year of faithful practice with the Sargent method."[125] The use of the Sargent system would also bring, "the pleasure which comes from the consciousness of continuous physical progress."[126]

[122]Ibid., 864.
[123]Ibid., 866.
[124]Ibid., 866.
[125]Ibid., 867.

The Vassar students did not have to wait nearly as long as the Michigan students for the construction of the new gym. In less than a year, they had more than one third of the money.[127] It was completed in the fall of 1889, however as early as March of 1885, students were being measured and put to work on Sargent's machines and Mary Putnam(later Jacobi), a pioneering female doctor, was in charge of the teaching in the gym.[128] The focus on recreational activities was still strong, despite the proclamations in favor of Sargent's system. An editorial expressed the idea that some of the student preferred ice skating and that the focus on physical culture was stronger among the alumni than the current students.[129] A student wrote in 1885 that, "[W]hile our alumnae and other friends are especially interesting themselves in the subject of 'physical culture' to be attained in the walls of the gymnasium, we wish to present again our plea in behalf of a most attractive and beneficial out-door exercise."[130] Apparently, the lake was use by purveyors of ice, making it difficult to skate.[131] They proposed adding water to the lake to create a sufficient place for the students to "skate to our hearts' content."[132] The writer expressed the joyous recreation and relaxation that she found in skating, rather than gymnasium work. She noted, "[H]ow the rapid motion exhilarates, how cutting through the air refreshes the tired brain, how the scene of life and action dissipates every morbid tendency!"[133]

It appears that Vassar's old system was the subject of mockery in the 1880s. In one editorial they chided William Blaikie: "[I]t would be pleasing if Mr. Blaikie, who has

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[126]Ibid., 868
[127] "Home Matters," *The Vassar Miscellany* 14 no. 8 (May, 1885):1410-1411.
[128] "Home Matters," *The Vassar Miscellany* 14 no. 6 (March, 1885):1312-1313. On Putnam see, Carla Jean Bittel, *Mary Putnam Jacobi and the Politics of Medicine in Nineteenth Century America* (Chapel Hill: University of North Carolina Press, 2009).
[129]"Home Matters," *The Vassar Miscellany* 14 no. 8(May, 1885):1409-1411; "Editor's Table," *The Vassar Miscellany* 17 no. 1(October, 1887):27; "Alumnae Correspondence," *The Vassar Miscellany* 16 no.10 (July, 1887): 407-410.
[130] "Editor's Table," *The Vassar Miscellany* 14 no. 4(January, 1885):1185.
[131] "Editor's Table," *The Vassar Miscellany* 13 no. 5(February, 1884):737.
[132] Editor's Table," *The Vassar Miscellany* 14 no. 4(January, 1885):1185.
[133] Ibid., 1185.

occasionally made it a feature of his lectures to imitate Vassar gymnastics, as he saw them, could see the improvement of the last year or two. It is hardly fair for people who have seen one's past failings, to ridicule them, without knowing whether or not they have been corrected."[134] A writer in the Michigan *Chronicle* also poked fun at "the poor Vassar girl," because the instructions in the gym were listed as the following, "'[G]rasp the floor firmly with the foot; extend the feet straight up over the head.' "[135] Perhaps this reputation created some impetus for improved scientific physical training at Vassar.

In expressing wishes for opportunities for recreation and formal training, Vassar students who were involved in writing and editing the *Miscellany* showed varying opinions and an awareness of the larger conversation about women's health and college physical education. They powerfully asserted that women could handle physical training which was done in an appropriate, scientific manner by a qualified physical director. The common idea that women experienced various bouts of mental illness is illustrated in the focus on the ability of both training and ice skating to relieve a "morbid tendency."

The "Chronic Cutter" at Lehigh

Through the 1870s and 1880s, many students at Lehigh wanted a modern gymnasium. Some students even voiced the idea that they hoped "exercise in it will be compulsory, and at least two hours a week required from every student."[136] They thought that systematized work was important for all young people because "the ones who are poor at athletic games, and for that reason need it most, are the very ones who will be seen in the gymnasium less frequently

[134] "Editor's Table," *The Vassar Miscellany* 14 no. 7(April, 1885):1360.
[135] "Clippings," *The Chronicle* 13 no. 12(April 15, 1882):190.
[136] "Untitled Article," *The Lehigh Burr* 1 no. 2(November, 1881):15.

after the novelty has worn off, if the exercise is left optional."[137] It is highly likely that non-athletes were concerned about access to the gymnasium, and did not want it to be overrun by college athletes.

The gym construction began in May 1882 and was ready in mid-1883. Sargent's system was instituted. In May of 1883, an editor of the *Lehigh Burr* exhorted that "[T]he gymnasium is at last a reality, a fixture and joy forever."[138] He urged the students to realize the benefits of physical training and observed, "we are apt to regard this perfect machine as a costly toy and fail to grasp the real motive of its being here."[139] Illustrating the appeal of recreational activities, he observed that "the billiard tables and bowling alleys still have an unfair proportion of devotees."[140] He hoped that "their aspirations… will soon rise higher" to the systematic exercise on the located on the second floor of the gym.[141]

Despite the hopes of the editors of the *Lehigh Burr,* when the administration instituted a class drill requirement, many students were opposed, leading some of the writers to comment on the number of gym "cuts." In October of 1888, one student wrote that the prior year there was "much comment" on the number of student who "cut from class drill."[142] He reasoned that this was due to a common unavailability of the shower, "this acme of baths," and the less sanitary conditions in the other bathing areas. Exhausting all the bathing options, he "wisely cuts the gymnasium entirely."[143]

This lack of enthusiasm for class drill perturbed many student writers. In December, a student lamented that they were "sorry to see that gymnasium work this term is being greatly

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[137] Ibid., 15.
[138]"Untitled Article," *The Lehigh Burr* 2 no. 9(May, 1883):97.
[139] Ibid., 97.
[140] Ibid., 97.
[141] Ibid., 97.
[142] "Gym," "Letter to the Editor," *The Lehigh Burr* 8 no. 1(October 1, 1888):9.
[143]Ibid., 9.

neglected by the majority of the students."[144] They also chided students for wearing "ordinary street dress" which was too confining for practicing beneficial exercise. By February of 1889, the showers seemed to be improved. A student writer averred that "[N]ow that the Gymnasium is in such excellent order and with a new shower-bath, there will be no excuse for the chronic cutter to get in his work there this term."[145] Unlike the focus on creating athletes at Hamilton and Lafayette, the writer reminded the students that "[T]he primary object of a gymnasium is not to turn out athletes, although this enters largely and most properly into its results, but to give every man a place fitted up with all the modern appliances wherein he can limber up his muscles and, by preserving his body in a normal condition, be much better fitted to carry on the mental work required to obtain a degree."[146] Thus, he made it clear that the purpose of the gym was for everyone to become healthier and to be able to achieve a better body as well as mind—the idea we have seen as very popular among physical educators such as Sargent, Hartwell and Gulick in the late nineteenth century. The editor found it ironic: "When we think of the constant howl there was among the students for a gymnasium when there was none, and the constant howl there is now amongst a large percentage because the wishes of our predecessors were complied with by a generous Board of Trustees, the whole subject wears a rather ludiculous[sic] phase."[147]

In May 1889, a student detailed his woes regarding the physical examinations which were part of the physical education department procedure, since they did after all have the Sargent system. He wrote that, "[T]he complaint is constantly made that the examinations are not only a nuisance, but that instead of accomplishing any good results occasionally at least they may effect

[144] "Untitled Article," *The Lehigh Burr* 8 no. 5(December 1, 1888):49.
[145] "Untitled Article," *The Lehigh Burr* 8 no. 8(February 5, 1889): 86.
[146] Ibid., 86.
[147]Ibid., 86.

positive injury."[148] He explained that they were not merely a medical examination, "as might be supposed by the uninitiated" but a number of anthropometric measurements, and more importantly, "a series of tests of strength and endurance in which there is generally an inclination to dangerously strain in order to equal or excel previous records. It is true, if by constant and thorough gymnasium work the men were prepared to endure this, probably little harm would be done, but a very large number are in no such condition."[149] He thought that these should no longer be required for upperclassmen, whom he depicted as more studious and busy than those in the lower classes. He observed derisively that only "lower classmen take such delight" in "the pleasures of mere muscular development."[150]

In contrast to the students attending Hamilton and Lafayette, the editors and writers at Lehigh did not view the gym work as instrumental to improving college athletics, but as important for the mass of students that did not participate in sports. They were disenchanted by the lack of enthusiasm among their peers and hoped that these young men would take physical training more seriously. The situation at Lehigh in the 1880s and 1890s illustrates the diversity of opinion and reactions among students regarding the uses of the modern college gymnasium.

Student Reactions: Complaints and Excuses

From the newspaper coverage of gymnasium construction, and the commencement of departments of physical training at the University of Michigan, Lafayette, Hamilton, Vassar, and Lehigh, we see that many students supported the construction of gymnasiums, but had mixed reactions to compulsory training. At Michigan, the newspaper writers valued the gymnasium as

[148] "X", "Letter to the Editor," *The Lehigh Burr* 8 no. 15(May 20, 1889):175.
[149] Ibid., 175.
[150] Ibid., 176.

a tool for building overall physical health along the lines of the Sargent system, while at Lafayette and Hamilton, they seemed to value the gymnasium as a space for athletic training. Yet, even at Michigan, administrators observed that many students did not exercise on their own volition and thus compulsory requirements were strengthened. At Vassar, the students also understood the terms of the Sargent system and the effect of exercise upon the mind and body. While many supported gymnasium training, they also expressed desire for recreation through ice skating. At Lehigh, the editors supported training more than the majority of students, who often cut gym and complained about the bathing facilities. Evidence from diverse sources over the late nineteenth century into the early twentieth century illustrates the mixed reception of gymnasium training. While some students were indifferent, many tried to dodge the compulsory training which was passed after administrators noticed that not all students were enthusiastic about visiting the newly opened and quite expensive "temple[s] of health."[151]

As compulsory physical training and physical education requirements of various sorts grew in popularity from the 1880s to the early 1900s, physical educators and administrators were forced to deal with students seeking to be excused from the required work. These students often provided "physician's certificates" excusing them from training. Physical directors often found these excuses to be vague, dubious, and not issued with the student's best interest at heart. The frequency of these experiences attest to some resistance from students in regards to disciplined physical training as well as a conflict of authority between physical directors, the students' doctors, the students' parents, and finally, the student.

As we saw at the University of Michigan, the physical directors sought to make training compulsory in order to systematize the system of training. At Harvard, Sargent also fought for years to make training compulsory, observing that, "[N]ot over ten per cent. of college students

[151] Dudley A. Sargent, "Physical Education in Colleges," *North American Review* 315 (February, 1883):173.

pay any attention to physical education, and less than six per cent. do it systematically."[152] This was certainly the case at Bryn Mawr where the administrators found it was necessary to institute compulsory physical training when the students, "sat the day through with no uneasy pangs on their athletic consciences."[153] Similarly, at Adrian College in Michigan, the college president, D.C. Thomas, observed, "the institution had a fine and thoroughly equipped gymnasium and a competent director, yet there were two thousand students in attendance who did not avail themselves of the advantages the gymnasium afforded."[154] This led him to conclude that, "[S]tudents will not voluntarily stick to their daily practice from a merely theoretical standpoint. Abstract theories will not satisfy; some concrete and definite end must be in view."[155]

Oberlin had a rather "troublous" experience with their gymnasium. Along with funding issues throughout the 1870s and 1880s, student interest ebbed and flowed. A gym was opened in 1873, and in 1877 training became required for most students. However, by 1880 a student noted that there existed a "prevalent disposition to evade the requirement."[156] The writer continued: "There is record of one student who succeeded in getting an excuse from attendance at gymnasium on the score that he took daily exercise, feeding his chickens. The Faculty try to set down the brake by refusing to grant excuses at all. But it is all in vain."[157] The gym was closed in 1881, yet fundraising efforts ensued shortly after. In the meantime, chest weights and other modern equipment were put in the old gym, and training mandated once again. An editor of the *Oberlin Review* observed a penchant for the women not to exercise:

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[152] "College Gymnasiums," *The Medical News* 22 no. 11(March 17, 1883): 301.
[153] Alice Katharine Fallows, "Athletics for College Girls," *The Century Magazine* 66 no.1 (May, 1903):64.
[154] D.C. Thomas, "Value of Athletics to College Discipline and Moral Training," *Sixtieth Annual Report of the Superintendent of Public Instruction of the State of Michigan for the Year 1896* (Lansing: Robert, Smith Printing Co., 1897): 329.
[155] Ibid., 329.
[156] R.A. Millikan, "The History of Oberlin Athletics," *The Oberlin Review* 18 no. 34(June 2, 1891): 493.
[157]Ibid., 493.

> It has finally been decided that gymnasium shall be compulsory in the Ladies' Department, and in consequence thereof, countless imaginary disabilities have sprung into existence. But a physician's certificate is required to excuse anyone from the exercise. There have been many who refused to practice, simply because it took a little time, that it was thought best to force them to take the benefits they would not receive voluntarily. Naturally those who come here to study wish to make the best use of their time, but time is not lost in gymnasium, but comes back to one in the improved quality of the work. [158]

Students at the University of Pennsylvania were not very eager to be guided in their physical training. In 1890, the physical director, A.H.P Leuf, observed that, "[A]t present any student from any department has the right to be examined and advised, free of charge, before taking up athletics. Not many do so."[159] When faculty and administration instituted compulsory gymnastic requirements in 1904, a group of students "rebel[led]." An observer claimed that, "[C]hanging from a go-as-you-please policy to one that outlined certain very definite things to be done naturally created some friction and more or less open expressions of disfavor from students who objected to the new order of things."[160] These students went "in a body to the office of the vice-provost of the university, and there did demand that the rule be made a dead letter."[161] They also apparently burned an effigy of Tait McKenzie, the new Physical Director.[162] Yet, when the gymnasium was completed in 1904, various types of compulsory training remained in place for most students at University of Pennsylvania.

At Harvard, mild resistance to the gym and physical examination was expressed in the form of mockery in *The Crimson* and the *Harvard Lampoon.* The former provided humorous

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[158]"Untitled Editorial," The *Oberlin Review* 14 no.1 (September 28, 1886): 2.
[159]A.H.P Leuf, "Collegiate Physical Education: At the University of Pennsylvania in Particular, and at Other Colleges in General," *University Medical Magazine* 2 no. 9(June, 1890):477.
[160] "Relation of College Directors to Students' Physical Activities," *America Gymnasia and Record* 2 no. 1, (September, 1905):4; R. Tait McKenzie, "Physical Education at the University of Pennsylvania—from 1904 to 1930 – and the Gates Plan," *Research Quarterly* 3 no. 1(1932): 19-21.
[161] "Relation of College Directors to Students' Physical Activities," 4.
[162]Heather Munro Prescott, *Student Bodies: The Influence of Student Health Services in American Society* (Ann Arbor: University of Michigan Press, 2007):42; R. Tait McKenzie, "Physical Education at the University of Pennsylvania—from 1904 to 1930 – and the Gates Plan," *Research Quarterly* 3 no. 1(1932):19-21.

health advice similar in format to Sargent's *Handbook for Developing Exercises* (1882) where he divided the students into categories and provided health guidance. While Sargent provided suggestions for exercise, diet, sleep, air, bathing, clothing, and directions for running, weights, the *Crimson* focused on food and left out exercise all together. In a section marked "Exercise" they wrote suggestions for eating, among which were "[W]hen subjected to unusual mental or emotional excitement, increase the time and amount of eating, using chiefly the muscles of the lower jaw," and "[E]at vigorously, fill the lungs frequently, and do not rest until the allotted task is finished," for another group.[163] While Sargent wrote, "[W]hen muscles have been for a long time inactive, begin with light movements, and continue exercise for fifteen or twenty minutes only the first day," the student-writer joked, "[W]hen the stomach has been for a long time inactive, begin with light meals, and continue eating for fifteen or twenty minutes only the first day."[164] Poking fun at Sargent's directions for using weights, the writer added that, "[I]f the food is too strong for you, call the waiters; they will always help you, being trained to handle it."[165]

Writers for the *Lampoon* provided a mock medical history form for the freshmen in 1887 which can be seen as a criticism of the intrusive nature of such an exam and the thoroughness which might have been viewed as unnecessary. The first question was: "State clearly and accurately, in chronological order, the names of all your ancestors who have lived since 1798, and give the birthplace of those who were born between 1827 and 1839, and the cause of death of all who have died since 1817." Another question asked to mark which of the following the student may have from the following: "loss of sleep, loss of reputation, shortness of breath, sea-

[163] "'Yours for Health,'" *The Crimson* 20 no. 11(December 9, 1882):84.
[164] Dudley A. Sargent, *Handbook of Developing Exercises* (Boston: Franklin Press: Rand, Avery, & Co, 1882):5; " 'Yours for Health,'" 84.
[165] Ibid., 85.

sickness, inability to walk straight line, shortness of money." Perhaps as a jibe at the physical education department, another question was, "[E]stimate as nearly as you can how old you were three years ago, and state whether you have an unmarried sister between eighteen and twenty years of age." The mock physical examination also asked the students to provide "what diseases you have ever incurred by over-study."[166]

In 1900, Smith College authorities encouraged the junior and senior students to take daily exercise. At the time, it was only a requirement for the first two years. Senda Berenson, the Director of the Gymnasium observed that "[T]he project was greeted by students with enthusiasm…The fact that it was a request and not a requirement appealed to all." Students were urged to exercise each day and to hand in a record each month to the training department. Although begun "under the most favorable auspices," the initiative "proved an entire failure before the end of the year." Merely 30% of the students filed a record the first month, and this number dwindled to zero over course of the fall semester. The students, upon questioning, stated that their original "enthusiasm was genuine, as they were convinced of the value and necessity of exercise….However, as in academic work they often neglected one study for another in which more immediate pressure was brought to bear, so they neglected exercises which were voluntary for work that was required." Thus, the students recognized the value of exercise, but since it was voluntary, they did not make it a priority. When the faculty realized this was the case, they decided to make juniors and seniors exercise four hours a week. Once this requirement went into effect, 90% of the students filed monthly records, and the remainder "presented some excuse." Berenson emphasized in a college publication "[S]ome of us still have scruples against giving a little time each day to recreation and health!"[167]

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[166] "Admission 1887," *The Harvard Lampoon* 14 no. 1(October 21, 1886):3.
[167] Senda Berenson, "Health and Fresh Air," *Smith College Monthly* 9 no.1 (October, 1901):63.

In 1906, the administrators and faculty at the Massachusetts Institute of Technology, instituted physical examinations of the first year students shortly after building a modern gym. Out of the freshman class, one hundred and fifty men were deemed deficient is one way or another, and urged to take prescribed exercise under the supervision of the gymnasium director. Letters were sent to the student as well as his parents, advocating for appropriate training, yet only twenty-five or thirty students took the voluntary training. After this dismal showing, the college instituted a requirement including five lectures on health, exercise, personal hygiene and gymnasium training as well as eighteen weeks of training in the gymnasium, for two hours a week. Students could be excused if they took part in sports or experienced "adequate, systematic exercise in personal labor or recreation."[168]

Since its founding in 1890, the University of Chicago required a significant amount of physical training. Originally, there was a requirement of ten quarter's work in training, which was not strongly enforced and "[A]s the difficulties of enforcing the requirement presented themselves, additional rules were added."[169] After attempts were made to strengthen the requirement, a resolution was passed stating that, "students taking an excessive number of cuts will not be allowed to continue their University work until they shall conform to the requirements."[170] Even as the rules were made more stringent, the women's dean, Marion Talbot, found it difficult to compel women to exercise, and stated that in the 1890s "a very strong prejudice on the part of many women students and their friends against required gymnastics work made the task of administering the requirements quite difficult, and the labor was not lessened by those physicians who, in ignorance of the methods used of the end sought,

[168] "Physical Exercise Required," *American Educational Review* 30 no. 9(June, 1908):398.
[169] A.A. Stagg, "Physical Culture," *The President's Report July, 1897-July 1898* (Chicago: University of Chicago Press, 1899):187.
[170] Ibid., 187.

unhesitatingly supplied certificates of unfitness."[171] Although Talbot claimed that by 1899 there was much less resistance, she was concerned that many female students were living very cheaply and were not caring for themselves in the best way. They "neglect their bodily welfare," because they lived in "lodging houses" where they could not cook properly, and often ate at "cheap and unattractive restaurants" or had "a cold luncheon hastily eaten in a dressing room or recitation room."[172] Such conditions could not have been conducive to college women's health or inclination to take exercise. Talbot thought there ought to be "some oversight over the living arrangements of women students who are not members of the University houses or living with their families" while maintaining that "the utmost possible liberty should be granted to all members of the University in matters which affect their personal life."[173]

Throughout the early twentieth century, the University of Chicago had some of the most stringent and lengthy requirements of all American colleges. A poll in 1921 asked 1,168 students questions regarding the compulsory gymnasium requirement. Almost 1000 were in favor of reducing the gym requirement to 2 years, while 816 stated that they were not satisfied with how the requirement was administered.[174]

Excuses granted by doctors not associated with colleges and high schools, proved to be a rather galling problem for college physical directors. Excuses from these "family doctors" created not only a power struggle over health supervision of the student, but also a subjective dispute regarding the use of physical training and the meaning of health. The physical director of Bowdoin, F.H. Whittier, stated that excuses were something that "of course we have to meet,

[171]Marion Talbot, "Physical Culture and Health," *President's Report July 1897-July 1898*(Chicago: University of Chicago Press, 1899):128.
[172]Ibid., 129.
[173]Ibid., 129.
[174] "News of the Quadrangles," *The University of Chicago Magazine* 13 no.5 (March, 1921):178.

as in other colleges where physical training is required."[175] One deterrent was that students excused from physical training by a doctor's note had to make it up at some point. Whittier also communicated with the doctors by phone or letters when he disagreed about the basis of the excused. He concluded that, "on the whole, looking over the present condition, it seems to me that the number of students who succeed in beating the college management and getting out of physical exercise when they ought not to get out of it, is very few at Bowdoin."[176]

At the University of Pennsylvania, Leuf encountered excuses from students' parents and doctors. He wrote, "it seems strange that parents should take the part of their children in this matter, and even go so far as to send notes to the college requesting that the physical examinations and prescribed exercises be omitted…Stranger still is the fact that physicians are occasionally guilty of the same error, in some instances persisting in it against the desire and judgment of a rational and sensible parent."[177] In such cases of "well-meant interference" Leuf wanted the physical directors to have authority over parents and other doctors, declaring that in most cases a "peremptory order forbidding all exercises" was incorrect.[178]

Excuses were also a problem at high schools. William Orr, the Principal of Springfield High School, related the experience of a parent who sought to have her daughter excused from gym:

> A woman came to me the other day and said, "My daughter is very nervous. She is working too hard in your high school. She is troubled about her studies. She does not sleep. Her appetite is falling off. I wish you would reduce her work." I said, "Certainly." "Then I wish you would excuse her from physical exercise." I replied, "My dear woman, the School Committee has ruled that as essential." This is a very good argument, you know. "I will excuse her from some of her regular studies." "Oh, no," she said, "I don't

[175] F.H. Whittier, "Discussion," *Official Report of the Twenty-Second Annual Meeting of the New England Association of Colleges and Preparatory Schools* (October, 1907):97.
[176]Ibid., 97.
[177]A.H.P Leuf, "Collegiate Physical Education," 478.
[178]Ibid., 478.

> want that. You see she is suffering from nervous overstrain, and I want her to be excused from the physical training."[179]

As a school principal, William Orr had the authority to speak in this manner to the parents. Physical educators, especially women, did not always have such authority.

"It is a common experience with us all to have just those girls we might help the most, taken absolutely out of our reach by physician's certificates, signed, more often than not, by men who have not taken the trouble even to question as to the nature of the work they are denouncing, to say nothing of investigating its merits."[180] In this statement, Helen M. McKinstry expressed the common frustration which Leuf and others had experienced. As the Director of Physical Training for Women at the Pratt Institute in Brooklyn, she found this to be "a very sore subject for most of us."[181] For McKinstry, it was not just a problem of doctor versus physical director, but a conflict between male doctors and female physical directors who taught female students. The male doctors were willing to simply excuse women, while the female physical director sought to reform the women's health through physical training and to push the pupil. Attesting to the commonness of student excuse-seekers, she wrote, "[I]n schools where it is *called* compulsory, there are always a good number of pupils excused from work in physical education, because they are physically in such bad condition that safeguarding their health, developing and educating their bodies(are not these the function of physical education?) would apparently be injurious."[182] For her part, she sought to create alternative classes for students who were excused from the regular classes and cited such work being done at Wellesley, Smith College, the State

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[179] William Orr, "Discussion," *Official Report of the Twenty-Second Annual Meeting of the New England Association of Colleges and Preparatory Schools* (October, 1907):87.
[180] Helen M. McKinstry, "Administration of Physical Education for Girls and Women," APER16 no.6 (June, 1911):372-373.
[181] Ibid., 373.
[182] Ibid., 372.

Normal University of Illinois, and high schools in Detroit, Newark and Philadelphia. These alternatives ranged from classes on breathing and resting, to walking and corrective work.[183]

McKinstry illustrated various ways for high school physical education teachers to make it difficult for students to be excused, which also attest to the commonness of this problem. In 1905, a teacher named Miss Barnes began at Brookline High School and was "quite discouraged at the lack of interest, disorganization and ease with which doctors' certificates could be procured."[184] Then, the school employed their own doctor, a woman named Dr. Bond, who had some authority to challenge the doctor's certificates. In 1906, 45 pupils were given excuses from doctors, but by 1910, none were given excuses. McKinstry found a similar situation in Springfield, Massachusetts and she made the process of granting excuses more regulated and difficult, requiring an initial letter from the family doctor, a letter from the school physical director to the principal relaying the information, a letter from the principal to the doctor asking for the specific disease or ailment responsible for the excuse, to be followed by the physician's reply. In doing so, she may have worked with Principal Orr, who was amenable to the cause of physical training and also worked in Springfield. This method was used in Boston, Newport, Rhode Island, and Newton, Massachusetts where the director claimed that this system decreased the number of certificates by 50 per cent.[185] Using such a method made physicians more accountable for excuses that they granted to female students, and involved the principal, a stronger authority figure than a female physical director, in enforcement of physical education requirements.

[183] Ibid., 373.
[184]Ibid., 373.
[185] Ibid., 373-374.

Some of the most vocal students at the University of Michigan, Vassar, Lehigh, Hamilton and Lafayette College urged their respective institutions to construct modern gymnasiums complete with Sargent apparatus, bathing facilities, and the other trappings of the late nineteenth century gymnasium. Editors and other contributors to the publications at Michigan, Vassar and Lehigh concurred with many ideals of the leading physical trainers and wanted the entire student body to participate in structured, disciplined, individualized, compulsory training based on the Sargent System. Envious of Harvard and other schools that created modern gyms in the early 1880s, they publicized their views and, at Ann Arbor, went to great lengths to obtain funding for the gyms. Students at Lafayette and Hamilton, while maintaining the importance of the mind-body connection, mainly emphasized the importance of the gymnasium as a vehicle for training athletes to improve their college sports.

Editors and writers often expressed their dismay when people cut required gym sessions and apathetically attended compulsory drills. College authorities, having spent large sums of money on the gyms, found it necessary to pass compulsory training regulations in order to get proper use for the gymnasium. It seems that the reception of these gyms was mixed, and that many students did not make physical training a priority. Moreover, many, especially women, found it easy to get excuses from doctors to evade the requirement. This led to conflict and power struggles among the student, doctors, parents and physical directors.

However, this conflict was one among many that occurred in the field of physical education and hygiene. In addition to struggles among students, parents, doctors, and physical educators, there was much in-fighting among physical educators over the various methods of training and the value and methods of anthropometrical examinations. Dudley Sargent faced criticism, while also finding fault with many instructors involved with training. The contentious

actions and views of this period will be explored in Chapter Six. Formal physical training came under severe criticism, while play and athletics gained new prominence at the beginning of the twentieth century.

Chapter 6. "Over Forty Years of Almost Continuous Conflict in Behalf of Physical Training": Problems in Prescribed Exercise and the Rise of Athletics

In 1909 Dr. Dudley Sargent reflected that he had witnessed "over forty years of almost continuous conflict in behalf of physical education."[1] As a passionate advocate of universal physical training and true believer in his system of prescribed exercise, Sargent was often at the center of these conflicts. Taking his profession extremely seriously, he defended his views and hoped to shape the landscape of physical education and health practice. Among the most important topics contributing to this incessant conflict were systems of gymnastics or athletics, methods of anthropometry, and the nature and scope of required physical education.

The "Battle of the Systems" of the 1880s and 1890s had a lasting impact on physical education and reveals the high stakes of the field as opponents sought influence over the budding physical education programs throughout the nation. As seen in Chapter Three, physical educators believed the potential for their field to make a great impact on American society. Thus they took it seriously, and did not want to make careless errors, especially when many people already thought physical training was unnecessary. Additionally, nationalism played a role, as German and Swedish people supported their national systems, and Americans forged their own based on their understanding of "school disease" and American nervousness. Moreover, the lack of unity in physical education illustrates the difficulties in implementing biological engineering. While many in the field agreed that there was a basic necessity to supervise physical training in order to elevate the mass of students, the ways to do this and the health standards to follow were a subject of contention.

Anthropometry was one of the most important topics for physical educators in the late nineteenth century. As seen in Chapter Four, Sargent's system of anthropometry became

[1] Dudley A. Sargent, "The Future of Physical Education," *Putnam's Magazine* 7 no. 10(October, 1909): 14.

widespread throughout American colleges, universities and YMCAs. Additionally, students were aware that it was the current, leading system of training and that it was separate from athletics. Disputes within anthropometry often contained elements of rivalry over leadership in physical education along with important disciplinary debate. Measuring students and prescribing exercise also involved defining health standards and gaining legitimacy for the entire physical education endeavor. If physical educators could not illustrate that students improved through required physical training, then they could not keep touting that there was a great demand for their work.

Debates over requiring physical education tended to take a philosophical tone. Many asked whether it was within the power of the state or school to mandate physical education. If so, was Sargent's system the best type? Did his work lead to a standardization of the body, rather than a development of unique strengths? Moreover, should people be so self-conscious of their own health and development, seeing exercise as a duty? Critics wondered if this health-consciousness was really a valuable attribute for individuals.

As the twentieth century began, more physical educators came to value games and sports. They likely took note of resistance to formal work among students as seen in Chapter Five, and were likely influenced by G. Stanley Hall's recapitulation theory. If the goal was to promote lifelong physical activity, then many physical educators came to believe inherently interesting or enjoyable activities would be more useful. Additionally, physical education was coming to be more closely associated with sport than medicine, and fewer physicians were becoming professional physical educators.

The rise of play during this period has been linked to the decline in the medical side of physical training. Roberta Park has connected the proliferation of play to the "ascendance of the

psycho-social over a physiological perspective and an *educational* over a *hygienic* perspective." There was also a decline both in physicians entering the field and the amount of laboratory research.[2] According to C.W. Hackensmith, the renovation of medical curriculum by Abraham Flexner in 1908 decreased the numbers of medically-trained professionals who sought employment as physical directors.[3] This development also coincided with the rise of school hygiene in America's public schools. By studying physical education and hygiene together as the project of biological engineering, we can see that this void in medical oversight was taken on by new school hygiene initiatives. The medical side of physical education was gradually and unevenly subsumed by school medical inspection and health supervision practices, as will be examined in Chapters Seven and Eight.

"Battle of the Systems" and National Character

In the late nineteenth century, as doctors and educators were making efforts to professionalize physical training, and school and college administrators were taking health into consideration, people with a stake in physical education argued about the type of training system to put into place. These conflicts involved many outside of collegiate physical training such as elementary and high school educators, German gymnastics instructors operating in the Turner Societies and Swedish gymnastics instructors at various private institutions. The two prominent systems were Jahn's German and Ling's Swedish. Those that were referred to as the American camp did not strictly abide by either of these systems, but often saw benefits in both. However, physical educators shied away from those they labeled "faddists" or opportunists. In his physical education report for the United States Bureau of Education Hartwell wrote that "not a little

[2] Roberta J. Park, "Physiologists, Physicians, and Physical Educators: Nineteenth Century Biology and Exercise, *Hygienic* and *Educative*," *Journal of Sport History* 14 no. 1 (Spring 1987):59-60.
[3] Charles William Hackensmith, *History of Physical Education* (New York: Harper & Row, 1966).

hubbub has arisen from various groups of would-be reformers and minor prophets, who are quick to scent an opportunity to call public attention to themselves and their crude and inept schemes for hastening the millennium."[4] He derided these "systems and systemettes[sic]" which often focused on breathing exercises and speech.[5]

While Sargent's method of physical training was gaining popularity at the collegiate level, the system proved to be too time-consuming and costly for America's public schools. Without the necessary funding for the construction of gyms and Sargent's equipment, public schools were left to create physical training initiatives that did not require expensive apparatus and that were easy to conduct in small spaces, such as between desks or in hallways.[6] Gulick observed that in 1892, most schools did not consider the Sargent system. Rather the "advocates of the German and of the Swedish systems of gymnastics are contending with each other for general adoption in the public schools of the country."[7]

Those who did not abide by Swedish or German methods sought to create their own types of systems. They might incorporate one of the national systems, include types of games and sports, or other types of formal exercise. Many of the so-called American physical educators focused on the nervousness of American children and believed that the other national systems were not suitable for American children's tendency towards nervousness. Moreover, the medical examinations, which were a component of the Sargent system, were gradually adopted in schools. By the early 1900s many school districts would begin to examine their schoolchildren through mandatory medical inspections. Years of collegiate measurement and hygiene publicity had made this idea more acceptable.

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[4] Edward Mussey Hartwell, "On Physical Training," *Report of the Commissioner of Education, 1897-1898 Volume 1* (Washington, D.C.: Government Printing Office, 1899):550.
[5] Ibid., 550.
[6] Deobold B. Van Dalen and Bruce L. Bennett, *A World History of Physical Education: Cultural, Philosophical, Comparative* 2ed. (Englewood Cliff., N.J: Prentice Hall, Inc., 1971 [1953]),402.
[7] Luther H. Gulick, "Editorial," *Physical Education* 1 no.3 (May, 1892):41.

The conversation regarding the "Battle of the Systems" illustrates several important ideas from early physical education. The intense debates and heated rhetoric reveal that these conversations were highly emotional for some speakers. Numerous advocates sought to defend their systems, which were often regarded as significant cultural traditions. Physiology and scientific methods were also quite important at this time, as many physicians were entering the leading physical director positions. Thus, Americans prodded the German gymnasts to explain their system in a scientific way. Similar to Hartwell, those in the American group generally stressed the combination of hygiene and exercise for developing the nerves of young Americans. Consequently, the Turners resented this sort of "medicalization" gymnastics or sports in both the Swedish system and the American system.

The "Battle of the Systems" was generally thought to have begun in the 1880s and lasted into the early twentieth century.[8] A good deal of the debate took place at the meetings of the American Association for the Advancement of Physical Education, and in the pages of the German publication *Mind and Body* and the YMCA-affiliated *Physical Education*, published by Luther Gulick's Triangle Publishing Company. Among those listed on the Advisory Committee of the latter were Sargent, Hartwell, Edward Hitchcock Jr., Edward Hitchcock Sr., Eliza Mosher, William G. Anderson, and Mary Bissell. They all held medical degrees, had leadership roles in the AAAPE and were associated with college physical education. On the other hand, *Mind and Body* was edited by Midwestern gymnastics instructors Karl Kroh, Werner (W.A.) Stecher and Hans Ballin, with the latter two holding positions in the North American Gymnastic Union, the main American Turner organization.

[8] Paula D. Welch and Harold A. Lerch, *History of American Physical Education and Sport* (Springfield, Ill.: Charles C. Thomas, 1981), 107-121.

A language barrier most likely contributed to a lack of understanding among some members of the physical education community. Hartwell noted that the Turners were "inaccessible" because they published and spoke in their native tongue. While they began to promote English language courses and publishing in the 1880s difficulties remained into the 1890s.[9] For instance, when the German-born E.H. Arnold spoke at the AAAPE in 1895, Baroness Posse observed that he had, "such a rapid utterance that much of his paper was not understood."[10] Gulick also noted that the Swedish-born Claes Enesbuske wrote well but was not skilled at impromptu debating that took place at the AAAPE meetings.[11]

The German system advocates began to frequently attend the AAAPE conferences in the early 1890s. It seemed that the Turners, with their mix of socializing, showmanship, cultural activities and entertainment, were not taken seriously by the physiologically-inclined Americans and Swedes. Yet, the German gymnasts claimed to be very influential, and wanted their due credit. The other groups asked them continuously to clarify the principles of the system.

In the early 1890s, Werner A. Stecher and Luther Gulick had several published exchanges regarding the German system and the system of the YMCA. While imploring Gulick to learn more about the German system, Stecher also held that it was gaining popularity at many Y.M.C.A's. Realizing that his advice was "somewhat uncalled-for" he asked to be excused because he was "deeply interested in the advance of gymnastics, being almost raised in a gymnasium."[12] Gulick, in turn, maintained that the Turner's work was not "the final solution of the problems" presented in gymnastics training at schools and YMCA chapters.[13] He invited more discussion and debate on the subject. Stecher replied the following August, taking issue

[9]Hartwell, "On Physical Training," 560-561.
[10] R.M.P, "Some Details of the Papers," *The Posse Gymnasium Journal* 3 no. 5 (May, 1895):5.
[11] "German versus Swedish," *Physical Education* 1 no. 3 (May, 1892): 42.
[12]Wm. A. Stecher, "Dr. L. Gulick," *Physical Education* 1 no. 4 (June, 1892): 62.
[13] Response to Stecher, *Physical Education* 1 no. 4 (June, 1892): 62.

with the journal's summation of a gymnastics conference in which he claimed the author failed to cite an original German source. Stecher believed that this proved the YMCA needed to study more German sources. He wrote that, "[Y]ou will find there an astonishing wealth of carefully arranged material not only for your present, but also for future use, should you ever extend the scope of your work to women and children."[14] He seemed to be chiding the YMCA for not working with women. Gulick thought that Stecher's claims were overdrawn, writing that if the Germans did in fact solve the problems of physical education, "they have been remiss in the matter of informing the public about it."[15] Papers that had been presented by Turners "have utterly lacked that scientific spirit and that physiological basis without which we can accept nothing in these lines."[16] Moreover, Gulick criticized German gymnastics groups for their "marked disinclination to work with others along these lines, which is not true of the teachers of the Swedish gymnastics."[17] Hartwell also agreed that the "Turners were somewhat chauvinistic and "inaccessible" prior to 1885.[18] Gulick urged for greater cooperation among the physical educators as well as transparency regarding the principles of the German system.[19]

Edward Hitchcock Jr., also wrote that German writers did not adequately explain their system. He criticized the work of one such writer, William Fleck, who had written, "[A]ny compilation of material for gymnastic exercise, arranged after a certain principle, is called a system of gymnastics."[20] Hitchcock responded that this was not a principle but merely an arrangement.[21] Upon seeing this criticism, the editors of *Mind and Body* became defensive. Why must the premises of their gymnastics always be questioned? They snidely added,

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[14]Wm. Stecher, "A Letter," *Physical Education* 1 no. 8 (October, 1892):161.
[15]"Mr. Stecher's Letter," *Physical Education* 1 no. 8 (October, 1892): 150.
[16]Ibid., 150.
[17]Ibid., 113.
[18]Hartwell, "On Physical Training," 560-561.
[19] "Editorial," *Physical Education* 3 no. 4(June, 1894): 61.
[20]Edward Hitchcock Jr., "Mind and Body," *Physical Education* 3 no.2 (April, 1894): 30.
[21] Ibid., 30.

"[P]lease explain the principles of your theory of gymnastics by which you taught it, previous to the arrival of (Swedish gymnastics teachers) Posse and Enebuske to this country?"[22] If it was not enough to give all credit for Hitchcock's work to the Swedes, the editors also praised the Germans with no small achievement: "Since the time of Dr. Follen, a pupil of Jahn, who taught gymnastics at Harvard as early as 1826, the Germans have informed you and the American people about physical training. We have patience, a good deal of patience!"[23]

At the 1892 annual AAAPE conference the "Battle of the Systems" stormed onwards. Of the nineteen formal speeches, six focused on a particular system, seven additional speeches mentioned systems at length, and the open discussion featured spirited debates about the systems. Within these debates about how to create healthy people there often resided an element of nationalism. Those on the German side were apt to refer to the tradition of Jahn and Speiss, as well as the bravery of German Turners in the American Civil War while the Swedish group referred to their system's originator, Henrik Ling.[24]

At the 1892 meeting, one advocate of the Swedish system, Gulli Oberg, claimed that their system was the best, and criticized the German's "ostentatious exhibitions where a few selected pupils are brought out in order to surpass others by showing off some bragging numbers before a crowd of applauding spectators."[25] For the German side, Stecher maintained that the revered Swedish system had in fact been dictated from Ling's deathbed. Stecher quoted DuBois-Reymond's notable criticism: "Only one half-educated, one who does not see the arbitrary

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[22]"Remarks and Comments" *Mind and Body* 1 no. 2(April, 1894): 12.
[23]Ibid., 12. Charles Follen was the first professor of German at Harvard from 1826-1835. He supported the building of the first gymnasium at Harvard, but no required work of curriculum change was put in place. Follen was dismissed in 1835 over problems with Harvard President Josiah Quincy. See also Carl Betz, "Swedish Versus German Gymnastics," *Mind and Body* 1 no. 1(March, 1894):11-12.
[24] Francis W. Parker, "Discussion," *Proceedings of the AAAPE at Its Seventh Annual Meeting,* 1892 (Springfield, Mass.: Press of Springfield Printing and Binding Co., 1893):196.
[25] Gulli Oberg, "The Best System of Gymnastics for Use in American Schools," *Proceedings of the AAAPE at Its Seventh Annual Meeting,* 1892 (Springfield, Mass.: Press of Springfield Printing and Binding Co., 1893): 136.

construction, and to whom a hollow symbolism, a dry schematism, a pedantic terminology, and a few anatomical and physiological crumbs seem deep science, and who does not see the errors, will be impressed by Ling's work."[26] Claes Enebuske, who lectured on Ling at the Boston Normal School of Gymnastics, gave a lengthy response to Stecher. When he propounded that Stecher's main sources of information, Rudolf Virchow and Emil DuBois-Reymond, were not even gymnasts, many in the crowd shouted "No! No!" and asserted that they were both trained gymnasts.[27] Enebuske proceeded to praise the Swedish system, excused Ling for his lack of anatomical knowledge, and finally resorted to telling stories of regale about his homeland, referring to the Vikings as "great warriors" who "ravaged the shores of Europe" where they "inoculated … more effeminate races with a little of their own manly valor."[28] Gulick commented in *Physical Education* that it was "unfortunate" for Enebuske to answer Stecher's presentation "for, while Dr. Enebuske is an able writer, he is not good in off-hand debates, and the impression left was weak."[29] After Enebuske's remarks, there was a motion for limiting comments to three minutes, which was opposed but passed for five minutes. Shortly after, Carl Kroh stepped in to defend of the German system, maintaining that it encompassed all of the movements found in the Swedish system. He credited to Jahn "the advent of that era of physical and mental regeneration which to so great an extent has made possible Germany's present power."[30] Baron Nils Posse, a Swedish leader, was more moderate than the other partisans, claiming that each system had merit and much in common. Posse believed that each nation should create their own system of training based on national needs, and that physical educators

[26]W.A. Stecher, "The German System of Physical Education," *Proceedings of the AAAPE at Its Seventh Annual Meeting,* 1892 (Springfield, Mass.: Press of Springfield Printing and Binding Co., 1893):141-142.
[27] "Editorial, "A.A.A.P.E," *Physical Education* 1 no. 3 (May, 1892): 42.
[28]Dr. Enebuske, "Discussion," *Proceedings of the AAAPE at Its Seventh Annual Meeting,* 1892 (Springfield, Mass.: Press of Springfield Printing and Binding Co., 1893):152.
[29] Editorial, "A.A.A.P.E," *Physical Education* 1 no. 3 (May, 1892):42.
[30]Karl Kroh, "Untitled Paper," *Proceedings of the AAAPE at Its Seventh Annual Meeting,* 1892 (Springfield, Mass.: Press of Springfield Printing and Binding Co., 1893):155.

should borrow from other systems.[31] Rather than follow systems strictly, it was crucial to "'[S]tudy your pupils, learn his individuality, and adapt your exercises to his needs.'"[32]

As the battle continued, one key criticism put forth by the Turners, such as Carl Betz and Hans Ballin, was that the Swedish system was too medicalized. An American-born physical director working in Kansas City, Betz claimed that the Germans had popularized gymnastics after the 1848 immigration. Then, in the 1870s and 1880s, a few immigrants attempted to "pluck for themselves the gymnastic fruits" from the seeds planted by the Germans.[33] These men were advocates of Swedish gymnastics, concentrated in Boston, who made a habit of "continually flaunting the human skeleton before the eyes of pupils and students."[34] Betz opposed this medicalization of gymnastics and thought that instructors should not have to treat "invalids."[35] Moreover, "[T]he youth needs physical training *now* and it would be too late to do any good, were we to wait until every district school could procure and pay a gymnastic professor with an M.D. attachment."[36] Ballin, co-editor of *Mind and Body,* loathed the imagery of the weak, round-shouldered, nervous student, which was featured in American publications. Students should not be treated as a potential invalids on the verge of "untimely death;" such attitudes could be psychologically damaging. He affirmed that "[W]hen we look upon these young persons as invalids, we cannot expect a healthy atmosphere in these gymnasiums…*The*

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[31] Baron Nils Posse, "Discussion," *Proceedings of the AAAPE at Its Seventh Annual Meeting,* 1892 (Springfield, Mass.: Press of Springfield Printing and Binding Co., 1893):165-166.
[32] Ibid., 165.
[33]Carl Betz, "Swedish Versus German Gymnastics," *Mind and Body* 1 no. 1 (March, 1894): 11.
[34] Ibid., 12. On early Swedish gymnastics see George H. Taylor, *An Exposition of the Swedish Movement-Cure* (New York: Fowler and Wells, Publishers, 1860); Charles Fayette Taylor, *Theory and Practice of the Movement Cure: Or, the Treatment of Lateral Curvature of the Spine; Paralysis; Indigestion; Constipation; Consumption; Angular Curvatures, and Other Deformities; Diseases Incident to Women; Derangements of the Nervous System; and Other Chronic Affections by the Swedish System of Localized Movements* (Philadelphia: Lindsay and Blakiston, 1861).
[35] Ibid.,12.
[36]Ibid., 12.

gymnasiums are no hospitals."[37] Physical educators and directors were making "natural" physical activity "so odious by watching…every step a pupil takes, as one would a sick person."[38] Prescribed exercise overlapped too much with medicine and the self-conscious medical element in this type of work was detrimental to the true spirit of gymnastics.

Men and women in the American camp were sometimes critical of gymnastic drills and classroom calisthenics which were frequently associated with the Swedish system. In America, where students did not get enough recreation and were already taxing their nervous resources to the limit, mechanical drills were the last thing that was needed. Gulick wanted exercises which would not "further tax their wills, and thus nervous system," but that would "take and secure muscular strength and have less nervous drain."[39] While Swedes benefited from their system of "intense concentration and self-control" the system was not as beneficial to Americans since "the nervous conditions of American city children are very different from those found in Sweden." He urged that "[T]he American child is not the Swedish child and cannot be similarly treated."[40] In a similar vein, George Fitz, Sargent's colleague at the Hemenway Gymnasium, believed the Swedish system to be a "nervously exhausting and deadening drill" that "adds fatigue to fatigue, by taking the initiative away from the child and forcing him to pay constant and close attention to the orders of the teacher, that he may execute with precision entirely uninteresting and conventional movements."[41] Mary Allen, who supervised a Boston gymnasium for women, also sought distance from the Swedish system, positing that "[W]ith brain and nerve centres already

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[37]Hans Ballin, "The Olympian Games at Athens," *Mind and Body* 3 no. 26 (April, 1896): 27.
[38]Ibid., 27.
[39]Luther H. Gulick, "Physical Education: A New Profession," *Proceedings of the AAAPE at Its Fifth Annual Meeting,* 1890 (Ithaca, N.Y.: Andrus & Church, 1890):63.
[40] Gulick "The Relation of Physical Culture to Education in General, (Concluded)," *The University Magazine* 5 (November, 1891):1035.
[41] G.W. Fitz, "The Hygiene of Instruction in Primary School," *National Education Association Journal of Proceedings and Addresses 37* (Printed by the University of Chicago Press, 1898):548.

too much taxed, surely exercise…should be arranged as to relieve and to give as much fun as possible."[42]

Rebecca Stoneroad, Director of Physical Training for Washington, D.C., likewise stressed that modern schoolchildren were "children of a nervous age" often "presided over by a nervous teacher."[43] Having visited Germany and Sweden to observe their physical education systems, she found that both had useful components, but also had much that was missing. In America, there was a need for a new system which was "soothing to the overwrought nerves of teachers and pupils."[44] Stoneroad and the school faculty also wanted to individualize training so that they could strengthen pupils where they were weakest, as per the Sargent system. However the work had to be done within the classrooms because the public schools lacked gymnasiums and halls. She focused on simply breathing, standing, and stretching exercises, stating that "the exercises have been hygienic in their purpose," and aimed to "increase the general health, rather than develop muscle."[45] Stoneroad's efforts show how it was difficult to employ Sargent's scientific system of training in public schools that lacked funding. It also illustrates how some physical directors contrasted Americans to the other national groups; the former were more nervous, and exercises had to be based on hygienic concerns of building health.

As numerous people expended a great amount of time and energy defending their systems within these verbal and written debates and arguments, several observers thought the "battle" was out of touch with practical concerns. Merely gaining support for any type of training in public schools was still a challenge. The time spent debating theories of training was

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[42]Mary E. Allen, "Physical Development of Women and Children," *Proceedings of the AAAPE at Its Fifth Annual Meeting,* 1890 (Ithaca, NY: Andrus & Church, 1890):19.
[43] Rebecca Stoneroad, "Report of Physical Culture in the Public Schools of Washington, District of Columbia," *Proceedings of the AAAPE at Its Seventh Annual Meeting,* 1892 (Springfield, Mass.: Press of Springfield Printing and Binding Co., 1893):171.
[44] Ibid., 171.
[45] Ibid., 171.

wasteful, according to Dr. Clyde E. Ehinger, an attendee of the AAAPE conferences and normal school professor.[46] At the contentious 1892 conference, an unheeded call for cooperation was issued by Francis Leiter, a representative for the Women's Christian Temperance Union, whose goal was to lobby for mandatory training in Ohio, in conjunction with temperance education. Leiter recognized a divide between not only the Swedish, German, and American schools of training, but also between those in higher education, primary education and reform organizations. Physical educators could debate all they wanted, but the real problem of reaching all children remained. [47]

Hartwell thought that the "Battle of the Systems" produced fruitful discussion. It was much better to conduct lively debate than to have conflict between "uncritical and intolerant partisans."[48] He believed the battle was still being waged in 1898 but with "less acrimony than at first."[49] George Meylan dated the battle between 1885 and 1895, and found that it "stimulated individual thought and research, and resulted in more rapid progress than would have ensued from the early adoption of a uniform system."[50] However optimistic these two leaders might have been, the battle frustrated general educators and reformers, such as Leiter, who found the debates counterproductive and pedantic. Physical educators also gained a reputation for contentiousness. President of Iowa State Normal School, Homer H. Seerley observed "so much controversy among leaders" that "school boards, superintendents, and principals are beginning to prefer military tactics as a substitute to the constant difficulties that arise from the controversies

[46]C.E. Ehinger, "Discussion," *Proceedings of the AAAPE at Its Seventh Annual Meeting,* 1892 (Springfield, Mass.: Press of Springfield Printing and Binding Co., 1893):184.
[47] Mrs. Leiter "Discussion," *Proceedings of the AAAPE at Its Seventh Annual Meeting,* 1892 (Springfield, Mass.: Press of Springfield Printing and Binding Co., 1893):168-169.
[48] Hartwell, "On Physical Training," 550.
[49] Ibid., 550.
[50] George L. Meylan "Presidential Address," APER 16 no. 79 (June, 1911): 354.

mentioned, even if military tactics is not a substitute for gymnastics."[51] The conflict might have swayed people to favor sports, such as a Philadelphia doctor who exclaimed, "let both teachers and scholars join in the good old-fashioned sports that have descended through the generations and are worth for health-giving exercise a dozen gymnastic 'systems' rolled into one."[52]

This battle left an indelible mark on the field of physical education. In 1919, Thomas A. Storey, a leading physical educator, told a group of graduating physical education students:

> The time for systems of physical education is past, just as the time for special systems in medicine is past. Above all, don't try to originate a system of your own! Physical education has been misunderstood, misjudged, retarded, and injured by stubborn and blind devotion to various systems. I beg you to keep an open mind; don't add a new system of your own… Avoid the idea that everybody else is wrong and that you only are right or that you are operating physical education in the only way that it ought to be carried on.[53]

During the early stage of the battle in 1889, Edward Hitchcock commented, "I do not know what to say about children, except that we have had ten of them at our house; but as to children in the public school schools I do not know anything about them."[54] Although Hitchcock was a leading physical educator, like others in the colleges, he was more concerned with college-level physical training and anthropometry. This was another area of passionate debate and argument, occurring alongside the debates over systems of physical education.

Anthropometry: Disputes, Doubts and Divergence

During the 1890s, anthropometry developed into a subject of transatlantic intellectual discussion as physical educators, doctors and scientists became interested in methods of

[51] H.H. Seerley, "Answers to Mind and Body's Inquiries" *Mind and Body* 2 no. 23 (January, 1896): 220.
[52] M.D. Sterling, "Little Pale Faces—What Shall We Do for Them?" *The Annals of Hygiene* 8 no. 6 (June, 1893): 359.
[53] Thomas A. Storey, "To a Graduating Class in Physical Education," APER 24 no. 2 (February, 1919): 104.
[54] Edward Hitchcock, "Some Principles regarded as Essential in the Direction of the Department of Physical Education and Hygiene," in *Physical Training. A Full Report of the Papers and Discussion of the Conference Held in Boston in November, 1889,* ed. Isabel C. Barrows (Boston: Press of George H. Ellis, 1890): 56.

measuring and analyzing health. Systems of anthropometry, many closely replicating Sargent's system, thrived at colleges, universities, YMCAs and private gyms. Sargent had popularized the topic and helped spread it throughout these institutions and through his influential leadership and his training school. Sargent and Hitchcock, the leaders in the field, took part in several heated debates which sometimes became personal quarrels. Others joined in the conversation, interested in prescribing exercise and the research agenda that anthropometry entailed. Even though their methods also came under scrutiny, their enthusiasm in taking measurements illustrates the eagerness of many to contribute to the leading topic in their field.

By the turn of the twentieth century, a large number of physical educators expressed frustration with both the extensive amount of measurements required, and the percentile system of analysis which Dudley Sargent had popularized. Sargent continued his anthropometry, but also began to experiment with other methods of examination and analysis, as seen in Chapter Four. Many physical directors such as George Meylan, C. Ward Crampton, James H. McCurdy, increasingly focused on bodily function rather than anatomical form, marking a shift in health research.

The anthropometry disputes date back to the 1885 founding of the AAAPE when William G. Anderson invited sixty men and women from the field to gather at the Adelphi Academy in Brooklyn, New York. They chose Edward Hitchcock to fulfill the role of acting Chairman, and in elections that followed elected him President of the new association. Three vice-presidents were also named: Dudley Sargent, Helen C. Putnam and E. L. Richards. In an open forum, Sargent brought up anthropometry, stating that he was about to publish a detailed account of his work at Harvard, but did not think he had enough data from which to draw valid conclusions. He held that, "[A] wide basis is needed before we generalize and formulate tables and rules. We

may help each other."[55] Edward Hitchcock, who had already published anthropometric studies, seemed to agree with Sargent and, along with Anderson, formed a committee on Statistics and Measurement.[56] At the following meeting, Sargent was credited with presenting a list of anthropometric measurements, which became the standard for the association.

At the 1887 meeting, tension developed between Sargent, Edward Hitchcock, and Hitchcock's son, also named Edward, who taught physical education at Cornell. Hitchcock expressed disappointment that Sargent had published an anthropometric chart without the statistical evidence that was its basis.[57] He exclaimed that many people were "eagerly waiting" for Sargent's data, "hoping that…they would help clear away some of the obscurities in which many of us, less fortunate in our opportunities for observation, and with fewer subjects for examination than are presented at Harvard, have been working."[58] In the chart, Sargent plotted a line that represented the average of all his statistics. Hitchcock did not believe that this line was accurate and presented a different way of plotting the data.[59] In concluding his speech, he urged the group not to "place too much dependence on what our measuring apparatus tells us of the individual."[60] Taking into account Sargent's growing reputation as an anthropometrist, it seems that this concluding remark aimed to undercut the value of Sargent's work.

Sargent expressed his frustration with the state of anthropometry. He said that "if there is anything disheartening it is to be misunderstood in some one thing which you have been at great

[55]Dudley A. Sargent, "Discussion," *Proceedings of the AAAPE at Its Organization at Brooklyn*, 1885 (Brooklyn: Rome Brothers, Steam Printers, 1885):7.
[56] Edward Hitchcock, *A Report of Twenty Years Experience in the Department of Physical Education and Hygiene in Amherst College* (Amherst, Mass.: Press of C.A. Bangs & Co, 1881).
[57]Edward Hitchcock, "Physical Masurements[sic], Fallacies and Errors," *Proceedings of the AAAPE at Its Third Annual Meeting*, 1887 (Brooklyn: Rome Brothers, Steam Printers, 1887):39.
[58] Ibid., 39.
[59] Ibid., 40.
[60] Ibid., 42.

pains to explain."[61] He recounted how his plans to combine his findings with several others who had taken his physical training course had gone awry when these "friends" failed to cooperate and "straightway set up opposition systems, to what they are pleased to term Dr. Sargent's system."[62] Without these expected additions, he thought he did not have a large enough number of statistics to present his work as a viable scientific study.[63] He thought that the Hitchcocks had misunderstood his new anthropometric chart and stated in what may be presumed to be a snide manner, "I will be only too glad to give them a thorough explanation of it. We can hope but little from publications of experts, who fail to grasp the most easily explained principles."[64]

The senior Hitchcock responded that "[I]f this paper has done nothing else it has opened Dr. Sargent's mouth, and if he will give a lecture on the subject, I will come and hear it, if it takes half the farm to bring me."[65] He hoped Sargent would simply be more forthcoming in publishing his data. Moreover, he envisioned the field as a series of collective trial and error studies, saying that, "I have merely put my results down on paper, so that other men will have my mistakes, at least, to work upon. All great works come from little things, added here and there, and I want to add my mite to this great work."[66] The younger Hitchcock held that his chief goal in presenting his paper was "that Dr. Sargent would rise and give us some explanation of his chart, and, if he will, some time give us what the typical man is."[67]

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[61] Dudley A. Sargent, "Discussion Report of the Proceedings of the American Association for the Advancement of Physical Education," *Annals of Hygiene* 3 no. 1(January 1, 1888):15.
[62] Ibid., 15.
[63]Sargent had published an article for *Scribner's* in July 1887, titled "The Physical Proportions of the Typical Man." Although this revealed his methods of anthropometry, it was not the publication of thousands of statistics that the Hitchcocks wanted.
[64] Ibid., 16.
[65] Dr. Hitchcock—of Amherst, "Comment," Discussion Report of the Proceedings of the American Association for the Advancement of Physical Education," *Annals of Hygiene* 3 no. 1(January 1, 1888):16.
[66] Ibid., 16.
[67] Dr. Hitchcock—of Cornell, "Comment," Discussion Report of the Proceedings of the American Association for the Advancement of Physical Education," *Annals of Hygiene* 3 no. 1(January 1, 1888):16- 17.

The feud between Sargent and the Hitchcocks seemed to intensify by their arrival at the fifth annual association meeting held in Boston in 1890. The tension might have been elevated by the annual elections. Sargent was elected to be the President of the Association, having moved up from his previous position as Vice President, while Hitchcock had served as President formerly, but in 1890 was no longer holding a leadership position.

In his speech, "The Physical Tests of a Man," Sargent criticized Hitchcock's measurements of Amherst students, stating that they "make the short men too heavy and the tall men too light."[68] There was also a dispute about the utility of calculating the *average* versus the *mean.* Maintaining that the Hitchcocks used the average, he referred to a statement by Francis Galton: "[T]he knowledge of an average value is a meager piece of information."[69] The elder Hitchcock admitted errors in his 1887 study, claimed that they were corrected in his current publication and held that Sargent selected the strongest cases to prove his point, failing to mention "that in the other *thirty-seven items there was a most decided verification of the law!*"[70] Further, he expressed continued aggravation with Sargent's uncooperative manner. Mistakes were unavoidable, "[B]ut we cannot perfect such a growing subject as Physical Education at once, shall we refuse to shed what little glimmer of light we can to-day, and help others a little; or shall we compel seekers to wait, till we can fairly dazzle them with our grand enumerations of truth when we think we have given them the complete subject?"[71] If Sargent would only publish his work, rather than lock it up like "valuable secrets in his desk," then the Hitchcocks would "rest satisfied of the justness or otherwise of his criticisms of these tables."[72] The idea that

[68]Dudley A. Sargent, "The Physical Test of a Man," *Proceedings of the AAAPE at Its Fifth Annual Meeting,* 1890 (Ithaca, N.Y.: Andrus & Church, 1890):43.
[69] Ibid., 46.
[70] Edward Hitchcock, Senior, "Discussion of Dr. Sargent's Paper," *Proceedings of the AAAPE at Its Fifth Annual Meeting,* 1890 (Ithaca, .N.Y.: Andrus & Church, 1890):54.
[71] Ibid., 54.
[72] Ibid., 54.

Sargent was keeping his work secret as if hoping to one day "dazzle them" was an apt prediction for five years later Sargent used his numbers to create the well-known Columbian Exposition statues of the male and female college students. He did so without publishing his data.

The confrontational tone of this discussion intensified. Sargent reproved his colleagues for "rushing into print with a small number of items from which to make deductions."[73] He was concerned that such errors "tend to throw the whole matter of statistics of human proportions into a cloud of doubt."[74] He illustrated more mistakes in the Amherst studies and the secretary of the meeting transcribed: "'Local publishers' and 'peddlers of statistics,' he[Sargent] said, were doing a great deal of damage to the cause of physical education, by the mistakes they were so prominently making public.'[75]

The younger Dr. Hitchcock appeared offended and the secretary recorded:

> Dr. Hitchcock, Jr., presumed that as the expression was used so closely to the criticism his friend Dr. Sargent had made of his chart, that he must be one of the "local publishers" and "peddlers of statistics" referred to…He plead guilty of being a "local publisher," but objected to the "peddler," since he had never sold nor peddled a single statistical item or chart. But he thought he should still be obstinate, and continue the publishing, doing his best toward determining the measurements of the typical man, until Dr. Sargent would bring out the more perfect standard which he has prepared from data collected since he has been at the Hemenway.[76]

He turned the "peddler" accusation back to Sargent, claiming to have received, "a paper purporting to have been sent out by Dr. Sargent, offering to individuals who would send to him certain of their physical measurements, (accompanied by one dollar), to return to them a chart

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[73] Dudley A. Sargent, "Reply, Discussion of Dr. Sargent's Paper," *Proceedings of the AAAPE at Its Fifth Annual Meeting,* 1890 (Ithaca, N.Y.: Andrus & Church, 1890):54.
[74] Ibid., 54.
[75] Ibid., 55.
[76] Edward Hitchcock, Jr., "Discussion of Dr. Sargent's Paper," *Proceedings of the AAAPE at Its Fifth Annual Meeting,* 1890 (Ithaca, N.Y.: Andrus & Church, 1890):55.

showing their relations to the typical or normal man."[77] At this point the transcription of the discussion abruptly stopped.

Perhaps to lessen Sargent's claims to originality, the younger Hitchcock emphasized the influence of W.T. Brigham on the field. Brigham had not been a great promoter of physical training of students, but he did do some work in anthropometry in the late 1860s and 1870s.[78] According to Hitchcock, Sargent's lengthy list of measurements taken during physical examinations "seems to be almost a reproduction of the Brigham plan."[79] He also credited Brigham with conducting measurements on Harvard students prior to Sargent's employ and for introducing strength tests.[80]

Sargent and his work continued to be a significant part of the debate and conflict over anthropometry. Aside from his conflicts with the Hitchcocks he questioned the methods of the respected Francis Galton at the 1891 AAAPE, when he could not fathom that Galton measured students while they wore shoes and subtracted the heels afterward.[81] Luther Gulick admitted that he did not take measurements in that manner, but he "would not be willing to say a man makes a mistake who takes them that way."[82] When Sargent asked if Gulick took measurements while the subject was fully clothed, the diplomatic Gulick held, "[N]o, but I would not criticize a man who did, if I knew he was a scientific man."[83] For his part, Francis Galton, whose paper was read *in absentia* at the 1891 meeting, was critical of the physical educators who were conducting

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[77] Ibid., 56.
[78] E. Hitchcock, Jr., "Physical Examinations," *Physical Education* 1 no. 12 (February, 1893): 222.
[79] Ibid., 223.
[80] Ibid., 224.
[81] Luther H. Gulick and Dudley A. Sargent, "Discussion" *Proceedings of the AAAPE at Its Sixth Annual Meeting*, 1891 (Ithaca, N.Y.: Andrus & Church, 1891):97.
[82] Ibid., 97.
[83] Ibid., 97.

anthropometry in American colleges, claiming that they "look upon means as ends."[84] Comparing anthropometrists to "moneymakers, who spend their lives in piling up wealth for the pure pleasure of doing so," Galton held that they "learn to take keen pleasure in the mere accumulation of neatly tabulated figures, carefully added and averaged, quite irrespectively of any use to which those figures can be applied."[85]

As Sargent's system spread throughout the United States in the late 1880s and early 1890s, many became quite critical of his form of analyzing the measurements. A.H.P. Leuf, the physical director of the University of Pennsylvania in the early 1890s, thought that Sargent misused the word typical, believing that it was the average. Leuf reasoned: "It is self-evident that the fifty per cent. line is the middle line of the chart, or the average line *of the chart,* but it is not an index of the average measurements and strength tests that have been made."[86] He insisted that the straight line did not indicate an average on the chart. Leuf also disagreed with the premise of Sargent's contest for symmetry that was held in Cambridge in which Sargent awarded a prize for perfect symmetry to the contestant with the straightest line on his or her anthropometric chart. [87]

Franz Boas, a rising anthropologist, and Luther Gulick criticized Sargent's use of percentile grades. Both men had articles printed in the journal of the American Statistical Association in 1893, along with Hitchcock, Edward M. Hartwell, W.T. Porter and Claes

[84] Francis Galton, "Useful Anthropometry," *Proceedings of the AAAPE at Its Sixth Annual Meeting,* 1891 (Ithaca, N.Y.: Andrus & Church, 1891): 51.
[85] Ibid., 51.
[86] A.H.P. Leuf, " 'Typical' Man: On the Abuse of the Word by Physical Educators'[sic] and What it Should Mean," *Annals of Hygiene* 7 no. 11 (November 1, 1892): 642.
[87] See Chapter Five.

Enebuske, shortly after the organization had created an anthropometry committee.[88] Boas asserted that statistics were only viable if the value measured was subject to the law of chance and held that the college anthropometry studies were not.[89] He concluded that, "the system which is applied in many of our gymnasia is faulty…While this method has certain advantages in bringing home to the untrained public some of the valuable results to be gained from anthropometric inquiries, it is highly objectionable for theoretical studies."[90] If used at all percentile grades should be applied with greater caution and for less extensive purposes.[91] Gulick was also critical of what he termed the "unjustifiable use of percentile grades."[92] Since the method had its origin in "such eminent sources" the system had "had swept all things before it, blinded the eyes of all who might otherwise have felt inclined to examine it more critically."[93] It was readily "adopted by our largest colleges, and has carried all before it" resulting in a "flood of anthropometric data."[94] His main point was that body parts were not proportionally related: "[B]ecause ten per cent of men wear full beards, and ten per cent also weigh 157 pounds or over, it does not follow that the man who wears a full beard should weigh 157 pounds or over."[95]

Although standards for taking measurements were published, whether or not the "flood of anthropometric data" was accurate concerned many in the field. When physical educators aimed to compare statistics from various institutions, precision and standardized methods were very important. Some in high positions, such as Sargent, also employed assistants to take

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[88] Edward Harwell, "Discussion," *Proceedings of the AAAPE at Its Seventh Annual Meeting,* 1892 (Springfield, Mass.: Press of Springfield Printing and Binding Co., 1893): 239.
[89] Franz Boas, "The Half-Blood Indian: An Anthropometric Study," *Popular Science Monthly* 45 (October, 1894): 761-770; Franz Boas, "The Anthropometry of the North American Indian," in *Memoirs of the International Congress of Anthropology* ,ed. G. Staniland Walk (Chicago: The Schulte Publishing Company, 1894):37-49.
[90] Franz Boas, "Remarks on the Theory of Anthropometry," *Publications of the American Statistical Association* 3 (March, 1893): 574-575.
[91] Ibid., 575.
[92]Luther H. Gulick, "The Value of Percentile Grades," *Publications of the American Statistical Association* 3 (March, 1893): 322.
[93] Ibid., 322.
[94] Ibid., 322.
[95] Ibid., 328.

measurements, complicating matters even within a single institution. Leuf commented, "it is a practical impossibility to eliminate from all the anthropometrical statistics the error of 'personal equation'…One may fit the measuring tape a little farther up or down on a limb than the other, or he may require the strength tests to be more correctly applied than would the other."[96] Likewise, Edward Hitchcock Jr., claimed that "[A]nthropometry is not an exact science."[97] He had such little confidence in accuracy that he wrote that after measuring an individual, "no matter how carefully, — you know that five minutes later, you cannot measure and test the man again, with the same results."[98]

The problems of anthropometry came to a head at the AAAPE's tenth annual meeting at Columbia's Teacher's College in 1895. Baroness Rose Posse reported that "there were many who experienced a distinct sensation of disappointment not to say discouragement."[99] The papers that were presented were "behind the times."[100] Posse may have been referring to two presentations which became the subject of a tense discussion. The people who gave the speeches, relative newcomers to the association, offended Sargent in their criticism of anthropometrical methods and charts.

Schuyler Moon conducted anthropometrical examinations on male middle school students for eight years. He claimed his results showed that the boys had stronger legs than Yale students, even though he strayed from the standard procedure by providing leg-padding during the test. His findings led him to question the accuracy of college strength tests.[101] The other presentation was undertaken by Anna Richards and Bessie Belle Little, recent graduates of the

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[96]A.H.P Leuf, "Collegiate Physical Education: At the University of Pennsylvania in Particular, and at Other Colleges in General," *University Medical Magazine* 2 no. 9 (June, 1890): 477.
[97] E. Hitchcock, Jr., "Physical Examinations," *Physical Education* 1 no. 12 (February, 1893): 224.
[98]Ibid., 224-225 .
[99] B.M.P, "Editorial," *Posse Gymnasium Journal* 3 no. 5(May, 1895):1.
[100] Ibid., 1.
[101] Schuyler B. Moon, "The Growth of Boys," *Report of the Tenth Annual Meeting of the AAAPE*, 1895 (Concord, N.H: Republican Press Association, 1896): 23.

Anderson Normal School.[102] Seeking to measure young women, they held that the extant charts, "are not understood by the scholars, nor even by many teachers who use them."[103] After searching through antiquity for a standard, they "chose the Venus di Medici in preference to other antique models on the advice of Professor Weir of the Yale Art school, and also because the Venus de Milo is not a complete figure, since it lacks arms."[104]

It is no wonder that Sargent voiced severe remarks upon hearing these presentations. The *New York Times* reported that he said, "[T]hey are making us perfectly asinine beings, perfectly asinine beings."[105] Sargent called the presenters, "middlemen in the subject, who have had very little practical experience in making measurements."[106] Edward M. Hartwell responded to Sargent's initial comments. Echoing Galton's critical remarks, he called for analysis rather than accumulation of data. The concern was not "'[A]re we getting absolutely conclusive and exhaustive data fit to constitute the record for a thousand years?' but, rather, 'Are the facts which have been observed and tabulated fit to serve as a guide for our feet and a lantern for our paths for the next ten years?'"[107] Showing respect for his colleague, Sargent stated Hartwell's remarks were "very guarded," and continued with his criticism. He also expressed rather justified frustration and offense of someone who, having spent fifteen years working hard at his craft, now faced criticism from less-informed and less-practiced instructors. He stated earnestly that:

> Now our charts are being derided and we are throwing away all we have done and going back to the Greeks. One person thinks it necessary, in order to take a strength test, to pad the trousers. Of course such a man can lift a great deal more;

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[102] In 1900, Little became an assistant in the gymnasium at Bryn Mawr College. Richards became an instructor in dancing and voice upon her graduation in 1895 and Little became a gymnasium director at the Topeka School of Physical Education in 1896.
[103] Anna Richards and Bessie Belle Little, "A Proposed Chart to Show the Proportions of American Females," *Report of the Tenth Annual Meeting of the AAAPE,* 1895 (Concord, N.H: Republican Press Association, 1896): 31.
[104] Ibid., 31.
[105] "On Physical Education," *New York Times,* 26 April 1895, pg. 2.
[106] Dudley A. Sargent, "Discussion," *Report of the Tenth Annual Meeting of the AAAPE,* 1895 (Concord, N.H: Republican Press Association, 1896): 34-35.
[107] Ibid., 35.

> but unless others have been allowed the same privilege it is an unfair test and cannot properly be entered in the conclusions after all…It seems to me, the sooner we have a commission that will draw up some regulations and rules that all will stick to, the better. Don't let us keep firing into the air and talking of the things we at present know so little about.[108]

Again, Sargent admitted his caution in publishing his data: "when I am asked to give up all my data I think I have a right to hesitate, after hearing some of the conclusions of others, until I can write my own articles and present my own deductions to the public over my own name."[109] Instead of using data to pool knowledge in a collective effort, as the Hitchcocks had previously proposed, Sargent felt justified not to cooperate.[110] After ensuing discussion, the *Times* reported, "[A] preemptory call to order and luncheon put a stop to remarks that could not have been called strictly impersonal."[111]

A few days later, Sargent tried to explain his remarks in a conciliatory manner, averring that a researcher needed at least two or three thousand sets of measurements before drawing any sort of conclusion. Stressing the need for standardization of measurements, he proposed that each physical director measure one body part, and then combine all the results with others gathered. He offered apologetically, "I am very sorry if I left the impression that anthropometric work should be discouraged."[112] However he maintained his central idea: "I certainly think it would be a good idea for all of us to stop making deductions until we have sufficient material to talk about."[113] A writer for *Mind and Body* summarized the meeting: "[W]ere the thoughts of the sessions as a whole to be summed up, it would be seen that anthropometry is a subject under the

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[108] Ibid., 36.
[109]Ibid., 37.
[110] Ibid., 36.
[111] "On Physical Education," *New York Times,* 26 April 1895, pg. 2.
[112] Dudley A. Sargent, "Dr. Sargent's Remarks at Saturday Morning's Session," *Report of the Tenth Annual Meeting of the AAAPE,* 1895 (Concord, N.H: Republican Press Association,1896): 38
[113] Ibid., 38.

investigation of nearly every physical teacher but that conclusions as a whole are being often too hastily drawn, but to be disputed later on by more convincing truths."[114]

In the late 1890s, the YMCA also faced problems in conducting anthropometric measurements. They had instituted a system similar to Sargent's, but in 1897 there were calls to issue different anthropometric testing forms, resulting in the production of short, medium and long forms. By 1903 there were fourteen different charts and forms in use at the different Y.M.C.A's and they varied in the average measurements listed.[115]

The Y.M.C.A's wide range of ages and classes created problems in physical measurement. George Meylan, a doctor serving as physical director of a Boston YMCA, attested to the problems faced in the "ordinary" YMCA gym: "There are all kinds, men of different color, of many different races, youths of 15 and 16 and men of 50 and 60, mechanics and students, businessmen and professional men, rich and poor, fat and lean. Now when we attempt to plot the measurements of the prosperous, rotund business man of 50 on the same chart that we plot the measurements of a thin, weak, poorly-fed lad of 16 or 17, we certainly doubt the value of anthropometrical charts."[116] With this array of people and fluctuating membership, anthropometrical exams had little utility in the Y.M.C.A's. Moreover, directors reported that, "men measured are disappointed in that they do not gain in girths."[117] Meylan recommended standardization throughout the YMCAs in their measurements and a decrease in the amount of measurements taken. The exam should take only fifteen minutes and include weight, height,

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[114] Ellen Le Garde, "A.A.A.P.E," *Mind and Body* 2 no. 15 (May, 1895):49.
[115] George L. Meylan, "Report on the Present Status of Anthropometric Examinations in the Young Men's Christian Associations," APER 8 no.3 (September, 1903): 146-147.
[116] Ibid., 150.
[117] William A. Hastings, "Present Tendencies in Physical Examination," APER 8 no.3 (September, 1903): 174.

length of trunk, breadth of shoulders, chest and waist, depth of chest and waist, and girth of neck, chest, waist, arm, forearm, thigh and calf, and possibly Sargent's strength tests.[118]

Even as instructors might have doubted the use of anthropometry as conducted, many were reluctant to make a change until the early twentieth century. C.E. Ehinger, a professor at the West Chester Normal School in Pennsylvania, believed that to create a different system "was to isolate ourselves, anthropometrically speaking, and to render difficult and impossible any comparison and correlation of results with similar institutions."[119] Within the YMCA, William Hastings also thought that to shift the emphasis away from the measurement of muscular girths that was the crux of the Sargent system would be "suicidal to the interest of the gymnasium members," who wanted such an emphasis.[120] However, by 1903, both of these men wanted to shift away from girth measurements. Ehinger found the measurements led to "undue emphasis on mere brawn, bringing into unwarranted prominence the gross muscular tests, the supreme value of bodily symmetry and multiplication of such girths of the extremities as knee, ankle, instep, elbow wrist, etc. An exaggerated value was set upon muscular bulk as indicating vital conditions."[121] Hastings found the measurements of bone length and girth to be the "least valuable."[122] While formerly "[S]ymmetry was taken to be the index of function," they were now looking for new indicators.[123]

In the early 1900s, a number of college presidents did not seem to support extensive measurements even though they were often conducted by physical directors at their institutions.

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[118] Meylan, "Report on Present Status," 150.
[119] C.E. Ehinger, "Physical Examination in Normal Schools and Public Schools," APER 8 no.3 (September, 1903): 241.
[120] Hastings, "Present Tendencies in Physical Examination," 175.
[121] Ehinger, "Physical Examination in Normal Schools and Public Schools," 238.
[122] Hastings, "Present Tendencies in Physical Examination," 174.
[123] Ibid., 174; On criticism of anthropometry see also, Wilbur P. Bowen, "The Influence of Muscular Work on the Rate of the Pulse," APER 8 no. 4 (December, 1903): 232-236; James A. Babbitt, "Present Condition of Gymnastics and Athletics in American Colleges," APER 8 no. 4(December, 1903):280-283.

A survey of college presidents serving at eastern and Midwestern colleges, taken by William G. Anderson, found that some were "quite out of patience" with the time and effort put into anthropometric exams. One thought that "too much time is devoted to taking measurements that are not now utilized by the director."[124] Another commented that he withheld funding from the physical education department because they "do not believe the average director is well acquainted with the duties of an actuary nor is he competent to handle statistics."[125] Anderson observed a "noticeable lack of interest" from many college professors and presidents as well as a shortage of clerical assistance. In sum, "measurements [were] being taken as a matter of form" and students did not avail themselves to further periodic measurements of their physical progress.[126]

It is not surprising that instructors modified their system of anthropometric examinations in the early 1900s. At the University of Chicago, the women's Physical Director, Gertrude Dudley, greatly reduced the measurements in 1903 and focused on "function and physical efficiency rather than upon anatomical conditions and measurements."[127] Taking fifteen minutes, it included a personal history, a small number of measurements and strength tests and a medical examination. Dudley considered "the mass results of such [anthropometric] examinations are difficult to interpret, except in the form of statistical tables which have little real value…until a functional norm or standard, rather than an anatomical one, shall have been formulated –one that will serve as the starting-point for the interpretation of functional deficiencies or excellencies –

[124]William G. Anderson, "Methods in University Gymnasiums," *American Gymnasia and Athletic Record* 1 no. 10 (June, 1905): 273.
[125]Ibid., 273.
[126] Ibid., 274.
[127] Gertrude Dudley, "Physical Culture and Athletics," *The President's Report, July, 1902-July, 1904* (University of Chicago: University of Chicago Press, 1905): 183.

the publication of results of observations on normal or functionally altered masses of individuals will have no positive value."[128]

Dudley's views were indicative of many in her field. With the criticism of the percentile system and girths, and the concerns for accuracy and standardization, those who worked in the field took a new direction. In the first years of the twentieth century, tests of health moved from muscular symmetry to indicators of organic function. As the leader of anthropometric testing, Dudley Sargent was also involved in the development of numerous other tests, as he maintained his search for the "unknown equation" that translated to physical health. Having begun his anthropometric examinations in the 1870s, he instituted the Intercollegiate Strength Tests in 1898.[129] These strength tests were still conducted in some colleges in 1915, although they generally fell out of favor.[130] In an undated manuscript, written some time prior to Dudley Sargent's 1919 resignation from Harvard, entitled, "Miscellaneous Papers on Therapeutic Gymnastics," James McCurdy recalled that Sargent still conducted lengthy physical examinations, even as others ceased to do so. He wrote:

> At first very complete measurements were taken, Dr. Sargent of Harvard, regularly took some fifty or sixty measurements, and to some extent he still keeps up this practice. These blanks have been largely used through the country and are still used somewhat, principally by women. These measurements when taken are of use only to the anthropometrist. They have been of real use to him, and it may be said that now some considerable number of these measurements having been taken, and the results worked over, no real need exists for the further taking of such extensive measurements. It was found that to take these measurements left little time for any thing else to either the physical director or his assistant… Many of these measurements were not affected at all by exercise, that is they were fixed measurements, and hence of no interest to the pupil.[131]

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[128] Ibid., 183-184; See also Joseph Edward Raycroft, "Historical Sketch of the Division of Physical culture and Athletics," *The University Record,* 8 no. 10 (February, 1904): 827.
[129] See Chapter Five.
[130] John F. Bovard and Frederick W. Cozens, *Tests and Measurements in Physical Education* (Philadelphia, London: W.B. Saunders, Co., 1938), 32.
[131] James Huff McCurdy, "Miscellaneous Papers on Therapeutic Gymnastics" undated, Springfield Archives. AAAPHERD Collection.

Instead, McCurdy claimed that the best indices of health were heart rate and blood pressure, and these tests became increasingly popular in the early 1900s.[132]

Over the next three decades, physical educators experimented with myriad medical and physical variations of examination. Sargent continued to innovate until his death in 1923, conducting various types such as the Speed and Endurance Test, Pep Test or Sargent Jump, and the Test of Physical Efficiency.[133] Testing remained an important part of physical education, as physical educators continued Sargent's mission to discover a way to quantify health or physical ability.[134]

As anthropometry shifted away from measurement of muscular girth, some educators began to move away from formal physical training. Although colleges kept training requirements and various types of measurement, the importance of spontaneous action was touted by many physical educators and playground advocates. Prescribed training, routine drills, and other types

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[132]J.H. McCurdy, "The Effect of Maximum Muscular Effort on Blood-Pressure," APER 6 no. 3 (September, 1901): 231-239; James A. Babbitt, "Blood Corpuscle Count, Haemoglobin, and Sphygmograph Tracing as Influence by Athletic and Gymnastic Exercise," APER 6 no. 3 (September, 1901): 240-244; C. Ward Crampton, "Blood Pressure," APER 10 no. 4 (December, 1905): 275-283; J.H. McCurdy, "Adolescent Changes in Heart Rate and Blood Pressure," APER 25 no.6 (June, 1910):421-432; "Methods of Testing Physical Efficiency," APER 25 no. 7(October, 1910): 554.

[133] Dudley A. Sargent, "Twenty Years' Progress in Efficiency Tests," APER 18 no. 7(October, 1913): 452 -456; Dudley A. Sargent, "The Physical Test of a Man," APER 26 no.4 (April, 1921):188-194; L.W. Sargent, "Some Observations of the Sargent Test of Neuromuscular Efficiency," APER 23 (February, 1924): 47-56; C.H. McCloy, "Recent Studies in the Sargent Jump," *Research Quarterly, American Physical Education Association* 3 no. 2 (May, 1932): 235-242.

[134] For a review of testing in physical education see, Bovard and Cozens, *Tests and Measurements in Physical Education* (1938). There are numerous studies on this topic. See: "St. Louis Public Schools Scoring System for Athletic Events," *Mind and Body* 17 (January, 1912): 407; Carl L. Schrader, "How May Efficiency Tests be Made Generally Efficient?" APER 18 no. 7 (October, 1913): 457- 462; Joseph E. Raycroft, "Twenty Years' Progress in Efficiency Tests," APER 18 no. 7 (October, 1913): 446 -451; George L. Meylan, "Twenty Years' Progress in Tests of Efficiency," APER 18 no. 7 (October, 1913): 441-445; "A Test of Physical Fitness," *Journal of the American Medical Association* 64 no. 24 (June 12, 1915): 1990; R. Burton-Opitz, "Tests of Physical Efficiency," APER 27 (April, 1922): 153-159; T.N. Metcalf, "Standards and Tests in Physical Education," APER 27 (September, 1922): 320-326; "The Pentathlon, A Physical Ability Test," APER 29 (January, 1924): 30-32; Frederick W. Cozens, *The Measurement of General Athletic Ability in College Men* (Eugene: University of Oregon Press, 1929); H.C. Mc Cloy, *The Measurement of Athletic Power* (New York: A.S. Barnes and Company, 1932); J.H. McCurdy and L.A. Larson, "Measurements of Organic Efficiency for the Prediction of Physical Condition," *Supplement to Research Quarterly American Physical Education Association* 4 no. 2 (May, 1935): 11-41.

of formal training were criticized in the late nineteenth and early twentieth centuries, as those concerned with physical training publicized the benefits of outdoor activities, sports and play.

Objections to Formal and Compulsory Training

If we imagine a formalized gymnasium drill in which dozens of students acted upon the command of an instructor, or can picture students each with their own anthropometric chart trying to attain symmetry in the gym, we can understand contemporary criticism that these exercises were conducted in a spirit of discipline and conformity. Exercises were not spontaneous or joyous; they were often done half-heartedly under the teacher's command. Moreover, several observers believed that anthropometry standardized the individual, although Sargent did not see it that way, and made students too conscious of health and growth. Lastly, various people involved in physical education administration questioned whether the school or university had the authority to enforce compulsory training. These ideas indicate a general concern for individuality and freedom against an increasingly controlled and standardized system.

This analysis overlaps with issues raised in the "Battle of the Systems." The drill and calisthenics of the Swedish system were described as mechanical "drudgery," unsuitable for American schools.[135] Seaver claimed that Americans, "do not like to be ordered around to do anything. It always made me mad, as a boy, and it does still, to have any one talk to me in a dictatorial way. I believe it is contrary to the American spirit and custom."[136] One teacher observed, "[S]o much of our gymnastics work is reduced to the drudgery of arbitrary, imitative

[135] Fred E. Parker, "Systematic Physical Training," APER 2 no. 1 (March, 1897): 17; Wilbur Pardon Bowen, *Teaching of Elementary School Gymnastics* (F.A. Bassette Company, 1909), 115.
[136] Jay W. Seaver, "Discussion," in *Physical Training. A Full Report of the Papers and Discussion of the Conference Held in Boston in November, 1889,* ed. Isabel C. Barrows (Boston: Press of George H. Ellis, 1890): 53-54.

action, and is thereby degrading to very little children especially. It divorces thought and action and does not appeal to any side of his nature."[137] Some instructors put the onus on the teacher to incite enthusiasm from students. According to Stoneroad, school gymnastics "requires all the enthusiasm, resourcefulness, ingenuity in making exercises attractive, teaching power, personality, and inspiration of the special teacher to give heart and spirit to the work." [138] A physical educator must devote "her entire time to the study of this problem of lifting gymnastics out of the dead level of monotony into which it is likely to drift."[139]

Many witnessed boredom with formal gymnastics among collegians. William De Witt Hyde, the President of Bowdoin College noted that "elaborately devised" drills, were "too childish, too mechanical, too monotonous and dead to be intensely and permanently attractive to the college student…They will hate it, and make light of it, and shirk it, and 'kick' against it in every way they can."[140] Physical director at Brown University, Fred E. Parker also thought that there was a "lack of enthusiasm and exhilaration" in prescribed exercise. Students "are not content simply to pull machines this way and that, and mechanically go through a list of movements, with counting as an accompaniment, in obedience to the commands of an instructor."[141] Systematic gymnastics, according to William G. Anderson were "uninteresting to nearly all concerned."[142]

Those involved in physical training and other elements of health education also voiced concerns about the level of self-consciousness involved in participating in required physical

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[137] Anne E. Allen "Self Consciousness, A Barrier to Free, Spontaneous Expression," *Mind and Body* 3 no. 27 (May, 1896): 53.
[138] Rebecca Stoneroad, "Report of the Physical Director," *Report of the Board of Education to the Commissioners of the District of Columbia, 1903-1904* (Washington: Government Printing Office, 1904): 160.
[139] Ibid., 160.
[140] William DeWitt Hyde, "Physical Education in College," *Proceedings of the AAAPE at Its Sixth Annual Meeting*, 1891 (Ithaca, N.Y.: Andrus & Church, 1891): 26.
[141] Parker, "Systematic Physical Training," 12.
[142] William G. Anderson, "Physical Training for the Mass of Students," *National Education Association Journal of Proceedings and Addresses* 42 ((Printed by the University of Chicago Press, 1903):840.

training. Richard C. Cabot, a prominent Boston physician, expressed apprehension about the psychological implications of self-conscious exercise and challenged the growing sense that achieving health should be a duty. His critique was generally of health consciousness related to hygiene, physical education, and other public health measures. He wrote: "[*T]he worst of the systems of physical culture is that they are apt to become chronic* and therefore useless and morbid like ascetic self-chastisement. A man was never meant to contract his muscles for sake of exercise. Muscular contraction should be the physical expression, the outer end of a *plan*…with consciousness focused always on the end, never on the means."[143] Men were not supposed to plan for their health; he thought that "[T]o be acutely conscious of physical health is to be spiritually diseased, self-centered, morbid. A man should be thinking of his job, of his friends, of his God—not of his body or his soul."[144] He feared that people were worrying too much about particular bodily functions, and that it would diminish their abilities to be fully engaged in the task at hand.[145]

Similar to Cabot, G. Stanley Hall considered the psychological side of physical training. Sargent's system had its benefits; it was able to "arouse youth to the greatest pitch of zest in watching their own rapidly multiplying curves of growth in dimensions and capacities, in plotting curves that record their own increment in girths, lifts, and other tests," and in observing how food and sleep affect health.[146] Yet it also had "selfish aspects" of scrutinizing and testing

[143] Richard C. Cabot, "The Teaching of Hygiene," APER 14 no. 6 (June, 1909): 356. [Original italics]
[144] Richard C. Cabot, "The Deeper Significance of the School-Hygiene Movement," *National Education Association Journal of Proceedings and Addresses* 48 ((Printed by the University of Chicago Press, 1910):925. [Original italics]
[145] Cabot, "The Teaching of Hygiene," 356.
[146] Granville Stanley Hall, *Youth: Its Education, Regimen, and Hygiene* (New York: D. Appleton and Company, 1907), 62.

one's body, which was "a new and perhaps sometimes too self-conscious endeavor of our young college barbarians."[147]

Additionally, Hall and others took aim at Sargent's belief that people should develop their weaknesses rather than strengths. Hall believed that "[N]ature's intent can not[sic] be too far thwarted."[148] He suggested it would be wise "to develop in the direction in which we most excel, to emphasize physical individuality and even idiosyncrasy, rather than to strive for monotonous uniformity."[149] Additionally, Hall believed that focusing on the development of naturally weak body parts could lead to a permanent injury.[150] Claes Enesbuske, the noted Swedish gymnastics instructor, agreed that the physical educator should, "not attempt to change nature's own plan of physical individuality."[151] Physical directors should not have the "prejudice…that the individual who conforms to the geometric symbol of the anthropometrist must necessarily be a worthier type of mankind."[152]

Despite his early interest in anthropometry, Gulick also came to oppose the preoccupation with symmetry. For instance, he found that developing a weaker arm would not make the person healthier or more efficient. He thought, "nature is economical and…does not waste time in perfecting the left side of the body to do work for which she has specialized the right side."[153] Instead he asserted that one should seek "harmony" or a state in which "different parts are properly related to one another so as to produce a whole in which every part is exactly

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[147] Ibid., 62. The use of the term "barbarians" seems out of place when referring to twentieth century college students. Hall was referring to his recapitulation theory, in which he proposed that each individual goes through the phases of man's evolution.
[148] Ibid., 63.
[149] Ibid., 63.
[150] Ibid., 63.
[151] Claes Enebuske "The Place of Physical Training in a Rational Education," in *Physical Training. A Full Report of the Papers and Discussion of the Conference Held in Boston in November, 1889,* ed. Isabel C. Barrows (Boston: Press of George H. Ellis, 1890):39.
[152] Ibid., 39.
[153] Luther H. Gulick, "The Biological Aspects of Athletic Specialization," APER 8 no. 2 (June, 1903):72.

adapted to perfect co-operation with every other part."[154] While he was eschewing the need for perfect symmetry, he was upholding the ultimate idea of balance, which was important to earlier anthropometric thought.

Lastly, a number of commentators believed that it was not within the legitimate power of the university to require physical training. B.A. Hinsdale, who taught at the University of Michigan, voiced his concern in December of 1896, shortly after the construction of the long-sought after campus gyms, and before Michigan passed compulsory training in 1898. Like his contemporaries who drew comparisons between classical civilization and the United States, he recounted the political system of Sparta where children were raised to serve the purposes of the state.[155] While Americans prized individual liberty, he saw in compulsory training return to ancient Spartan system. He asked a meeting of Michigan educators:

> Have the college authorities any business, and is it desirable it itself and in harmony with American ideas, to make gymnastic exercises compulsory for all students who go to college? That is the question. We have been talking about it over at Ann Arbor lately. The fundamental question is this,—how far the public can, through the college or university or public authority, regulate the life of the individual.[156]

Evidently, Michigan's faculty thought that they had the right to regulate the students' lives in such a manner. Here, Hinsdale touched upon the vital political question of the government's role in people's lives, particularly regarding the regulation of health. This proved to be a perennial question in American life, and an important part of political debate as the government's role expanded throughout the twentieth century.

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[154] Ibid., 71, 74.
[155] Kristofer Allerfeldt, "Rome, Race and the Republic: Progressive America and the Fall of the Roman Empire, 1880-1920," *Journal of the Gilded Age and the Progressive Era* 7 no. 3 (July, 2008): 297-323.
[156] B.A. Hinsdale, "Discussion," *Sixtieth Annual Report of the Superintendent of Public Instruction of the State of Michigan for the Year 1896* (Lansing: Robert, Smith Printing Co., 1897):334.

In 1899, compulsory training was also a subject of debate at Harvard, despite Sargent's prominence in the field and his fervent lobbying for such training since the early 1880s. Such a requirement was paternalistic, according to one alumnus, who predicted the possible development of a slippery slope of further infringements that could follow such regulations. He asked his readers to consider the following:

> If he is to be required to exercise his muscles, shall the University neglect the equally important question of his personal habits and his diet? Shall he be compelled to take a daily shower-bath on penalty of probation? Shall he be subject to suspension if he fail to go to bed betimes, and to be up for early breakfast? Shall he be allowed to nullify the effect of his exercise by indulgence in indigestible pastry? In a word, shall the University undertake to do for the physical good of a boy what is done by wise fathers in their own families, or shall it confine its requirements to intellectual performances?...the question is, how far it is in the power of the University to stimulate such good objects by prescriptions.[157]

Although this writer admitted that training was beneficial to good scholarship and citizenship, he thought such requirements were overreaching.[158]

In April of 1899, a public meeting was held at Harvard's Fogg Art Museum to discuss the place of physical training in education. Professor Ira Hollis stated that the faculty valued exercise but did not want to require the course of training because most subjects were elective. There was also a strong opinion that "we must never deny a man a degree by reason of the fact that he lacks physique."[159] The administrators had already passed a ruling in 1888 that required students who had scholarships to be examined twice annually.[160] Despite Sargent's incessant promotion of

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[157] Albert Bushnell Hart, "The University: The Interests of the College," *Harvard Graduates' Magazine* 7 no. 28 (June, 1899): 552.
[158]Ibid., 552.
[159] Ira N. Hollis, "What measures are best calculated to secure a dignified and influential place for Physical Training in the Educational Curriculum?" APER 4 no.2 (June, 1899): 233.
[160] Charles Eliot, "President Eliot's Report for 1892- '93," *The Harvard Graduates' Magazine* 2 no. 7 (March, 1894):383.

required training, it was not until 1919 that administrators finally voted for such a requirement, albeit without academic credit and only for freshman.[161]

From Gymnastics to Athletics: Recapitulation Theory, Play and Progressivism

The "Battle of the Systems," anthropometric disputes and concerns over health regulation undoubtedly contributed to the growing popularity of play and athletics at the turn of the century. Moreover, physiological and psychological theories, including G. Stanley Hall's recapitulation theory, were providing a broad intellectual framework that supported play.[162] The turn to play and sports was seen in collegiate education, primary and secondary public education, and in Progressive reforms of recreation.

A central idea was that play allowed for spontaneous action while formal exercise was controlled by an authority. Whether prescribed work on apparatus, or compelled to take a Swedish influenced gymnastics class, students were controlled in these activities and not allowed to act impulsively. Moreover, many educators believed that formal work did not allow relaxation of the mind, and was thus not useful from the standpoint of mental health.

The development of basketball illustrates how the sport developed out of concerns derived from physical training. Apparently many YMCA workers had noticed that some of the members, particularly businessmen, did not like formal gymnastics training offered at the YMCAs in the winter.[163] Always an innovator, Gulick asked the members of his philosophy of

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[161] F.N. Whittier, "Dudley Allen Sargent," *The Nation* 109 no. 2826 (August 30, 1919): 301.
[162] Howard P. Chudacoff, *Children at Play: an American History* (New York: NYU Press, 2007); Paul S. Boyer, *Urban Masses and Moral Order in American, 1820-1920* (Cambridge, Massachusetts: Harvard University Press, 1998); Dominick Cavallo, *Muscles and Morals: Organized Playgrounds and Urban Reform, 1880-1920* (Philadelphia: University of Pennsylvania Press, 1981); For a clear social control interpretation of playground reform see Cary Goodman, *Choosing Sides: Playground and Street Life on the Lower East Side* (New York: Schocken Books, 1979).
[163] James Naismith, *Basketball; Its Origins and Development* (Lincoln: University of Nebraska Press, 1996 [1941]), 29-30.

physical training class at the Springfield Y.M.C.A Training School to develop a new sport which would be interesting, simple enough to be picked up by average people without unusual strength or skill and vigorous enough to provide adequate physical training. The game was supposed to be suitable for gymnasiums of various sizes and not require expensive equipment.[164] Gulick believed that formal gymnastics was too mentally straining for people that already experienced stress at their jobs. When James Naismith came to class with the preliminary rules for his new "basket-ball" game, Gulick found it to be suitable for relatively inactive people that did mental labor. It was particularly useful because it "not demand the strain on the will, it does not demand the concentration which most forms of gymnastics do, it does not call on the memory as all forms of exercise do which have to be committed."[165] While aiming to "call attention to the psychological importance of play," he maintained that games should "supplement not supplant" formal gymnastics work.[166]

Sensing the turn to sport in 1895, Edward Hitchcock Sr. wrote that the "gymnastic era," which had reigned since the Civil War, was being eclipsed by the "athletic era." Like others in the field, he came to favor sports and recreation in the open air. He stressed that "[M]en like animals want air, sunlight, exposure to all the elements of nature, rain or sunshine, and contact with mother earth."[167] Although regulated exercise in the gym could improve men's arms, legs, lungs and back, "he cannot get the real brawn, effective muscle, capacious lungs, a tough skin and the best of digestion, or a really reliable heart."[168] Physical educators should accept athletics because they were successful in developing health. He concluded that, "[T]he gymnastic era has

[164] George L. Meylan, "Basketball" in *A Cyclopedia of Education Volume 1,* ed. Paul Monroe(New York: The Macmillan Company, 1911): 330.
[165] "Basketball," *Physical Education* 1 no. 2 (April, 1892):22.
[166] "Supplement not Supplant," *Physical Education* 1 no. 2 (April, 1892):22.
[167] E. Hitchcock, "The Gymnastic and the Athletic Era of Physical Education," *Report of the Tenth Annual Meeting of the AAAPE,* 1895 (Concord, N.H: Republican Press Association,1896): 197.
[168] Ibid., 197.

done its work; now let the era of athletics come in and benefit us as much in the next ten or twenty years as the gymnastic era has in the past."[169] In the early 1900s, Amherst followed suit and when weather permitted the compulsory freshmen "Gym" was held outside for track sports instead in the gymnasium for gymnastics.[170]

By the early 1900s, Sargent was more inclined to see the benefits of athletics. In his institution of the Intercollegiate Strength Tests and the creation of the inomotor, he had recognized that an individual needed an element of competition with others rather than with oneself. In 1912, Sargent wrote that he supported athletics but that he wanted, "less of the intensive, narrowly constructed and highly laborious forms…more of the diffusive, widely extended and much more enjoyable forms of sports and physical exercises."[171] His goal remained to reach the whole student body through physical activity and not to have the department of Physical Education merely cater to the athletic elite.[172] He still maintained all-around physical development was of chief importance and that beginning at age eight, children ought to be measured and prescribed individualized exercise.[173]

The shift toward athletics and play related to G. Stanley Hall's publicizing of recapitulation theory, in which the idea that "ontology recapitulates phylogeny" was applied to child's development. As they re-enacted the process of civilization, young children's play

[169] Ibid., 200.
[170] Clarence F. Birdseye, *Individual Training in Our Colleges* (New York: The Macmillan Company, 1907):142-143; Burges Johnson, "'Old Doc' Hitchcock, Creator of a System of Physical Education," *The Outlook* 85 (April 27, 1907): 960.
[171] Dudley A. Sargent, "The Results of Athletics on College Students" *The Medical Times* 40 no. 1 (January, 1912): 35.
[172] F.N Whittier, "Dudley Allen Sargent," *The Nation* 101 no. 2826 (August 30, 1919): 300-301.
[173]Sargent, "Physical Education in Its Various Phases—Elementary, Secondary and Higher," *National Education Association Journal of Proceedings and Addresses* 48 ((Printed by the University of Chicago Press, 1910):342.

activities mimicked what was considered to be barbaric play.[174] When left to their own devices, children instinctually practiced what they needed to do in order to develop in a healthy way. Proponents of play, however, sought to control and supervise play for children and young adults in order to promote proper moral development. As Roy Rosenzweig has written, play advocates "sought to eliminate existing constraints on play, but they also sought to impose new constraints of their own devising."[175] Thus, play was not truly a free experience but one that was regulated by reform-minded play advocates and educators. For those who dealt with recreation for youth and adults, the provision of wholesome activities to substitute for the saloon, dance hall and various sorts of street life became an important reform goal.[176]

Hall's theory had an evident influence on play advocates operating in various educational positions, such as George E. Johnson, a public school Superintendent and playground advocate. Observing children's play, he told the members of the AAAPE how he thought that games such as tag, racing, climbing as well as playing house and dolls, all corresponded to "movement or exercise executed in the life history of the race."[177] He asked them to consider if "these movements of the child, impelled by instinct, following his own ideals, executing his own self-conceived purposes, unconscious of his movement, but every motion eloquent with thought and feeling, himself pervaded by a deep sense of joy in it all,—can these plays be profitably supplanted by dictated, formulated, externally imposed exercises, and

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[174] Dorothy Ross, *G. Stanley Hall: The Psychologist as Prophet* (Chicago: University of Chicago Press, 1972); Gail Bederman, *Manliness and Civilization*.

[175] Roy Rosenzweig, "Reforming Working-Class Play: Workers, Parks and Playgrounds in an Industrial City, 1870-1920," in *Life and Labor: Dimensions in Working Class History*, eds. Charles Stephenson and Robert Asher (Albany: State University of New York Press, 1986), 167.

[176] Kathy Peiss, *Cheap Amusements: Working Women and Leisure in Turn-of-the-Century New York* (Philadelphia: Temple University Press, 1986); John F. Kasson, *Amusing the Million: Coney Island at the Turn of the Century* (New York: Hill & Wang, 1978); Henry S. Curtis, "Play for Physical Trainers," APER 14 no.8 (November, 1909):561-565; Belle Lidner Israels, "The Way of the Girl" *Survey* 22 (July 3, 1909): 486-497.

[177] George E. Johnson, "Children's Games in the Andover Public Schools, as Means for Avoiding Over-Pressure," APER 6 no. 2(June, 1901):169.

meaningless, expressionless, self-conscious movements, devised by the most skillful teacher who ever lived?[178] These movements were inherited from their ancestors, and were seen as natural and healthy. Similarly influenced by recapitulation theory, in 1904 Luther Gulick wrote that, "[N]o possible scheme of physical training can do as much for the child as his natural play; for his natural play is the result of selection working through the unfathomable ages of evolution."[179] At age seven and eight, Gulick held, children were at a stage where they enjoyed games involving competition as well as caring for land and animals, and hunting and fishing. This represented a phase of human development before the barbaric stage. [180] During this stage of development, he cautioned that "the physician will have to be careful that the number of hours taken for school work does not so encroach upon the hours of play as to render these racial achievements impossible."[181] Gulick followed Hall in writing that team sports, "represent a later evolutionary stage than do games of the preceding period, which are individualistic."[182] Sports called upon people to subordinate individuality to the group, as soldiers in combat. It was no coincidence that sports, particularly football, "take the general form of the combats of savage tribal life."[183]

It is not very challenging to see that the evolutionary interpretation of the subordination of the individual to the group fit well with the Progressive Era concerns about citizenship and assimilation of immigrants in this era. Play advocates translated team sports and group activities into lessons in citizenship and socialization of first and second-generation immigrants. The values of cooperation and teamwork were prized over individual accomplishments by play

[178] Ibid., 169.
[179] Luther H. Gulick, *Physical Education by Muscular Exercise* (Philadelphia: P. Blakiston's Son & Co., 1904), 44-45.
[180] Ibid., 45.
[181] Ibid., 45.
[182] Ibid., 46.
[183] Ibid., 47.

leaders such as Henry S. Curtis. If a boy was not fully committed to the team and played for personal recognition, Curtis held "he will soon find that the whole social force of the team is bearing down upon him and demanding of him that he gain a group consciousness and play for the success of the team as a whole and not for individual glory."[184] The team was American society, and the player was the citizen. Curtis recounted a story:

> In the lower part of the New York, the first year the playgrounds were opened I remember there was one playground where there were Irish living on one side and Italians on the other. They would come on the playground but would have nothing to do with each other…We racked our brains to find games in which all the children would be called in. We played prisoner's base and pull-away and other games of this kind. After six weeks, the children did not know whether they were Irish or Italians. The race feeling had almost entirely died out through the companionship of play.[185]

In writing that the children "did not know whether *they* were Irish or Italians," he expressed a loss of ethnic identity on the playground rather than an acceptance of diversity. The interpretation reveals Curtis' ideal playground would erase ethnicity through play.

Luther Gulick, on the other hand, stands out as celebrating distinct ethnic traditions. He promoted folk-dancing as a means of using recreation both to encourage the expression of immigrant traditions and symbolically unite diverse groups in cooperative showcases. Gulick believed that, "[T]he recognition of the national dances of the various peoples not only helps the child of the stranger to sympathetically understand his own ancestral setting, but helps him also to express himself in his own relation to the new world."[186] Moreover, the dances utilized

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[184] Henry S. Curtis, "Playground Training," APER 16 no. 5 (May, 1911): 308.
[185] Ibid., 305.
[186] Luther H. Gulick, "Folk and National Dances," *Proceedings of the Second Annual Playground Congress and Year Book, September 1908 (*Published by the Playground Association of America, 1909): 433.

"neuro-muscular co-ordinations" that had been crucial to man's survival through the age.[187] Drawing upon evolutionary ideas, he held that dances embodied a "racially old inheritance" and "wholesomeness of the instinct feeling," which were lacking in the "manipulation of weights, the lonely walk for the purpose of personal health."[188]

In championing the "play spirit" in the early 1900s, Gulick proved less idealistic than Sargent, who hoped people could feel a duty to exercise and develop "wholesome discipline." Rather, he stated, "the major part of our problem is to get people to exercise at all… Most people do not exercise."[189] When speaking before the Academy of Medicine in 1910, he reportedly made the audience admit whether they had attempted systematic exercise and then given up. He consoled them not to worry because "even former teachers of physical culture didn't keep it up."[190] Routines done out of duty would not be maintained. He suggested that people practice exercise with the "play-spirit," which "a man likes for its own sake." If physical activities had "a chance for some rivalry, a definite goal to aim at, a point to win—something, in other words, to enlist his interest and arouse his enthusiasm," then such activities would most likely become habits.[191]

These numerous conflicts illustrate that much was at stake for these men and women including the legitimacy and growth of their profession, and standards and definitions in health practice. Whether one believes that the roughly forty years of "almost continuous conflict in behalf of physical education" was fruitful or detrimental, during this period the field nevertheless

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[187] Gulick, "The Place and Limitations of Folk-Dancing as an Agency in Physical Training" *Second International Congress on School Hygiene, Transactions Volume I* (London: Printed by William Clowes and Sons, Limited, 1908): 261.
[188] Gulick, "Folk and National Dances," 435.
[189] Gulick, "Discussion," APER 8 no. 2 (June, 1903): 81.
[190] "The Best Way to Exercise," *New York Times*, 1 April 1910, pg. 7.
[191] Gulick, *Efficient Life* (Garden City, New York: Doubleday, Page & Company, 1913[1906]),52.

expanded and changed.[192] The focus on anthropometry in these early years of professional physical education opened the door for the "medical gaze" to enter schools, making people more accustomed to medical examinations. As a site that was by definition devoted to learning and change, the school emerged as an important place for public health initiatives aimed to reform students' bodies and shape their health beliefs. Physical educators were among the early supporters of school hygiene initiatives such as medical inspection of students, as they had been among the first people to speak of "school disease." Some of them took part in conducting these examinations, but increasingly in public schools and colleges, administrators created departments for school health and hygiene. As physical training focused more on sports, and school hygiene was implemented, the medical side of physical education was gradually usurped by the new field of school hygiene.

[192] Sargent, "The Future of Physical Education," 14.

Chapter 7. School Hygiene: Expansion and Conflict in Public School Health Promotion

In the early 1900s, the biological engineers began to expand their program more thoroughly into America's public schools. Physical training programs in schools were never as extensive as biological engineers wanted, and it was not economically feasible to conduct Sargent's plan. However, in the 1880s, there were efforts to stop the spread of disease in public schools and to make them more sanitary, and in the 1890s, local boards of health had begun to inspect students for contagious diseases in several cities. Biological engineers such as Luther Gulick saw the opportunity to improve the health of students by implementing more extensive examinations of remediable diseases, rather than only contagious disease. In 1907, the American School Hygiene Association was formed to push for these hygiene efforts. According to William Harvey Allen, an influential writer and professional in the field, the group formed "to secure for all schools of all states what Dr. Luther Gulick so aptly terms, 'biological engineering.'"[1] It is no surprise that Gulick was named the first president of the organization.

Similar to the earlier efforts in physical education, school hygienists examined large numbers of students and claimed a very great amount of poor health. They built upon the idea of the frail student body, found in physical education literature, with a weak chest, stooped shoulders and a nervous disposition, and found it necessary to add "remediable defects" such as vision, teeth and tonsils and adenoid issues, to the list of "school diseases." Nervousness was also considered in conjunction with many of these school diseases. Believing in a similar mind-body connection, those involved in school hygiene increasingly equated physical defect with mental inability or disobedience, and sought to ameliorate physical defect to improve mentality.

[1] William H. Allen, "A Broader Motive for School Hygiene," *The Atlantic Monthly* 101(June, 1908):824.

The school hygiene movement expanded the biological engineering agenda to a larger number of young children. It boasted great opportunity, but also great potential for conflict. Examining and seeking to treat thousands of public schools students of diverse ethnicities and creeds, school hygienists faced various types of non-compliance and resistance. New York City authorities were known for their ambitious hygiene initiatives, leading to a controversy known as the adenoid riot, where immigrant groups panicked and stormed schools in reaction to adenoid surgeries. Nevertheless, numerous hygienists upheld New York's system as an exemplar of school hygiene, and cited its success in hopes of gaining support of school hygiene throughout the country.

Some people within the field realized that the widespread resistance was not unfounded. As medical inspection and prevention efforts took place nationwide, those within the field also found some of the findings to be poor science. Gulick, in particular, spoke out against the link that hygienists drew between defect and students lack of success in school, pointing to social causes for such poor performance. Others asserted that the statistics were exaggerated and children were not as ill as some people might have liked them to be. Yet even the critics thought that school hygiene was a worthy endeavor, and the programs continued to change and expand. Health pedagogy grew in importance, and districts came to employ school nurses, who would try to insure compliance to medical inspectors' prescriptions in a personal, considerate manner. Hygienists also hoped for the development of school clinics, which would give the schools even more authority over student health, but these would never gain prominence in American schools.

Physical Education and School Hygiene

During the last two decades of the nineteenth century, many colleges, YMCAs, medical institutions and a small number of schools had instituted systems of anthropometry and prescribed exercise. Most public schools could not afford Sargent's system and had to make do with short gymnastics drills conducted in classrooms. In school hygiene, biological engineers saw a way to fill the void in the medical supervision of children. They came to support extensive physical examinations for students, not simply for contagious disease, but for remediable defects, or Hertel's idea of "chronic" illness, which were nonlethal but which impeded learning.

Despite the headlines of over-study in the 1860s, and declarations of nervousness and pressure in the 1880s, the United States was late in instituting the medical examination of students. Those critiques related more closely to calls to reform the curriculum and provide physical education, rather than calls to further inspect the health of the students. In contrast, German states, France, Belgium, Norway, Sweden, Russia, Cairo, the Argentine Republic, Chile all had various types of medical inspection prior to 1890, with efforts beginning in Paris as early as 1843.[2] The German Wiesbaden Plan, initiated in 1896, had a deep impact on American school hygiene, for they made examinations universal and periodical and expanded the examination to cover the heart, lungs, throat, spine, skin and sense organs.[3] It was the first time that "an unusually high percentage of defects was revealed, of which the pupil, the teacher, and the parents were wholly ignorant."[4]

The inspection of American students began in 1894, in the wake of a diphtheria epidemic in Boston. Inspections for contagious disease spread to Chicago (1895), New York City (1897),

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[2] Luther H. Gulick and Leonard P. Ayres *Medical Inspection of Schools* (New York: Russell Sage Foundation, 1913), 7-14.
[3] Ibid., 9
[4] Richard Cole Newton, "Medical and Sanitary Inspection of Schools," *Medical Record* 75no.12 (March 20,1909): 480

and Philadelphia (1898). According to Gulick and Ayres the cities having any type of medical inspection increased greatly in the early years of the twentieth century. The number of cities with forms of inspection jumped from 11 cities in 1900, to 55 in 1905 and doubled to 111 by 1907. The rate of growth picked up thereafter: by 1908 there were 167; 1909(263 cities); 1910 (400 cities).[5] All regions had 30% or more of their cities claiming to offer medical inspection, with the North Atlantic and Western states leading with 57% of their cities reporting inspection.[6]

From their institution into the first years of the 1900s, medical inspection in certain cities expanded from contagious disease examinations to more extensive examinations similar to the Wiesbaden plan. There were several reasons for this expansion. As the nature of illness and germ theory became more defined, some medical inspectors sought more thorough examinations to see disease in early stages. For example, to try to prevent the spread of diphtheria, physicians began to examine asymptomatic children closely and to take cultures from the nose and throat in order to find carriers and exclude them from schools.[7] Slight sore throats could be early signs of diphtheria or mild cases of scarlet fever which could be spread to others.[8] The knowledge that students did not have to be ill in order to spread the illness led to more stringent examinations. Moreover, this focus on the throat and nose in contagious disease carried over to the focus on the nose and throat for remediable diseases in the early 1900s.

According to Gulick and Leonard Ayres the new focus of examinations originated from questions of intellectual capacity. In the early 1900s, Gulick voiced doubts that physical training

[5] Gulick and Ayres, *Medical Inspection of* (1913 ed.), 16.
[6] Ibid., 15.
[7] E. Larue Vansant, "Should Cultures for Bacteriologic Examinations be Taken from the Nasal Chambers as Well as from the Throat in Cases of Suspected Diphtheria?" *Medical Review* 25 no. 10 (March 6, 1897):175-176.
[8] Walter S. Cornell, *Health and Medical Inspection of School Children* (Philadelphia: F.A. Davis Company Publishers, 1912), 531-532.

could improve intellectual ability in those that were labeled "feeble-minded."[9] As standards of education improved, biological engineers sought to investigate learning ability, or "the causes underlying the phenomena of backward and retarded children."[10] Thus, medical inspection was instituted "not only for the detection of contagious disease, but also for discovering those physical defects which interfere with the child's ability to do his school work, or which, if neglected, will seriously affect his physical efficiency in after-life."[11] Among these defects which had "a great and formerly unrecognized influence on the welfare, happiness and mental vigor of the child" were adenoids, enlarged tonsils, swollen glands, and poor teeth, vision and hearing.[12]

The development of physical education and anthropometry undoubtedly supported extensive school hygiene by placing a spotlight on the physical well-being of children rather than solely their academic development and achievement. New York City Superintendent William H. Maxwell observed that some students were indeed too ill to participate in school gym or athletics: "What a farce it is to urge the boy, who is weak through the insufficiency of unfitness of his food, or who cannot breathe properly because of adenoid growths in his throat, to go in for relay racing or cross-country running!"[13]

Thus, European precedent, thorough examinations for contagious disease, educational concerns, and physical education all supported the extension of medical inspections to include remediable defects. Gulick and others believed that investigation and treatment of remediable defects should be under the control of school authorities, while contagious diseases were to be under the authority of local boards of health. He framed remediable diseases as a question of

[9] Luther H. Gulick, "Rationale for the Gymnastic Treatment of the Feeble-Minded," *Journal of Psycho-Asthenics* 4 no. 3 (March, 1900): 117.
[10] Gulick and Ayres, *Medical Inspection* (1908, ed.), 14.
[11] Ibid., 14-15.
[12] Ibid., 14.
[13] "Maxwell Pleads for School Hygiene," *New York Times*, 19 January 1908, pg.15.

intellectual capacity and believed that statistics should be used to discover how to implement an improved curriculum.

The institutionalization of examining college students and the founding of physical education departments by doctors laid the groundwork for doctors to become more closely involved with education in general and public schools in particular. Although Bowditch had pioneered measuring school children in the late 1870s, his statistics were not used to create school policy.[14] In contrast, those involved in school medical inspection sought to influence the care of schoolchildren in an unprecedented way by linking hygiene and education reforms.

In the 1890s physical educators were among the early advocates of medical inspection. In 1897, Washington D.C., Physical Director Rebecca Stoneroad, urged annual hearing and vision tests for public school students as well as "daily systematic medical inspection" for the purpose of containing disease as well as improving health by finding cases of "nervous disorder, low nutrition, and diseases in their incipient stages."[15] Members of the New York Physical Education Society sought regular medical inspections to be conducted by a school physician, in the presence of the school principal and physical education or gymnastics teacher. The medical record would be shared and the information would be applied to the students' physical and academic education.[16] Support came from a doctor associated with the Turnerbund and Chicago Board of Education, Henry Hartung, and many writers featured in the *American Physical Education Review.*[17]

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[14] William T. Porter, "Discussion," APER 2 no. 4 (December, 1897): 234.
[15] Rebecca Stoneroad, "Report of the Director of Physical Training," *Report of the Board of Trustees of Public Schools of the District of Columbia for the Year Ended June 30, 1897, Vol. I.* (Washington: Government Printing Office, 1897): 668.
[16] Jakob Bolin, Mary Taylor Bissell, Henry Ling Taylor, "For What Conditions Shall Children be Excluded from School Gymnastics? Report of Committee of New York Physical Education Society," APER 2 no. 1 (March, 1897):30-31.
[17] Henry Hartung, "Physical Impairments Resulting from School-Life," *Mind and Body* 6 no. 61(March, 1899):7.

Biological engineering envisioned physical education and hygiene to be one comprehensive field. As illustrated, the early prominent physical educators usually held medical degrees and sought to improve health through physical training. Directors of Physical Training, therefore, were supportive of expansion of school hygiene, and their roles often dealt heavily with medical inspection and hygiene. As the first Director of Physical Training for the New York City public schools, Gulick listed over twenty objectives for his department in his 1908 report to the Board of Education. There were issues of the school environment including textbook print, desks, chairs, showers, baths, ventilation, sanitation and dust. He was interested in studying the health effects of carrying books to and from school, singing, cramming for exams and impure air. Underfeeding, the prevention of scoliosis, physical examination, epilepsy, and the teaching of hygiene in schools remained important as well as fatigue, overwork, and the proper amount of study for pupils. As the chief physical director, he also wanted to set standards for athletic participation, including medical certification for student athletes and excuses from physical training class for girls during their menstrual cycle. The new remediable illness of the time, adenoids, also concerned Gulick, and he listed the relation of adenoids to scholarship as one of his areas of investigation. He was concerned with the extent to which schools were responsible for health issues in children, but also considered social life and food provided by parents.[18]

While Dudley Sargent did not move into school hygiene formally, as Luther Gulick did in the public school system and at the Russell Sage Foundation, his anthropometry had

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Maximilian P.E. Groszmann, "School Hygiene," APER 7 no. 2 (June, 1902):86-97; Seneca Egbert, "School Hygiene and the Teaching of Hygiene in the Public Schools," APER 9 no. 3(September, 1904):196-206; G. Hudson-Mauken, "Defects of Speech and Voice," APER 13 no. 1(January, 1908): 32-47; Richard C. Cabot, "The Teaching of Hygiene," APER 14 no. 6 (June, 1909): 352-358; Thomas A. Storey, "The Relation of School Hygiene to Physical Education," APER 14 no. 8(November, 1909):529-536; George A. May, "The Result of One Thousand Nose and Throat Examinations," APER 14 no. 9(December, 1909):636-644.

[18]Dr. Luther H. Gulick, "Annual Report of the Board of Education, September 30, 1908," p. 2-3, Gulick's Writings, Volume 8, Folder 5 of 6, AAAHPERD Springfield College Archives.

thoroughly medicalized physical education. His examinations involved medical exams and advice in personal hygiene and he encouraged parents to bring their children to their doctors for annual check-ups before they became commonplace.[19] For Sargent, "physical training…in its best sense means applied hygiene."[20] Throughout his career, he held that hygiene instruction without practice "is worse than useless…The best way to teach hygiene is through the physical activities."[21] Sargent was also active in public health campaigns. From 1883-1884, he served as Chairman of the Committee on School Hygiene for the American Public Health Association.[22] Significantly, he also took part in establishing the Health Education League of Boston and served as the President. The main goal of the organization was to inform the working class about health in an accessible way through lectures and non-technical pamphlets.[23]

When the American School Hygiene Association was formed in 1907, many of the members and Council members had backgrounds in physical education, including Thomas A. Storey, Luther Gulick, Clark W. Hetherintgon, George Meylan, James H. McCurdy, George W. Fitz, Wood, Rebecca Stoneroad, Jessie H. Bancroft, Dudley Sargent and Paul C. Phillips. While Gulick became a leader in the field, serving as President of ASHA and publishing on the topic, new men also filled the role of school hygienist experts. Among the leaders were Lewis M. Terman, William H. Burnham, Ernest Hoag, William H. Allen, John Cronin and Walter Cornell.

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[19] Dudley A. Sargent, "Care of the Body," *Christian Union* 29 (February 7,1884):125.
[20] Sargent, "The Place of Physical Training in the School and College Curriculum" APER 5 no. 1(March, 1900): 7.
[21] Sargent, "Should the Teacher of Physical Education in Public Schools Have the Training of a Physical Director and Instructor in Hygiene or That of a Physician?" *National Education Association Journal of Proceedings and Addresses* 46 (Printed by the University of Chicago Press, 1908):1010. See also Dudley A. Sargent, "Physical Training as a Compulsory Subject" *The School Review* 16 (January, 1908): 42-55.
[22] "Sargent," in *Universities and Their Sons Volume II,* ed. Joshua L. Chamberlain (Boston: R. Herndon Company, 1899), 300.
[23] Henry J. Barnes, "The Work of the Health Education League of Boston," *Public Health Papers and Reports* 31 Part 1 (September, 1905):150-151.

Burnham and Terman would continue to advance the field of educational psychology after early involvement in school hygiene.[24]

Over the first three decades of the twentieth century, school hygiene and physical education developed in a variety of ways within the country's school districts. Disagreement inevitably emerged in some cities, where the roles of the physical director, teacher, school physician, medical inspector, department of health official, and director of school hygiene overlapped or conflicted. Significant territorial disputes occurred when a hygiene position was created alongside of a long-standing physical director position. In 1909 Thomas A. Storey maintained that "[T]he objects of school hygiene and the objects of physical education are, in their final analysis, identical."[25] In the same year, William Hastings declared "[T]he only reason physical education has nominally absorbed all these functions is because school hygiene and the office of director of school hygiene had not been created until recently and have therefore not asserted their legitimate place."[26] He believed there to be "a recent duel for supremacy between school hygiene and physical education."[27] These professional territorial disputes were discussed by physical educators and hygienists working in schools as well colleges. By the 1920s, physical education would lose much of its medical substance to departments of hygiene or "medical supervision."

There was much common ground in the practice of physical education and school hygiene. Like physical educators who accumulated data on their programs through health statistics, school hygienists sought to chart their progress through statistical analysis. They faced

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[24] Barry J. Zimmerman and Dale H. Schunk, eds., *Educational Psychology: a Century of Contributions* (Mahwah, N.J.: L. Erlbaum Associates, 2003).
[25] Thomas A. Storey, "The Relation of School Hygiene to Physical Education." APER 14 no.8 (November, 1909):529.
[26] William W. Hastings, "The Place of Physical Education in the Field of Hygiene," *Hygiene and Physical Education* 1no.6 (August, 1909):584.
[27] Ibid., 584.

similar problems regarding a lack of standardization of their examinations. Physical educators sought bodily improvement through proper training, and often delved into nutrition advice, but often lacked substantial power to truly enforce their prescriptions. Hygienists sought improvement through medical interventions, and also lacked much power to have remediable ailments cured. Both wanted more power to fix the bodies which they found ill or lacking vitality, and were often frustrated by their lack of control. Moreover, both groups also declared certain defects among pupils, which previously had not warranted much attention, and hoped to reform bodies to raise people to a "higher plane."

The truest realization of biological engineering in physical education was in Sargent's system in colleges. Despite similarities in philosophy and professional overlap, the implementation of school hygiene had much that was different and new, which comprise the bulk of the chapter. First, school hygiene often involved physicians affiliated with state or city boards of health, which were not as thorough as biological engineers wanted. Secondly, the population involved in hygiene was socially and ethnically diverse and usually mandated to attend school. Due to the diverse population and the greater stakes involved in certain interventions, school hygiene illustrates more intense conflict over different conceptions of health. Lastly, while both fields were influenced by the critique of schools as well as the mind-body mantra, school hygiene was more concerned with school performance. A poorly performing college student was not always considered to be sick or physically imperfect, but poorly performing primary school students often were. Much of the school hygiene mission was aimed at finding and curing impediments to learning, which were often traced to the student's eyes, nose and mouth.

School Diseases: Vision, Poor Scholarship, and Nervousness

The early 1900s saw an added emphasis on "remediable defects" in school hygiene medical examinations. Medical inspectors were supposed to give students a general examination, looking at the teeth, throat, eyes, nose, ears, glands, lungs, heart, nervous system, general nutrition and bodily structure.[28] These exams took three to ten minutes, according to Gulick and Ayres.[29] Of all defects found, 85% were of the teeth, throat, eyes and nose.[30] The presence of these did not create a serious emergency although they did lead to labeling students "defective." Moreover, parents were not legally compelled to have any of the defects treated, resulting in many "defective" children remaining at schools untreated.

The statistics of eye problems were usually high, but sometimes varied greatly. A doctor writing in 1908 stated that in Philadelphia, two-thirds of schoolchildren were found to have some type of eye problem.[31] Their New York counterparts, examined in 1904, had 17% with "defective eyesight."[32] Another doctor put the number at 70% of pupils registering as near-sighted.[33] In data compiled by Gulick and Ayres of investigations conducted between 1910-1912, the numbers of vision defects numbered, 16% (Chicago); 21% (Cleveland); 12.4% (Newark, N.J.); 10.6% (New York City); 24.65 % (Oakland, Ca.); 17% (Pasadena); 8.5% (Rochester); 12% (St. Louis).[34] These differences, although they did not range widely, illustrated a lack of standardization as well as the subjectivity of the examiner, which were both increasingly recognized at this time.

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[28] Gulick and Ayres, *Medical Inspection* (1913, ed.), 37.
[29] Ibid., 61.
[30] Ibid., 61.
[31] Frank W. Gavin, "The Medical Inspection of Public Schools," *Transactions of the Thirty-third Annual Meetings of the Mississippi Valley Medical Association* (October, 1907): 65.
[32] Ibid., 61.
[33] Kate Campbell Hurd, "The Necessity of Having Medical Directors for our Public Schools," *Maryland Medical Journal* 28 no. 21 (March, 18, 1893): 443.
[34] Gulick and Ayres, *Medical Inspection* (1913 ed.), 40.

While vision problems were known to be hereditary, many doctors claimed that near-sightedness, or myopia, was caused by school work. Numerous educators and physicians were informed by G. Stanley Hall's view that young eyes were meant to move freely over expansive horizons, and not be "confined to the zig-zag treadmill of the printed line."[35] E.W. Stevens, a Denver physician, held that within the United States, "congenital myopia is extremely rare, but under the strain of an ambitious school curriculum many children acquire a progressive form of myopia, due to the strength of the tunics of the eye-ball."[36] Ophthalmologist W.F Southard was convinced by the high rates of near-sightedness found among students in hygiene investigations in the United States and Germany. In 1894, Southard stated that "it is now an accepted fact that myopia is a product of civilization, one of the results of our modern methods of education."[37] Doctors pointed to the ventilation, poor lighting, long hours of study, fixation on small objects or text and pale ink as contributing factors to students' failing vision.[38]

In discussions of the health of schoolchildren, many expressed concern that poor vision caused nervous ailments and would inevitably lead to academic struggles. Eye strain was associated with headaches, dizziness, nausea, vomiting, chorea, and nervous problems "eventually resulting in anemia, irritability and nervousness, culminating in neurasthenia and hysteria, mental deficiencies, etc."[39] These nervous problems came about because "an uncorrected error of refraction…taxes the nervous system of the child beyond its reserve

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[35] G. Stanley Hall, "The Health of School Children as Affected by School Buildings," *National Education Association of the United States Addresses and Proceedings* (New York: J.J. Little & Co, 1893):682.
[36] E.W. Stevens, "The Prevention of Diseases of the Eye during Childhood," *The Colorado Medical Journal* 6 no.4 (April, 1900):141.
[37] W.F. Southard, "School Children's Eyes—A Plea for the Examination of Every Child's Eyes, When Commencing to Attend School," *Journal of the American Medical Association* 12 no.10 (September 8, 1894):385.
[38] Henry Ling Taylor, "American Childhood From a Medical Standpoint," *The Popular Science Monthly* 41 (October, 1892): 726; Hurd, "The Necessity of Having Medical Directors," 442-443; F.E. Tull, "Visual Hygiene in Public Schools," *Illinois Medical Journal* 4 no. 7(December, 1902):398.
[39] Aaron Brav, "The Correction of Errors of Refraction as a Therapeutic Agent in the Treatment of Various Disorders of Childhood During School Life," *The Medical Brief* 35 no. 10 (October, 1907):787. See also Taylor, "American Childhood From a Medical Standpoint,"726.

force."[40] According to Myles Standish, a Harvard medical instructor, eye strain led to "an apparent stupidity in undertaking tasks" and caused students to leave school because of "nervous breakdown."[41] "Headaches, round shoulders, and flat chests…together with vertigo, chorea, epilepsy, dyspepsia, backache and general neurasthenia" were among the secondary effects listed by Walter Cornell.[42] D. I. Giarth encountered numerous older students "whose ambition to study has been balked by reason of an uncorrected visual defect, resulting in headaches and neurasthenia."[43]

Doctors at this time clearly connected vision problems with nervousness and poor academic performance. Therefore, in providing glasses for children they helped to prevent the increase in nervousness and to improve the academic standing of the pupils.[44] Dr. S.A. Knopf recounted the transformation of students, exclaiming before the American Academy of Medicine in 1906: "How many times has the myopic or astigmatic child been scolded for not being able to see the drawings on the blackboard or read and write properly, when, with the use of proper glasses, all his unhappiness and seeming lack of intellect and interest had been cured as if by magic!"[45] Another important intervention was placing children who might not hear well in the front of the room. However, perhaps the greatest transformation occurred in children who had their adenoids removed. "How often has the dull, hard-of hearing mouth breather been made bright and intelligent by the removal of the vegetations of the retropharynx!"[46] Similar to poor vision, enlarged adenoids were considered to be an easily remediable defect. More controversial

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[40] Ibid., 787
[41] Myles Standish, "Facts and Fallacies in the Examination of School Children's Eyes," *National Education Association Journal of Proceedings and Addresses* 42 (Printed by the University of Chicago Press, 1903):1022.
[42] Walter S. Cornell, "Eyestrain in School Children," *The New York Medical Journal* 85 no. 22 (June 1, 1907): 1024.
[43] D.I. Giarth, "Asthenopia and Its Sequel," *The Medical Council* 11 no. 1 (January, 1906): 13.
[44] W.E. Buck, "What I Know About Fitting Glasses," *Medical Arena* (Kansas City) 8 no. 11 (November, 1899): 325-328.
[45] S.A. Knopf, "How May the Medical and Teaching Professions Cooperate to Improve the Moral, Mental and Physical Conditions of the Young?" *Medical Record* 70 no.11 (September 15, 1906):403.
[46] Ibid., 403.

and harder to diagnose than poor vision, enlarged adenoids were deemed to be a cause of poor scholarship and immorality to a greater extent than was poor vision.

School Diseases: Adenoids

Discovered by Danish physician Wilhelm Meyer in 1868, enlarged adenoids referred to growths in the nasal passage.[47] Known as the third tonsil, adenoid vegetations, nasopharyngeal adenoids, but usually just called "adenoids," these growths were not as clearly visible as tonsils.[48] In the late nineteenth century, they came to be associated with a slew of conditions, some which are currently associated with nasal congestion, such as runny nose, nasal voice, and poor nasal breathing which necessitated breathing through the mouth.[49] Children with adenoids might also have poor hearing.[50] Adenoids were also associated with poor appetite and cachexia, or loss of weight and fatigue.[51] The growths were known to prevent proper sleeping, leading to restlessness, irritability, snoring and "night-terrors."[52]

Adenoids were thought to inhibit the oxygenation of blood, which could affect the brain. They were therefore connected with aprosexia, a term which was first used in 1889 by A.A. Guye, a Professor of Otology at the University of Amsterdam.[53] Derived from the Greek word

[47] Wilhelm Meyer, "On Adenoid Vegetations in the Naso-pharyngeal Cavity, Their Pathology, Diagnosis and Treatment," *Medico-Chirurgical Transactions* 53 (1870):191-215.
[48] W.E. Casselberry, "Facial and Thoraic Deformities Incident to Obstruction by Adenoid Hypertrophy in the Naso-Pharynx," *Journal of the American Medical Association* 15 no. 12(September 20, 1890):417-420.
[49] J.T. Case, "Troubles Due to Mouth-Breathing," *Western Dental Journal* 24 no. 12 (December, 1910): 905.
[50] J.A. Stucky, "Naso-Pharyngeal Adenoids," *The Louisville Monthly Journal of Medicine and Surgery* 10 no.3 (November, 1903): 214.
[51] Allen T. Haight, "Naso-Pharyngeal Adenoids as a Causative Factor in Ear Diseases," *Journal of the American Medical Association* 33 no. 26 (December 23, 1899): 1577-1578.
[52]Joseph Koppel, "Adenoids and Their Influence Upon the Mental Condition of the Patient," *The Journal of the Medical Society of New Jersey* (December, 1910):339; W.L. Grant, "Some Common Conditions of the Nose and Naso-Pharynx Demanding Operative Interference," *Philadelphia Medical Journal* 2 no.16(October 15, 1898):798-799.
[53] A.A. Guye, "On Aprosexia, Being the Inability to Fix the Attention and other Allied Alterations of the Cerebral Functions caused by Nasal Disorders," *Journal of Laryngology and Rhinology* 3 no.11 (December, 1889):499-506.

for heedlessness, aprosexia was connected to inattention in school.[54] Students with adenoids were often labeled derogatively as "mouth-breathers" and generally depicted as unintelligent, badly- behaved and immoral.

As physical educators and hygienists believed that schooling promoted the development of the weak scholar's body complete with rounded shoulders, weak chests, and a lack of muscular development, those concerned with the symptoms of enlarged adenoids noted similar orthopedic problems. Adenoid cases were known to have rounded shoulders and a contracted chest.[55] According to a Maryland physician, the "most superficial examination will show…that the mouth breather has a narrow, contracted chest due to the imperfect filling of the lungs with air."[56]

In the United States, discussions of hypertrophied adenoids were found in medical publications as early as the 1880s, but the peak in the conversation of adenoids in school children was between 1905 and 1910.[57] Not surprisingly, this period saw a large institutionalization of medical inspection of students.[58] In Massachusetts, for instance, where a state medical inspection law was initiated in 1906, a 1909 *Boston Globe* article reported that three years prior most teachers had not heard of adenoids, however "adenoids, hypertrophied tonsils and breathing

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[54]"Aprosexia in Children," *Medical Record* 38 no. 22 (November 29, 1890):607.
[55] J. Morrison Ray, "Adenoid Growths in the Dome of the Naso-Pharyngeal Space," *The Medical and Surgical Reporter* 71 no. 29 (July, 21, 1894): 75; James Porter Fiske, "The Prevention of the More Common Errors of Development," *The American Journal of Obstetrics and Diseases of Women and Children* 62 no.4 (October, 1910): 718-719; J.T. Case, "Troubles Due to Mouth-Breathing," *Western Dental Journal* 24 no. 12 (December, 1910): 90; H.H. Briggs, "Baneful Effects of Adenoids in Infancy and Childhood," *Pediatrics* 25 no. 9 (September, 1912): 543.
[56] Richard Hall Johnston, "Obstruction of the Nose or in the Throat as a Cause of Nervous and Mental Diseases in School Life," *Mind and Body* 17 no. 194 (December, 1910): 290
[57] For early discussions see: F.I Knight, "Chronic Nasal Catarrh: The Removal of Hypertrophied Tissue," *Boston Medical and Surgical Journal* 110 no. 6 (February 7, 1884): 132; Beverly Robinson, "A Contribution to the Study of Adenoid Vegetations at the Vault of the Pharynx," *Boston Medical and Surgical Journal* 110 no. 22 (May 29, 1884):513; T.H. Haldsted, "Adenoids in the Naso-Pharynx in Children," *Medical Record* 42 no. 7(August, 13, 1892):183-186; F.A. Bottome, "Adenoids in the Nasopharynx, A Plea for Their More General Recognition," *New York Medical Journal* 65(May 22, 1897):698-700.
[58] Leonard P. Ayres, "What American Cities Are Doing for the Health of School Children" *The Public Health Movement, The Annals of the American Academy of Political and Social Science* 25 no.2 (March, 1911):494- 504.

defects," had become, "a more serious menace to child welfare and school progress than the more easily detected contagious diseases of which people are more afraid." [59]

The proper medical procedure regarding the removal of adenoids was discussed frequently among doctors. Following A.A. Guye, some doctors advocated using the finger for the removal of adenoids, while others preferred various instruments.[60] Some considered it to be a very minor procedure not requiring caution or post-surgical care, while others emphasized the pain and shock of the operation.

At the section of on Laryngology and Otology of the American Medical Association of 1898, the methods of operating were a central concern and opinions varied widely. While some doctors discussed their use of nitrous oxide, ether, chloroform and cocaine, John O. McReynolds of Dallas believed general anesthesia was dangerous. The entire operation took thirty seconds, he claimed, and he frequently used only his fingers.[61] Other doctors found that operations were too painful and under McReynold's methods "the child would dislike the operator."[62] D.H. Makuen of Philadelphia "thought that it would be a mistake to let it go out that the Association endorsed the removal of these growths with the finger."[63] Several months after this discussion, D. Bryson Delavan publicized his belief that anesthesia was always necessary. Moreover, he held that this type of operation, "is injudiciously regarded as a trifling one, and for this reason it is often undertaken by those wholly unqualified to execute it."[64] He cautioned that there was

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[59] "Physical Defects of School Children," *Boston Daily Globe,* 11 November 1909, pg.10.
[60] Dr. Guye, "Adenoid Vegetations in the Vault of the Pharynx," *Transactions of the International Medical Congress, Seventh Session Volume 3* (London, J.W. Kolckmann, 1881): 290-291.
[61] John O. Mc Reynolds, "Discussion, Adenoid Vegetations in the Nasopharynx," *Philadelphia Medical Journal* 2 no. 2(July 9, 1898): 56-57.
[62] Dr. Holmes, "Discussion, Adenoid Vegetations in the Nasopharynx," *Philadelphia Medical Journal* 2 no. 2 (July 9, 1898):57.
[63] D.H. Makuen," Discussion, Adenoid Vegetations in the Nasopharynx," *Philadelphia Medical Journal* 2 no. 2 (July 9, 1898):57.
[64] D. Bryson Delavan, "Present Methods for the Operative Treatment of Pharyngeal Adenoids [abstract]," *The Philadelphia Medical Journal* 2 no. 19(November 5, 1898):948.

"post-operative shock" that required "greater caution than is usually employed in the after care of the patient."[65] In 1900, two nose and throat specialists shared the same belief that adenoid operations were not "trifling" matters. An operation without anesthesia "would sometimes cause more pain than amputation of the thigh."[66]

Despite such calls for caution, doctors were still divided over anesthesia use in adenoidectomy in the first decade of the twentieth century. Samuel W. Thurber observed in 1908, "[W]hile I believe the majority of operators recommend and prefer the use of anesthesia, there are some who say: 'Always operate without an anesthetic, except where the child is too strong to be held.' Others say: 'To operate without an anesthetic is brutal and unscientific.'"[67] Part of this inconsistency was a poor understanding of the use of anesthetic in children. The doctor explained that sometimes it was deemed dangerous to use an anesthetic if the obstruction was too large, and that there were recorded cases of children dying under the use of chloroform, ethyl chloride, and nitrous oxide.[68]

In 1909 William Harvey Allen described the operation done under school medical supervision:

> He[the doctor] then called the first boy and explained that it would hurt, but that it would be over in a minute. The principal stood by and told him to be brave and remember the five cents he could have for ice cream afterwards. The clinic nurse tied a large towel about him and put him in her lap; with one hand she held his clasped hands, while the other held his head back. The doctor then took the little instrument — the curette — and pushed it up back of the soft palate, and with one

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[65] Ibid., 948.
[66] E. Fletcher Ingals and Henry G. Ohls, "Diseases of the Nose and Larynx," in George M. Gould, ed., *The American Year-Book of Medicine and Surgery* (Philadelphia: W.B. Saunders, 1900): 491-492.
[67] Samuel W. Thurber, "The Indications for and Against Removing Adenoids, and Method of Operating," *Archives of Pediatrics* 25 no. 1(January, 1908): 48-49.
[68] Ibid., 49; Francis R. Packard, "General Anesthesia for Tonsil and Adenoid Operations," *Transactions of the Section on Laryngology and Otology of the American Medical Association* (June, 1909):74-83. See also: W.E. Casselberry and F. Menge, "Tonsil and Adenoid Operations Under Anesthesia by Nitrous Oxid, and Nitrous Oxid and Oxygen: A Preliminary Report," *Journal of the American Medical Association* 30 no.10 (March 5, 1898): 547-551; Frank B. Sprague, "Observations of one Thousand Adenoids Operations," *Boston Medical and Surgical Journal* 155 no. 15(October 11, 1906): 400- 403.

> twist brought out the offending spongy lump. The boy's head was immediately held over a basin of running water. He was so occupied with spitting out the blood that rushed down to choke him that he hadn't time to cry before the acute pain had ceased. The rush of cool air through his nostrils was such a pleasurable sensation that he smiled as the school nurse escorted him out into the hall to wait for his companions. At 3.30 P.M. all seven children were out in the hall, all seven mouths were closed, and all seven faces were clothed with the sleepy, peaceful expression that comes with rest from the prolonged labor of trying to get enough air. At 3.45 P.M. they had been all reexamined by the doctor, and a few tag ends were picked out of the nasopharynx of one child. At 4 P.M. the "party" had returned to the Children's Aid Society's school and to the ice cream that follows each adenoid party.[69]

The statistics of adenoids varied widely in the early 1900s and reflect a general lack of standardization in such examinations. A Chicago study found that 42% of students had adenoids.[70] A 1905 New York City examination put the number significantly higher with 92% of students examined exhibiting "posterior nasal growths."[71] A Boston doctor put the number at 65% of the young children that came to his dispensary.[72] In 1910, medical inspectors in Springfield, Massachusetts found that out of 11,858 students examined, 3,538 (30%) of the children presented with enlarged tonsils and 1,635 (14%) with adenoid growths.[73]

Most doctors believed adenoids cut across class lines. A Cincinnati physician had written that adenoid growths, "occurs in rich and poor alike, although some writers say that bad hygienic surroundings predispose."[74] Heredity played some role, according to one nose and throat surgeon, but "the rich and poor are afflicted alike."[75] Examinations of Wellesley College

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[69] William Harvey Allen, *Civics and Health* (Boston: Ginn and Company, 1909), 55-56.
[70] G.B. Taylor, "Adenoids in School Children and Their Effect on the General System," *Medical Record* 81 no. 7 (February 17, 1912): 316.
[71] Frank Gavin, "Medical Inspection of Schools," *The Lancet-Clinic* 99 no. 3 (January 18, 1908): 62.
[72] William E. Chenery, "Rhinology and its Relation to Orthodontia," *Western Medical Journal* 23 no. 6(June, 1909): 467.
[73] Philip A. E. Sheppard, "Acute Epidemic Poliomyletitis (Infantile Paralysis),"*Bulletin No. 3 Volume XII Issued Quarterly By Vermont State Board of Health* (March 1, 1912): 17
[74] Charles C. Jones, "The Adenoid," *The Lancet-Clinic* 112 no. 4 (July 25, 1914): 99.
[75] Maxwell L. Volk, "Adenoids as a Hindrance to the Proper Development of the Child," *Medical Review of Reviews* 17 no. 1 (January, 1911): 10. See also: Allen T. Haight, "Naso-Pharyngeal Adenoids as a Causative Factor in Ear

students between 1906 and 1911 illustrate the presence at an elite institution. Classified mostly as "American," 28% of the students were found to have enlarged tonsils and 17.5% had undergone a throat operation of some type in the past.[76]

However, with the high levels of immigration in the United States in the late nineteenth and early twentieth century, a large number of urban schoolchildren were immigrants or children of immigrants. From a 1911 survey, 71.5% of New York City schoolchildren had a foreign born father. These schoolchildren were also a majority in other cities including Boston (63.5%), Chicago (67.3%) and Cleveland (59.6%).[77] Thus, particularly in the early twentieth century, examinations of schoolchildren could not be imagined without considering that many were newcomers to the United States.

Adenoids and the Medicalization of Deviance

Within school hygiene, adenoids became associated with poor scholarship, truancy and crime because aprosexia was one of its characteristics. Following Guye's classification of aprosexia in 1887, many came to agree with physician G.B. Taylor, who argued in 1912 that "aprosexia resulting from adenoids was probably responsible for more cases of backward and deviated mental development than any other cause."[78] The young student was not able to learn

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Diseases," *Journal of the American Medical Association* 31 no. 26 (December, 23, 1899):1577-1578; H.C. Markham, "The Relation of the Pharyngeal Lymphoid Ring to General Health," *The Journal of the Kansas Medical Society* 14 no. 1(January, 1914):22.

[76] Myrtelle M. Canavan, "Medical Data of the Examination of 2333 Supposedly Normal Adult Young Women," *Proceedings of the Sixth Congress of the American School Hygiene Association* 4 (Published July 1912 by the American School Hygiene Association):86.

[77] Alan M. Kraut, *Silent Travelers: Germs, Genes and the "Immigrant Menace"* (Baltimore: Johns Hopkins University Press, 1994),226.

[78] Taylor, "Adenoids in School Children and Their Effect on the General System," 316. See also: Stephen W. Wells, "Adenoids, Importance of Early Recognition and Removal in Children," *New York State Journal of Medicine* 4 no. 9 (September, 1904): 319-321; William Lincoln Ballenger, *Diseases of the Nose, Throat and Ear, Medical and Surgical* (New York and Philadelphia: Lea & Febiger, 1908),328; Sidney Conover, "Why Adenoids and Diseased Tonsils Should be Removed," *The Detroit Medical Journal* 8 no. 10(October, 1908):360; G.M. Wright, "Nasal Obstruction as a Cause of Aprosexia," *Progress* 8 no. 3(March, 1909): 81-84.

and "casts about for other means to keep his mind occupied." Soon, he may become the "dunce of his class," or stop coming altogether to school and eventually face problems with the law.[79] Others seemed to agree that "[A]prosexia or mental deficiency is present in any of the children suffering with adenoids."[80]

The connection between adenoids and deviance coincidentally occurred at a time when Progressive reformers sought to establish special courts to deal with young offenders. Beginning with Chicago in 1899, cities created juvenile courts which separated children from adults, established a system of probation, and aimed to work with parents, improve home life and reform or rehabilitate the offender.[81] When medical inspectors entered reformatories or institutions for delinquents to examine students, they diagnosed adenoids at very high rates. John J. Cronin publicized that in a special school for students that were often truant, 87% had physical defects, most of which were remediable.[82] One doctor cited that at a New York school for delinquents, 90% were operated on for adenoids, compared with the rate of 30% in the general New York school population.[83] A writer for a medical journal claimed, "[S]o serious are the evils of this particular throat affliction that to them can be traced criminal tendencies which develop in boys and after they have grown up."[84]

When dealing with juvenile delinquents rather than average school children, doctors and school authorities were less hesitant to intervene with the parental authority. In Philadelphia in

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[79] Taylor, "Adenoids in School Children and Their Effect on the General System," 316.
[80] Koppel, "Adenoids and Their Influence Upon the Mental Condition," 213. See also, Stephen W. Wells, "Adenoids," *New York State Journal of Medicine* 4 no. 9 (September, 1904): 319; William H. Burnham, "The Hygiene of the Nose," *The Pedagogical Seminary* 15 no. 2 (June, 1908):155-169.
[81] David B. Wolcott, *Cops and Kids: Policing Juvenile Delinquency in Urban America, 1890-1940* (Columbus: Ohio State University Press, 2005).
[82] John J. Cronin, "The Doctor in the Public School" *The American Monthly Review of Reviews* 35 no. 4 (April, 1907): 439.
[83] George H. Cooper, "Hypertrophied Tonsils and Adenoids an Etiological Factor in Backward Children," *Atlanta Journal-Record of Medicine* 56 no. 6 (September 1, 1910): 294-295.
[84] "Operation Makes Bad Boy Good," *Buffalo Medical Journal* 64 no. 5 (December, 1908): 274.

1906, an elementary school principal, Edward A. Huntington, urged adenoidectomy for Andrew Boyd, an eleven year-old who was often absent from school and malnourished. Huntington truly believed that the operation would help the student and told Andrew's parents that he, or the school, would cover the price of the operation. Hunt explained to Mrs. Boyd that "before we could begin to restore him to a normal mental and moral condition it would be necessary to perform a slight operation upon his nose and throat to remove certain growths there which obstructed his breathing and retarded his physical and mental development."[85] Huntington managed to win over the mother, but Mr. Boyd refused. A few months later, the family had been fined for their son's truancy, and Andrew was arrested for stealing shoes. Andrew's probation officer asked the principal to speak about the young boy in the Juvenile Court, Huntington plead for the operation, and in May the court consented to have the operation done at St. Luke's Hospital. [86]

Andrew Boyd's case was an early example of the juvenile courts supporting the removal of adenoids. In the same year, the Pennsylvania Society for the Prevention of Cruelty to Children began to "experiment with atypical children."[87] This organization cared for juvenile delinquents sent to them by the courts and supported adenoidectomy along with care for other ailments. An affiliated doctor named A.C. Butcher believed that this medical work was ahead of its time, telling a reporter, "[M]any persons do not as yet realize the immense importance of this work, but it will soon become apparent. Then it will be generally recognized that the solution to the problem of the infantile criminal lies in stamping out the root of the cause."[88]

In 1911, William H. De Lacy, a Washington D.C. juvenile court judge, gained publicity

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[85] Edward A. Huntington, "A Juvenile Delinquent," *The Psychological Clinic* 1 no. 1(March 15, 1907): 22.
[86] Ibid., 23.
[87] "Operate to Prevent Crime," *New York Times*, 4 August 1906, pg. 2.
[88] Ibid., 2.

for ordering young people to have medical examinations. The judge was known for watching, "every movement and expression of persons brought before him to learn if there is anything wrong with their physical condition."[89] In 1911, De Lacy dealt with a runaway named William Sanford. He asked Sanford "Do you love your mother?" and upon receiving an affirmative answer, he continued, "Then why do you run away?" to which Sanford replied, "I don't know. I just want to and that's all."[90] The newspaper reported, "[J]udge De Lacy believes he will be normal after he has been treated for his ailment. Instead of sending the lad to the industrial school, a complete reform will be sought through surgery."[91] He sent juvenile offenders sent to specialists at Georgetown University, where they regularly had adenoid and tonsil operations and were fitted for eyeglasses.[92] De Lacy was reported to ask permission for the treatments from the parents or the offender, if they were old enough.[93]

Similar narratives of "knife reform" were found in Indianapolis, Milwaukee, New Jersey and Pennsylvania.[94] Another prominent judge, Julian Mack believed that "[T]here is a direct road from the adenoid to the penitentiary."[95] The focus on adenoids in juvenile cases seems to have become so common that in 1912 Roger N. Baldwin, a noted sociologist and probation officer for the St. Louis Juvenile Court, claimed that, "[W]e know the probation officer with the theory,

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[89] "Knife as Crime Cure," *Washington Post,* 23 October 1911, pg. 23
[90] "More Knife Reform," *Washington Post,* 29 September 1911, pg. 3.
[91] Ibid., 3.
[92] "Use Knife to Reform," *The Washington Post,* 27 September 1911, pg. 14; "'Runaway King' Gone," *Washington Post* 27 December 1911, pg. 2; "Knife for 2 Bad Boys," *Washington Post,* 25 October 1911, pg. 16.
[93] "Knife as Crime Cure," 23.
[94] Eleanor Ketcham, "A Juvenile Court Clinic" *The American Journal of Nursing* 8 no. 8(May, 1908):596; "Operatio[sic] Ncured[sic] Crime," *New York Tribune,* 25 October 1908, pg. 1; "Bad Boy Doctors Made Good Calm as Mother Disowns Him," *New York Tribune,*30 July 1915, pg. 4.
[95] "Urges Child Uplift," *Washington Post* 23, November 1911, pg. 1; Julian W. Mack, "Juvenile Courts as Part of the School System of the Country," *Proceedings of the National Conference of Charities and Correction* 35(May, 1908): 369-383.

who always discovers adenoids, or something of that sort, as one of the contributing factors in the case and recommends their removal as the proper disposition."[96]

The willingness of administrators to conduct adenoidectomies in reformatories was very strong. At the first reformatory specifically created for Jewish boys, the Hawthorne School, in New York City, Max Toeplitz, a reformatory physician, found that from 50% to 73% of the boys needed adenoid removal in examinations taking place from 1910-1912. The school authorities originally waited for the parent's permission for the operation, but only one consent form out of fifty was collected. The next year, the reformatory instituted a new system, where the parents would be notified, and the operation would take place unless the parent refused.[97] This resulted in a far greater number of operations, most of which did not employ anesthesia.[98]

During the first fifteen years of the twentieth century, and particularly after 1907, the transformative effects of adenoidectomy were publicized by doctors and educators. The removal of adenoids, "has been followed by such wonderful improvement of the body and mind as to make recital sound like romance."[99] One physician exclaimed that the operations had "brilliant" consequences, adding "a tone to the nervous system that they had not before."[100] A school principal found that there had been "a marvelous improvement" in those that had adenoids removed.[101] The children told her that they slept better and had improved appetite. She noted that, "[S]everal of the boys have been able to give up their habit of cigarette smoking, and all

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[96] Roger N. Baldwin, "The Presentation of the Case" *The Child in the City: A Series of Papers Presented at the Conferences Held During the Chicago Child Welfare Exhibit* (The Department of Social Investigation, Chicago School of Civics and Philanthropy, 1912): 347.
[97] Max Toeplitz, "Five Hundred Examinations of the Nose and Throat in an Institution for Delinquent Boys," *Medical Record* 85 no. 2(March 14, 1914): 480.
[98] Ibid., 480.
[99] F.J. Jackson, "The Medical Supervision of Schools" *The New Jersey Review of Charities and Corrections* 7 no. 3 (March, 1908):84. See also: Dr. Wells P. Eagleton, "Discussion, Adenoids and Their Influence Upon the Mental Condition of the Patient," *The Journal of the Medical Society of New Jersey* 7 no.7 (December, 1910):339-340; "Operation Makes Bad Boy Good," 274.
[100] Wells P. Eagleton, "Discussion," *The Journal of the Medical Society of New Jersey* 7 no.7(December, 1910): 340.
[101] Cronin, "The Doctor in the Public School," 437.

appear to be in far better physical condition; mentally, they exhibit an unusual alertness, interest, and intelligence, the absence of which was the chief and most noticeable feature of their previous condition."[102] The operation veritably changed the child's disposition and was known to cure chorea.[103] After the common treatment of an adenoid removal and glasses provision, "children become less nervous and more attentive and amenable to discipline; their bodies develop better; their minds improved, and newly-awakened desires to succeed, end truancy, and give other occupation than teaching badness to companions."[104] In his "plea" for examinations, Frank Allport stated that children with defects of the eyes, throats, nose or ears, "cannot easily take advantage of presented instruction, and, consequently, fall behind their fellow-students, are thought to be stupid, idle, or vicious, are punished for their retarded progress, become discouraged and lose interest in their work, become truants, form bad associations, easily drop into pauperism and crime, and undoubtedly form the major portion of the inmates of reform schools, jails, penitentiaries, and charitable institutions."[105] He also cited an instance in Poughkeepsie where the medical inspector found every truant youngster to have "some radical defect of the eye, ear, nose, or throat."[106] Thus, deviance came to be associated with poor vision or hearing, but most frequently adenoids. These quick operations, painful without anesthesia, appeared to have a high potential value. Since adenoids came to be closely associated with deviance and dullness, it is no surprise that medical inspectors were not hesitant in prescribing their removal.

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[102] Ibid., 437-438.
[103] Eagleton, "Discussion,"340.
[104]Jackson, "Medical Supervision of Schools," 85.
[105] Frank Allport, "A Plea for the Systematic Annual and Universal Examination of School Children's Eyes, Noses and Throats," *National Education Association Journal of Proceedings and Addresses* 47 (Printed by the University of Chicago Press, 1909): 267.
[106] Ibid., 266.

The medicalization of deviance created a demand for increased medical inspection of children. The idea that children were disobedient because of illness challenged former conceptions of the nature of childhood. Doctors realized this and asserted the importance of their role in education. Their beliefs often pitted them against teachers and parents who did nto believe this new understanding of childhood disobedience. While D.F. Lincoln took note of this development in the 1880s, it became a more common sentiment in the twentieth century as medical inspection flourished. [107] Professor of Pediatrics, I.A Abt, proclaimed to the members of the National Education Association: "The nervousness of these children is often misinterpreted by parents and teachers. They are frequently reprimanded at school and sometimes harshly disciplined at home."[108] Moreover, according to Ohio physician Frank Gavin, teachers were not equipped to deal with medical problems of epilepsy, hysteria, or chorea and they were "often intent upon the intellectual progress of the child and view him from that standpoint alone."[109] Thus, he claimed a larger role for physicians in the school: "[I]t often requires the wise counsel of a quiet, tactful medical expert, who views schools and school work from an entirely different outlook, to keep the teachers from doing much permanent injury to such pupils."[110]

In 1908, Gulick used the authority of the medical expert to argue against corporal punishment of students. He believed that "vicious" punishment was often meted out on students who were restless due to adenoids, fatigue, poor vision or hearing, or "abnormally sensitive nervous organization."[111] Moreover, he held, "[T]o whip children who have low mentality, because they do not successfully respond to mental stimuli, is not only absurd, but tends toward

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[107] D.F. Lincoln, *School and Industrial Hygiene* (Philadelphia: Presley Blakiston,1880), 55.
[108] I.A. Abt, "Round Table Conference, Topic: How Far are Teachers Responsible for the Morbidity and Mortality of School Children?" *National Education Association Journal of Proceedings and Addresses* 50 (Printed by the University of Chicago Press, 1912):1134
[109] Gavin, "The Medical Inspection of Public Schools" 62.
[110] Ibid., 62.
[111] Luther H. Gulick, "Corporal Punishment in the Public Schools," *Archives of Pediatrics* 25 no.1 (January, 1908):61.

the development of the criminal type."[112] In this sense, the medicalization of deviance led to a more humane view on discipline.

Poor vision and adenoid growths were two prominent school diseases, which doctors related to failure in school, psychological problems, and crime. While there was no consensus, numerous school hygienists and child welfare workers of this period thought that removing these defects would transform the student. Moreover, doctors claimed, teachers and parents did not realize that behavior was often the result of biology, and that "backwards" children were treated unjustly and could be quite easily cured. Competing views of health standards, medical authority and medicalization would come to a head in New York City in the early 1900s, where widespread medical inspection and physical education affected a large portion of the population.

The Case of New York City: The Rise of Medical Inspection and the Adenoid Riots

Dr. William H. Maxwell became the first Superintendent of New York City public schools in 1898 after serving as superintendent of Brooklyn schools. His term was filled with headline-catching debates over the curriculum, length of school day, and controversy over textbook royalties.[113] He supported Progressive measures such as the development of evening schools, playgrounds, gymnasiums, and the greater use of school buildings after hours and in the summers.[114] While his outdated biography reflects upon these various reforms that he made during his twenty-two year tenure, his support of hygiene, medical inspection and particularly

[112] Ibid., 61.
[113] "Maxwell Ruin of City, Says Man at Hearing," *New York Times*, 3 May 1905, pg. 2; "'Fancy Fakir' Charge Answered by Maxwell," *New York Times*, 18 March 1905, pg. 18; "Maxwell on the Stand," *New York Times*, 21 January 1904, pg. 7.
[114] William H. Maxwell, "The Economical Use of School Buildings" *National Education Association Journal of Proceedings and Addresses* 48(Printed by the University of Chicago Press, 1910):326-333; "Notes of the Week," *Charities* 7 no. 5(January, 30, 1904): 108.

adenoid removal have been overlooked.[115]

In the late 1890s and early 1900s, Maxwell began to consistently express concern for the health of schoolchildren. He wrote in his 1896 annual report that "it may be reasonably expected that all the intellectual work of the school shall be so managed as not to interfere with the physical well-being of the child…It is a disgrace to our civilization that the training of children should be conducted in rooms where the air is grossly impure, and where the eyes are sure to be injured."[116] While this idea was in line with general school criticism of the time, it was at the 1904 St. Louis Exposition that Maxwell received notice for his controversial declarations that many public school children did not eat well.[117] In his discussion of problems of schools, he proclaimed: "What a farce it is to talk of the schools providing equal opportunities for all when there are hundreds of thousands of children in our city schools who cannot learn because they are always hungry!"[118] He hoped that schools in the United States would follow Paris's example of providing school lunch.

Shortly after Maxwell's St. Louis speech New York City transitioned from a system of medical inspection which exclusively dealt with contagious disease to one that dealt with remediable illness.[119] Dr. John Cronin, Chief Inspector for the Division of Medical School Inspection of the New York City Board of Health, oversaw the new system which went into

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[115] Samuel Philip Abelow, *Dr. William H. Maxwell, the First Superintendent of Schools of the City of New York* (Brooklyn, N.Y.: Scheba Pub.Co., 1934). John Mooney, "William H. Maxwell and the Public Schools of New York City" (PhD dissertation, Fordham University, 1981), does not investigate Maxwell's hygiene concerns.
[116] William H. Maxwell, *A Quarter Century of Public School Development* (New York: American Book Company, 1912), 5.
[117] See A.N. Bell, "Stamina," *Popular Science Monthly* 66(February, 1905):449-456; "School Children Hungry," *The Pacific Monthly* 8 no. 2 (March, 1905):200; "Hungry School Children," *California State Board of Health Monthly Bulletin* 2 no. 9 (February, 1907): 84-86;S.A. Knopf, "The Teachers' Part in the Tuberculosis Problem," *Medical Record* 69 no. 7(February 17, 1906):245-255.
[118] William H. Maxwell, "Present Problems of the School," in *Congress of Arts and Sciences, Universal Exposition, St. Louis, 1904,Volume 8,* ed., Howard J. Rogers (Boston and New York: Houghton Mifflin and Company, 1907):106.
[119] "Physical Examination of School Children," *Boston Medical and Surgical Journal* 152 no. 20 (May 18, 1905): 587.

effect on March 27, 1905. In that year, Cronin also began to publicize his views that adenoid growths and hypertrophied tonsils were important factors in school medical inspections.[120] From March 27, 1905 to September 29, 1906, 99,240 students were examined by 65 medical inspectors.[121]

The case of the students at Public School No. 110 examined under this more extensive system, in May1906 would become the subject of great controversy.[122] Located in Manhattan's Lower East Side and comprised of many recent Eastern European Jewish immigrants, P.S. 110 had a special class for 150 "defective students" where inspectors found that 137 needed adenoid operations. Combined with eye and ear defects, there was a rate of 95% having some defect. Fifty-six children were operated upon at the Mt. Sinai clinic of Dr. Emil Mayer. In the remaining cases, parents did not have the operation done. Noting that Mt. Sinai was five miles away, Cronin decided to have the operations done at the school in a makeshift doctor's office. He likely felt pressure to have the remaining students operated on because he had made arrangements with William Harvey Allen to have them taken to the countryside with the Association for Improving the Condition of the Poor shortly after their operations, for a sort of convalescence and reprieve from New York's hot summer. Yet Cronin also wrote later that "it was thought justifiable to get information as to what scholastic results would be obtained if these

[120]John J. Cronin "The Physical Condition of School Children," *Medical Record* (September 16, 1905): 480-481; "Medical Supervision in Public Schools," *The Medical News* 86 no. 23(June 10, 1905): 1087.
[121] These statistics were published widely. See G.M. Wright, "Nasal Obstruction as a Cause of Aprosexia," *Progress* (Denver) 8 no. 3(March, 1909):81; Linsley R. Williams, "Discussion" *Medical Record* 72 no. 9 (August 31, 1907):375; Frederick E. Parker, "Headache and Eye Strain," *St. Louis Medical Review* 56 no.2 (August, 1907):51.
[122] The "adenoid riot" has received some attention from historians. See Alan Kraut, *Silent Travelers,* Ch. 9; Elizabeth Ewen, *Immigrant Women in the Land of Dollars: Life and Culture on the Lower East Side 1890-1925* (New York: Monthly Review Press, 1985),143-144; William Reese, *Power and the Promise of School Reform: Grassroots Movements* (Boston: Routledge & Kegan Paul, 1986),203-206; Gil Riback, " 'They are Slitting the Throats of Jewish Children': The 1906 New York School Riots and Contending Images of Gentiles," *American Jewish History* 94 no. 3. (September, 2008):175-196.

children were operated on collectively."[123] Maxwell approved of Cronin's plan to bring the doctors downtown to the school, new consent forms were given to the parents for their signatures, and in late June 1906, 81 children were operated upon at the school by Dr. Mayer and two of his assistants, Dr. Yankauer and Dr. Ballin.[124] Cronin stated that they performed the procedure on 81 children in 84 minutes.[125]

Newspapers reported that a week later, on June 27, 1906, hundreds of parents rushed to get their children out several Lower East Side schools merely an hour after they dropped them off, believing that medical inspectors were going to harm or kill their children. The *New York Times* claimed that the panic affected every school between Mulberry Bend and the East River, North of Madison Street and south of Stanton Street. At Public School 4, after parents were not admitted, the "frantic parents became more clamorous. They surged forward toward the door, and one woman knocked out the glass with a stone."[126] The Principal let them in, to find them wailing and frantic as if they "expected to see their sons and daughters dead and covered with blood."[127] Things took a much more extreme turn, as the *Times* reported that near P.S. 36, a 17-year old threatened to kill a physician as he exited the school. A policeman found the young man "pointing a revolver at the physician's head. A mob was encouraging the boy with yells and hoots."[128] Three arrests were made. Many children stayed home from school the following day, and then summer vacation began.

The next day, the panic hit Little Italy and Brownsville, Brooklyn, described as "peopled largely by former east siders." At P.S. 130 on Baxter Street, some local school boys incited the

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[123] John J. Cronin, "The Physical Defects of School Children," *The Journal of the New York Institute of Stomatology* 2 no. 4(December, 1907):280.
[124] Cronin, "New York's School Children," *Proceedings of the New York State Conference of Charities and Correction at the Seventh Annual Session, November, 1906* (Albany: J. B Lyon Printers, 1907):106-107.
[125] "Medical Attention in Public Schools," *American Gymnasia and Athletic Record* 3 no. 6(February, 1907):125.
[126] "East Side Parents Storm the Schools," *New York Times,* 28 June 1906, pg. 4.
[127] Ibid., 4.
[128] Ibid., 4.

panic among parents and police were called. It is unclear what the thinking was in that community because students had apparently armed themselves for the onslaught: "In their pockets were bags of salt, and any doctor who approached them was to have salt thrown in his eyes and then be stabbed with knives, which they had brought hidden in their blouses."[129] The students were soon dismissed. Nearby, on Lafayette Street, "the trouble seems to have been fomented by a man who harangued women from the street corner. He declared that it was quite true the operations generally did no harm, but he knew of this own knowledge that six children had been lately killed thereby."[130] It is no wonder that women started to demand their children, "wailing and crying on the step."[131] Upon calling the police, merely two arrived. With three male teachers, they were unable to calm the crowd, who became frenzied when an ambulance drove by for an unrelated reason. One man drew a stiletto knife on the janitor, who was assisted by a friend. A mounted policeman and some firemen tried to help as the crowd stormed the school. Shortly after, the children were also dismissed out a side gate. At a third nearby school, "a howling mob of men and women surged against the gates and tried to pull off the ornamental ironwork to smash in the heavy plate glass doors."[132] Many had knives and stones; one woman stabbed the janitor and a policeman was attacked. The Principal soon let the children out to their frantic parents. At P.S. 84 school authorities had to call police to quell a similar mob scene, while at P.S. 66, parents were observed to have "moaned and wept until the children were dismissed." Similarly, at two other schools "anxious parents made tearful demonstrations." On Rockaway and Dumont Avenues, panic began at P.S. 125 when a doctor from the Health

[129] "Throat-Cutting Rumors Revive School Rioting," *New York Times*, 29 June 1906, pg.9.
[130] Ibid., 9.
[131] Ibid., 9.
[132] Ibid., 9.

Department arrived to check the student's eyes. Since he was able to speak to the parents in their own language, he was able to calm them.

John Cronin recalled that he was forced to flee from the "howling mob of 2000, who called him 'butcher' and threw every available missile in his direction."[133] A hose was turned on the crowd. He also held that the parents believed that if their children had the operations they would only be able to speak English and not their mother tongue.[134] Aside from the arrests mentioned, several people were taken to court for inciting the June 27 riot and were ordered to pay fines. One was a young woman named Esther Blaustein, a graduate of P.S. 188, who was apparently quite involved with the school, having recently attended a reception for the Superintendent. The reporter noted, "[Y]et on Wednesday she had stood on the steps and cried, 'This place is a prison. They are killing the children!'"[135]

Many observers blamed local people for their reactions, and cited that they were likely influenced by rumors spread in the neighborhood. The *Times* surmised that rumors of authorities cutting student's throats were purposely spread by "jackleg" doctors who practiced in the tenements and were opposed to school involvement in medical inspection.[136] Maxwell said that the parents involved were "crowded, ignorant, prejudiced, highly excitable people," and Cronin faulted them for believing such rumors.[137] He stated that "[T]he tinder-like quality of the temperament of the foreign population, inflamed by baseless and malicious rumors, precipitated this outburst of passion and among the clamorous mob was not a single mother whose child had been actually operated upon."[138] An unnamed writer for the *New York Times* claimed the parents

[133] "Medical Attention in Public Schools," 113.
[134] Ibid., 113.
[135] "Throat-Cutting Rumors Revive School Rioting," 9.
[136] "East Side Parents Storm the Schools," 4.
[137] William H. Maxwell, "The Personal Power of the Teacher in Public-School Work." *National Education Association Journal of Proceedings and Addresses* 46 (Printed by the University of Chicago Press, 1908):120.
[138] Cronin, "The Doctor in the Public School," 438.

were "densely ignorant…not stupid," so that "all except a very few of them simply must know that the danger which sends them yelling frantically to the schoolhouse door is a vain imagining. They know it, that is, in their calmer moments, and when they allow themselves to fall into a mad hysteria it is to some degree voluntarily."[139] Mothers had gotten in a "'habit' of getting up these needless but exciting and therefore more or less pleasurable riots."[140] The writer did not blame the "east side doctors;" he held that they supported medical inspection because it helped their business.

A few health professionals spoke out for the rioters and blamed the medical inspectors. One doctor remarked that "children were operated on in a place not suitable for the purpose, and the operation, though short and comparatively painless, is necessarily a bloody one."[141] S. Josephine Baker, head of the New York City Bureau of Hygiene, reflected years later that she sided with the rioters. She wrote that the riots happened at the same time as the operations, not a week later, describing the children exiting schools with bloody mouths and noses. She wrote that:

> the doctors had coolly descended on the school, taken possession, lined the children up, marched them past, taken one look down each child's throat, and then two strong arms seized and held the child while the doctor used his instruments to reach down into the throat and rip out whatever came nearest to hand, leaving the boy and girl frightened out of a year's growth and bleeding savagely. No attempt at psychological preparation, no explanation to the child or warning to the parents...You would have thought these children were so many fox-terriers having their ears and tails clipped.[142]

[139] "These Riots Should be Stopped," *New York Times,* 17 September 1906, pg. 8.
[140] Ibid., 8
[141] Linsly R. Williams, "Statistical; Information Concerning the Physical Welfare of School Children" *Proceedings of the National Conference of Charities and Correction* 34 (June, 1907):158.
[142] S. Josephine Baker, *Fighting for Life* (New York: The Macmillan Company, 1939), 141.

While she did not totally reject the importance of these operations, Baker wanted to improve them. She intervened and later obtained money to create six nose and throat hospitals and pushed for better post-operative care.[143]

Adenoid surgeries, often accompanied by tonsillectomy, were still practiced frequently throughout the country, and were on their way to becoming one of the most common surgeries of the twentieth century.[144] If Maxwell focused on underfeeding in 1904, he began speaking more about adenoids, remediable defects and their relation to deviance, shortly after the riots. In 1907, he claimed that all the students at one school for known truants had at least one defect.[145] The following year he stated that 75,000 schoolchildren in New York City had adenoid growths and maintained that, "to this affliction can be traced in a startling number of cases the criminal tendencies which develop in boys when they grow up. That depraved and ungovernable children in the majority of cases have adenoids or some kindred trouble is known to every teacher in this city."[146]

Maxwell continued to promote medical inspection and sought even greater power to conduct it and compel parents to have defects remedied. Along with Luther Gulick, Maxwell called the creation of a new Department of School Hygiene to conduct medical examination under the Department of Education rather than the Board of Health.[147] He was highly critical of the way that the Board of Health conducted inspections, reporting that only half of all schools had been examined, and only a third of the students in those schools. Moreover, the physicians

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[143] Ibid., 142; Duffy, *Sanitarians,* 212.
[144] Gerald N. Grob, "The Rise and Decline of Tonsillectomy in Twentieth-Century America," *Journal of the History of Medicine and Allied Sciences* 62 no. 4 (2007): 383-421.
[145]"Physical Condition of Public School Children," *Boston Medical and Surgical Journal* 157 no. 12(September 19, 1907): 406
[146] "Neglect Imperils Pupils," *New York Times,* 17 November 1908, pg.6.
[147] "Demand New System of School Hygiene," *New York Times,* 16 June 1908, pg. 8; Maxwell "The Necessity for Departments of Health Within Boards of Education" *National Education Association Journal of Proceedings and Addresses* 47 (Printed by the University of Chicago Press, 1909): 252-257.

sent into the schools were "young and inexperienced" and not specialists in school hygiene.[148] Medical inspection would only work if the doctors were accountable to the school authorities and when "the results of their work are measured by results in the classroom."[149] In addition, Maxwell wanted the Board of Education to have the power to bring charges against parents who did not comply with demands for medical treatment or surgery for their children.[150] Moreover, he urged those in the field "give no peace to the parents of the child until the defect is remedied."[151]

Despite the adenoid riot, Cronin publicized his experience at P.S. 110 as an exemplary achievement. He focused on the fact that, six months after the operations, upon a return to the class, all the students had improved in "conduct, effort and proficiency" and 90% were in classes appropriate for their ages.[152] In an article for the New York Institute of Stomatology, he noted that conducting operations in schools "will not be sanctioned."[153] He lamented the lack of parental compliance and held that "[T]he honest poor must be cared for."[154] In another article for a popular publication, he included before and after photographs supposedly illustrating the transformations with adenoid surgeries as well as after the children's' trip to the country through the Association for Improving the Condition of the Poor. He broached the topic of the riot, writing that it occurred because of rumors spread by "some mischievous person" and that none of the people in the crowds actually had children who had the surgeries done. He concluded that, "Nothing in these riots could therefore be construed as reflecting the indignation of the mothers

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[148] Maxwell "The Necessity for Departments of Health Within Boards of Education," 256.
[149] Ibid., 256
[150] "Demand New System," 8.
[151] "Physical Condition of Public School Children," *Boston Medical and Surgical Journal* 157 no. 12(September 19, 1907): 406.
[152] John J. Cronin, "The Relation of Diseased Tonsils and Adenoids to the Educability of School Children," *Health News: Monthly Bulletin, New York State Department of Health* 9 no. 8(August, 1914):320; Cronin, "The Physical Defects of School Children," 280.
[153] Cronin, "The Physical Defects of School Children," 280.
[154] Ibid., 281.

actually affected by the measures advised by the Department of Health."[155] The article received attention from a variety of people, including President Theodore Roosevelt.[156] One journal editor held that "[T]he Department of Health, teachers and parents are enthusiastic over the work. Other cities might profit by New York's experience as told by Dr. John J. Cronin in his article."[157]

Doctors nationwide praised Cronin's work and cited his evidence to bolster their local school hygiene movement.[158] In 1911, H. E. Kirschner, Superintendent at the State Sanatorium for the Treatment of Tuberculosis in Oakdale, Iowa, held up Cronin as an exemplar: "You have no doubt read of the work of Dr. Kronin[sic] in New York City, where wonderful transformations have taken place in children who were considered dumb, and who after an operation have been found to go to the head of their classes. I hope that something will be brought before the legislature, or before our school authorities, that will bring about medical inspection of all the schools in Iowa."[159] In Bismarck, North Dakota, at the meeting of the state education association, Gustav F. Ruediger, Director of the State Public Health Laboratory, quoted Cronin and told the story of a New York City student's transformation through medical intervention for the three common school diseases: dental problems, poor vision and adenoids.

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[155] Cronin, "The Doctor in the Public School," 438.

[156] "Medical Examination of School Children," *The Kansas City Medical Index-Lancet* 28 (April, 1907):131; "The Medical School Inspector," *Medical Times* 34 (July, 1907): 213; F.E. Downes, "Report of the Superintendent of Schools," *Annual Report of the Public Schools of Harrisburg, Penna., with Manual for the Year Ending the First Monday in June, 1907*(Compliments of F.E. Downes): 26-49. His article received a response from Theodore Roosevelt regarding the idea of "race suicide." Cronin had written that "physical defects go hand in hand with a large number of children, both in the rich and in the poor" which Roosevelt found to be false, in his promotion of larger families among "Americans." See: "A Letter from President Roosevelt on Race Suicide," *The American Monthly Review of Reviews* 35 no. 5(May, 1907): 550-551.

[157] A.L., "Periodicals," *The Public* (Chicago) 10 no. 471(April, 13, 1907):47.

[158] Franklin W. Bock, "Some Physical Defects in Children and Their Effect Upon Development: A Plea for the Systematic Examination and Treatment of Children," *Buffalo Medical Journal* 63 no.2 (September, 1907):67-75; J. Richey Horner, "The Nose and Throat in Relation to Nervous and Mental Abnormalities," *Medical and Surgical Reporter* 26 no. 12 (December, 1908): 452-455; Henry R. Slack, "Danger in Adenoids and Diseased Tonsils," *Journal-Record of Medicine* (Atlanta) 11 no. 11(February, 1910): 574- 579; Arthur M. Corwin, "The Relation of Adenoids to Mental Deficiencies," *Institution Quarterly* 5 no. 3 (September, 1914): 72-76; Franklin W. Bock,

[159] H.E. Kirschner, "Discussion, of L.W. Dean, 'The Influence of Nasal and Postnasal Obstruction in Children,'" *Bulletin of Iowa Institutions* 13 no. 1 (January, 1911): 40-41.

The student was described as a nine-year old Italian boy who was "backward in his studies, perverse, quarrelsome, vicious, and utterly defiant of authority."[160] After getting prescription glasses, adenoidectomy and dental care, the student had a "complete transformation in his disposition, mentality and physical development. He became polite, obliging, gentle and considerate and soon excelled nearly all his classmates in his studies."[161] At the time North Dakota had very spotty medical inspection and Ruediger employed such an example to strum up support for developing a thorough system.[162]

Even as New York's system received positive support from hygiene advocates, it was also a subject of criticism. In 1910, Maxwell's annual report was criticized by the New York City Bureau of Municipal Research. Of 323,000 students examined, 242,000 needed treatment. Roughly 38,000 had poor vision, 3,000 had poor hearing, and a large 73,000 had "nasal trouble," which related to adenoids, or "post-nasal growths," and the remaining large proportion had defective teeth.[163] The Bureau of Municipal Research held that such statistics blamed children for problems created or exacerbated by the education system, problems that Maxwell did not want to highlight. They accused Maxwell of "exaggerating the extent and seriousness of physical defects among the school children and evading the responsibility of the school authorities for both physical defects and backwardness."[164] Maxwell was "attempting to make a scapegoat of adenoids, enlarged glands."[165] The Bureau emphasized that the report failed to mention "sweatshops in the schoolrooms," "breakdowns due to overwork at school and at home,"

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[160]Gustav F. Ruediger, "The Need and Value of Medical Inspection of School Children," *Proceedings of the Twenty-fourth Annual Session of the North Dakota Education Association* (October, 1910): 61.
[161] Ibid., 61.
[162] Gustav F. Ruediger, "Medical Inspection of Our School Children," *Fourth Annual Report of the State Public health Laboratories, University of North Dakota, For the Year Ending June 30, 1911* (Fargo, N.D.: Knight Printing Company): 57-63.
[163] "Finds Many Pupils In Need of Doctors," *New York Times,* 30 January 1910, pg. C5.
[164] "Research Board Accuses Maxwell," *New York Times,* 7 February 1910, pg. 16.
[165] Ibid., 16.

problems in ventilation, overcrowding, curriculum and ineffective methods.[166] This criticism caught the attention of B.O. Flower, a leading opponent of compulsory medical inspection and professional medicine in general. Citing how the study found three fourths of children in need of treatment, he asserted "[W]hat a tremendous increase in the doctors' revenues would result from compulsory medical treatment."[167]

While adenoids continued to be connected with deviance and poor scholarship into the 1910s, the Bureau of Municipal Research's type of criticism emerged from various sources. Many involved with school hygiene criticized the assumption that scholarship directly related to physical defects. They sought to complicate the view of child psychology and move away from rigid biological reductionism. Moreover, others believed medical inspectors were not accurate and searched intently for defects. Adenoid surgeries also became a topic of censure as many physicians, educators and parents voiced their concerns over the medical justification for the onslaught of surgeries conducted on young people.

The Hunt for Defects in School Hygiene and Medicine

Shortly after the adenoid riot and the ensuing discussion, the Committee on the Physical Welfare of School Children published a lengthy report on the health of New York City school children. They found that 10.4% suffered malnutrition, 45.5% enlarged glands, 74.9 % bad teeth, 14.9% eye defects, 28.2% nose defects and 30.0% throat defects.[168] The group believed that their study of 1400 students could be projected upon the schoolchildren of the nation, and

[166]Ibid., 16.
[167] B.O. Flower, "Compulsory Medical Inspection of School Children," *Twentieth Century Magazine* 4 no.2 (May, 1911):158.
[168] "Physical Welfare of School Children," *American Statistical Association* 78(June, 1907): 290.

claimed that therefore twelve million children in the United States had such defects.[169] This assertion received attention and some criticism from those who did not believe the statistics from the vast, diverse metropolis could simply be projected on the entire nation.[170]

Many other cities began to publicize the results of their own local investigations. Baltimore's medical inspection program found 20,795 schoolchildren to be "deficient" out of the 51,000 examined over five months in 1907.[171] In 1909, the medical director of Atlanta public schools found 61% of the children defective, claiming this was much higher than the numbers found in the Northern cities.[172] Doctors working throughout the country in South Carolina, Kentucky, Louisiana, Wisconsin, Utah and Iowa, publicized medical inspection numbers in order to promote the work in the field which was generally not well-funded.[173]

In 1911, Thomas D. Wood, a Professor of Physical Training at Columbia, circulated another set of statistics that were quite alarming. In statistics published in various journals and as part of a United States Bureau of Education pamphlet, Wood claimed that 75% of the 20 million schoolchildren in America "need attention to-day for physical defects, which are partially

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[169] Ibid., 296.

[170] "Committee Stands by Report," *New York Tribune,* 13 September 1907, pg.4; "Physical Condition of Public School Children," *Boston Medical and Surgical Journal* 157 no. 12(September 19, 1907): 405; "Physical Welfare of School Children," *American Educational Review* 29 no.2 (November, 1907):68-70.

[171] "20,795 Pupils Deficient," *Washington Post,* 29 March 1907, pg. 5.

[172] "61 Percent of Children in Schools are Defective," *Atlanta Constitution,* 17 November 1909, pg. 4.

[173] "Report of the Committee on Medical Inspection of Schools," *Iowa State Teachers' Association Education Council Proceedings* 1909 (Des Moines, Iowa, Emory H, English State Printer, 1910): 59- 76; Samuel G. Dixon, "The Object to be Obtained by the Medical Inspection of School Children," *Pennsylvania Health Bulletin* 8 (February, 1910):1- 8; Oscar Dowling, "The Value of Medical Inspection for Schools and School Children," *Proceedings of the Third Annual Convention, Southern Commercial Congress* (March, 1911):334- 350; L. Rosa N. Gantt, "Medical Inspection of Schools in Spartanburg, S.C.," *The Journal of the South Carolina Medical Association* 7 no. 9(September, 1911):329-334; John F. Townsend, "Medical Inspection of Schools and School Children," *The Journal of the South Carolina Medical Association* 7 no. 9(September, 1911):334 -339; Richard W. Jones, "Medical Inspection of Schools," *Wisconsin Medical Journal* 10(October, 1911): 319-327; "Georgia Children Defective," *American School Board Journal* 43 no. 4(October, 1911):39; J.H. Welch, "The Importance of Medical Inspection of Schools and its Present Status," *Kentucky Medical Journal* 9(October 1, 1911):749-752; Edgar Bates, "Eye Strain Among Public School Children," *Ophthalmology* 8(January, 1912):188-192; Thomas G. Sloan, "The Medical Supervision of School Children in South Manchester, Conn," *Medical Record* 82 no. 8 (August 24, 1912): 339-342.

or completely remediable."[174] Of all the different ailments, he gathered that 2% had organic heart disease; 5% had either currently or previously "tuberculuous disease of the lungs;" 5% had curvature of the spine, flat–foot or "some other moderate deformity serious enough to interfere to some degree with health;" 5% had poor hearing; 25% had poor vision; 25% suffered malnutrition; 30% "have enlarged tonsils, adenoids, or enlarged cervical glands which need attention;" 50% had "defective teeth;" and many children had two or more medical problems.[175] Within a few years, Wood became the Chairman of the Committee on Health Problems in Education for the National Education Association.

As reports proliferated attesting to the sickness of the nation's youth, many people came to question the methods, practice and analysis of school hygienists. The two main areas of criticism were intertwined. The first idea was that inspection methods and analysis were flawed and not well-standardized. Some believed that the inspectors had a confirmation bias, easily labeling students "defective" and generally exaggerating the poor health of the student population. Secondly, Gulick, Ayres and others questioned the correlation between physical defect and poor scholarship, pointing to other factors that inhibited students' learning and school success. They called for a more complex and holistic view of child development, warning not to take a narrow perspective of normalcy. Moreover, many came to question the worth of adenoid surgery and criticized doctors for operating needlessly.

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[174] T.D. Wood, "Health Problems in Education," *Proceedings of the Fifth Congress of the American School Hygiene Association* 3 (February, 1911):126.

[175] Ibid., 125- 126. His work appears either in the full article of shortened, both including the statistics in: Thomas D. Wood, "Health Problems in Education," *Current Educational Topics No. II Bulleting, 1912* no. 15 (United States Bureau of Education, Government Printing Office, Washington, 1912):15-17; Thomas D. Wood, "Health Problems in Education," *Education Board Journal* 44 no. 3(March, 1912):15; Thomas D. Wood, "Health Problems in Education," *National Education Association Journal of Proceedings and Addresses* 50 (Printed by the University of Chicago Press, 1912):540-545; Thomas D. Wood, "Health Problems in Education," *Public Health, Michigan* 7 no.5(Oct-Dec, 1912):221-226. See also, John Palmer Garber, *Current Activities and Influences in Education: A Report Upon Educational Movements Throughout the World,* (Philadelphia & London: J.B. Lippincott Company, 1913):337-338; W. A. Evans, "Human Efficiency," *Public Health Journal* (Toronto) 4 no. no. 3 (March, 1913):140.

After his term as Director of Physical Training for New York City Public Schools and his advocacy for a school hygiene board independent of the Board of Health, Gulick moved on to become Director of Child Hygiene at Russell Sage, and with Associate Director, Leonard Ayres, published an integral book on medical inspection in 1908 called *Medical Inspection in the Schools.* They voiced their concerns regarding sketchy statistics and false claims of the connection between physical defect and mentality. As in the discussion of anthropometry in physical education, doctors realized that medical examinations were subject to "the personal equation," whereby statistics varied from examiner to examiner.[176] Ayres and Gulick described this subjectivity, noting that an examination of students in Sioux City found that 80% students were "defective," while in Minneapolis the same group numbered merely 18%. In the Chicopee, Massachusetts only one in 500 students had "perfect teeth" and this notable individual had a problem with his spine.[177] Ayres wrote "[W]here the personal equation is so important and methods and standards so little established as in the field of medical inspection, the greatest caution must be exercised in drawing sweeping conclusions from the figures furnished."[178]

The Bureau of Municipal Research also investigated the accuracy and consistency of medical inspection in New York City and their results were quite dismal. They found that two inspectors examining different children, albeit within the same school, had results differing 100%. They also reported on an experiment in which the same children were examined by two different inspectors. The first inspector found 70 students with adenoids and the second found 96, with only 49 students in common for both inspectors. Likewise, the first inspector found 72 with defective vision, the second found 101, with only 51 in common. In terms of dental problems, the first found 161, the second 206, and there were 147 in common. Thus, the bureau

[176] Leonard Ayres, "Physical Defects and School Progress," APER 14 no. 59(April, 1909):206.
[177] Gulick and Ayres, *Medical Inspection* (1908 ed.), 88.
[178] Ayres, *Laggards in Our Schools* (New York: Russell Sage Foundation, 1911), 131.

asserted, "**physical examinations as conducted have been far from uniform"** and "**some plan must be devised for standardizing them."** [179]

Additionally, some medical inspection was found to be too superficial. In Boston the School Committee criticized the practice of children only receiving inspections if they were referred by teachers to the medical inspector, leading to many children never being inspected by a medical professional.[180] Superintendent Maxwell pointed out in 1908 that only a fraction of students were examined when the Board of Health made inspections, due to similar practices of initial screening by teachers.[181] In 1912, the Bureau of Municipal Research also criticized the practice of examining students fully-clothed. While the Department Health thought parents would not like young girls undressed for the examination, the Bureau found due to this practice "as well as to the fact that the length of time allotted to each child is a few minutes at the most, the examinations are not thorough."[182]

Several medical men also observed that the use of the vague term "defective" incited unnecessary alarm. Gulick and Ayres emphasized that the term had taken on a "new meaning" which should not be exaggerated because it might only signify a dental cavity.[183] Moreover, adenoids often counted for defective nasal breathing and throat defect, inflating the statistics. If the percentages did not count enlarged glands, bad teeth, defective vision and breathing, hypertrophied tonsils and nasal growths, it reduced the percentage to 19%, according to Linsly R. Williams, head of the Vanderbilt Clinic at Columbia University. There was no need to

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[179] *A Bureau of Child Hygiene: Co-operative Studies and Experiments by the Department of Health of the City of New York and the Bureau of Municipal Research* (Bureau of Municipal Research, 261 Broadway: September, 1908):13. [their emphasis]
[180] "Suggested Changes in Boston's Lower Grade Schools," *Charities and the Commons* 17 no. 22(March 2, 1907):1034.
[181] "Demand New System of School Hygiene," *New York Times*, 16 June 1908, pg. 8.
[182] "A Report Upon the Health Conditions in the Public Schools of New York City," *Medical Record* 82no.9 (August 31, 1912):407
[183] Gulick and Ayres, (1908 ed.), 88.

"unnecessarily alarm the people" by leading them to believe that two thirds of the New York children were "lame, sick, halt and blind" or "candidates for institutions."[184] Another critic noted that the examinations had "such latitude that it really is almost an exception for any child to pass unscathed."[185] By the same standards, every adult that wore glasses would be labeled defective "including President Roosevelt."[186] Gulick and Ayres asserted "[T]he figures do not mean that our schools are filled with physical wrecks."[187]

School hygiene specialist F.B. Dresslar noted what has come to be known as confirmation bias, or "the alleged tendency in people to seek information that confirms, and to avoid that which disconfirms, their current belief or favoured hypotheses."[188] He found that "[O]ur medical inspectors are now on the hunt for defects."[189] They went into the schools looking for defects, and that is what they found. Apparently, the inspectors were fascinated by the ailments. Dresslar believed they, "sometimes get so enamored with beautiful cases of disease that they cannot passionately love a case of perfect health and perfect development. The normal with many of them is the abnormal."[190] He wanted doctors to be happier with a "large list of healthy well-developed children than a long list of those who are physically defective and diseased."[191]

Two examples can illustrate the extremes in this "hunt for defects." One early case was Professor Will S. Monroe's 1898 observation of public school students. Among his observations

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[184] Linsly R. Williams, "Statistical Information Concerning the Physical Welfare of School Children," in *Proceedings of the National Conference of Charities and Correction, Thirty-fourth Annual Session held in the City of Minneapolis, Minn., June 12th to 19th 1907,* ed. Alexander Johnson (Press of Wm. B. Burford): 156-157.
[185] "Defective Pupils in the Public Schools," *Medical Notes and Queries* 3 no. 11(November, 1907):248.
[186] Ibid., 248.
[187] Gulick and Ayres, (1913 ed.), 40.
[188] Jonathan St. B. T. Evans and David E. Over, *Rationality and Reasoning* (Hove, East Sussex, UK: Psychology Press, 1996),103.
[189] Fletcher B. Dresslar, "The Duty of the State in the Medical Inspection of Schools; Results which the Public Many Rightfully Expect," *National Educational Association Journal of Proceedings and Addresses* 50 (Printed by the University of Chicago Press, 1912):262.
[190] Ibid., 262.
[191] Ibid., 264.

were individual students tapping the foot on the floor seven times, twisting hair five times, licking lips five times, folding arms four times, biting fingernails seven times, frowning eight times, pulling at a button seven times, shrugging five times, and numerous other movements.[192] Each of these represented one student repeating one movement for the entire school day. He held that these were likely to be evidence of chorea because "[T]he development of the malady is slow and insidious."[193] Monroe also approached a student in his normal school classes to discuss her "annoying movement" of toying with a pencil in class.[194]

Another extreme view was published in 1910 by Lawton M. Hartman, a Pennsylvania physician. He found signs of serious nervous disorder in youth, which would most likely lead to neurasthenia, to include: "mental inattention, distraction and mental laziness, all of which may show themselves as mistakes in thought, mistakes in writing from dictation or in copying, loss of mental accuracy, inability to memorize accurately and with ease, lack of initiative and a plainly observed development of physical exhaustion."[195] While these numerous learning issues could be a sign of intellectual disability, Hartman was taking the medicalization of education to its limit, asserting that poor behavior could not be a form of normal agency. Hartman acknowledged the uniqueness of his views, criticizing medical inspectors who did not take such behaviors into account when determining nervous disease. [196]

Gulick and Ayres also pushed against the common knowledge of the time—that physical defects caused mental defects, or retardation defined as failure to be promoted to the next grade, and becoming "over-age." Insisting that reports linking physical defect and retardation were

[192] Will S. Monroe, "Chorea Among Public School Children," APER 3 no. 1(March, 1898):20.
[193] Ibid., 20.
[194] Ibid., 20.
[195] Lawton M. Hartman, "The Problem of the Public School From the Medical Point of View: The Studies and their Effects on the Nervous System," *The Pennsylvania Medical Journal* 13 no. 8 (May, 1910): 584.
[196]Ibid., 584.

based on "meager and unsatisfactory" investigations and that such "dogmatic statements making general application of partial results should be avoided," they headed a Russell Sage study called "The Backward Children Investigation" to examine the connection between physical defects and school progress.[197] They set out for a thorough investigation, utilizing the records of 20,000 children examined by the New York City Board of Health.[198] They found that while 75% of the "retarded" children had defects, 80% of the children labeled normal also did. Moreover, they found that, discounting vision, defects decreased as pupils matured.[199] They asserted that their investigation illustrated that physical defect did not cause backwardness, yet defects did result in additional time needed to complete studies, such as 10% of a year for adenoids, and 60% of a year for defective breathing.[200] Generally, children with defects made 9% less progress than those that were deemed healthy.[201] Even with these qualifications, a reviewer held that Gulick and Ayres "successfully exploded the argument of many physicians and certain educators to the effect that physical defects constitute the great cause of school backwardness"[202]

If physical defects did not determine mental capacity in children, then what were the factors in the child's educational success? Gulick and Ayres examined factors outside of the student's physiology. Upon analyzing school records they found that age upon starting, irregular attendance and courses that were too difficult were key factors in failing, in addition to physical defects. They called for improved compulsory education and truancy laws since 25% of children only attended school 75% of the time.[203] They also wanted to track students within a grade by

[197] Gulick and Ayres, (1913 ed.), 152, 163.
[198] Ayres, *Laggards in the Schools*, 2.
[199] Gulick and Ayres, (1913 ed.), 156-157.
[200] Ibid., 162.
[201] Ibid., 163.
[202] D.P. MacMillan "Untitled Review," *The School Review* 17 no. 10 (December, 1909):723.
[203] Edward Marshall, "To Help the Tragic Army of Failures in Schools," *New York Times*, 2 April, 1911, pg. SM4; Ayres, *Laggards in Our Schools*; Ayres, "Irregular Attendance—A Cause of Retardation," *The Psychological* Clinic 3 no. 1(March, 15, 1909):1-8.

intellectual ability.[204] Gulick went further and spoke about the student's home life and parental treatment as integral to school success. He told a newspaper reporter that, "[N]ine-tenths of schoolchildren's faults can be traced to the parents."[205] Among these were parents sewing children into their undergarments, permitting stimulants, and pressuring students to do well. This more holistic view of child development shifted the fault away from physical defects. Undoubtedly troubled by the work of many in the field, Ayres concluded boldly, "[T]he long yearned-for road to learning is not always to be found through the surgeon's knife… The old-fashioned virtues of industry, application, intelligence, and regularity still hold sway, and among the reasons for poor scholarship are still to be found such old standbys as age upon starting, absence, laziness and stupidity."[206]

Superintendent Maxwell reportedly was surprised by such findings, remarking that, "[T]he conclusion that will cause most surprise… is that physical defects play a much less important part in retarding children's progress in school than has been supposed."[207] However, he did not relinquish his opinions so quickly. He held that "too much stress should not be laid on this finding" because Gulick and Ayres used the statistics provided by the New York Board of Health, the organization that Maxwell did not hold in high esteem.[208]

By 1910, others in medicine and education were turning an increasingly critical eye on physical defects causing mental problems. Ayres' former colleague Roland P. Falkner drew similar conclusions that "[T]here is no reason on earth why a lame boy should not be a good student."[209] Social conditions, school habits of children, school administration and home

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[204] Edward Marshall, "To Help the Tragic Army of Failures in Schools," SM4.
[205] Ibid., SM4.
[206] Ayres, *Laggards*, 131
[207] "Causes That Retard Children in School," *New York Times*, 14 February 1909, pg. 11
[208] Ibid., 11.
[209] Roland P. Falkner, "Some Recent Developments of School Statistics," *Quarterly Publications of the American Statistical Association* 12 (June, 1911):586.

environment were to be considered important to development, in addition to physical and mental characteristics.[210]

Doctors came to critically assess adenoid surgeries and many believed they were no longer the school hygienists' panacea. In 1909, a Brooklyn doctor named Julius Solow declared that "[T]he Board of Health is conducting a veritable war against hypertrophied tonsils and adenoids."[211] He appreciate the efforts of school medical inspectors, who were "anxious to do their full duty," but opined, "[O]f course, nobody is perfect, and very frequently the medical school inspectors send children whose throats and noses are in perfect condition."[212] A Kansas City doctor, O.P. Bourbon, took the issue more seriously, claiming adenoid removal a "fad" which led to unnecessary and sometimes fatal procedures. He found that "[T]he laity commonly believe, or rather are led to believe, that operations for the removal of adenoids and enlarged tonsils, and the necessary employment of anaesthetics are simple, safe, and unattended by danger."[213] However, children throughout the country died from unnecessary operations performed by young surgeons that were "anxious to operate."[214] Most people who had adenoids when they were younger were perfectly fine, he maintained. He warned, "[D]o not make an enlarged tonsil or suspected adenoids —for in some cases they are very small, or do not exist except in the imagination of some one—account for every ailment the child may have."[215]

The link between adenoids and deviance was also called into question. In 1907, doctors at the Philadelphia Neurological Society disagreed with Walter Cornell's assertion about the

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[210] L. N. Hines, "A Study in Retardation," APER 17 no.7 (October, 1912):534-536; George H. Dawson, "A Characterization of the Prevailing Defects in Backward Children and a Method of Studying and Helping Them," *Proceedings of the Child Conference for Research and Welfare, 1909* (G.E. Stechert & Co., New York City, 1910); 109-116.
[211] Julius Solow, "The War on Adenoids and Tonsils by the New York Board of Health," *Medical Record* 76 no. 20 (November 13, 1909): 827.
[212]Ibid., 827.
[213] O.P Bourbon, "Bacteriology of the Eye," *Clinical Reporter* 23 no. 8 (August, 1910):11.
[214] Ibid., 11.
[215] Ibid., 19.

link. The society's president, Alfred Gordon, was recorded as commenting: "He has seen brilliant children with adenoids, with deviated septum… He has always believed that the reports on the marvelous improvement following the removal of those physical deficiencies have been exaggerated and misrepresented."[216] Neurologist John H.W. Rhein agreed, stating that he "does not believe that the removal of adenoids and tonsillar enlargements has much effect on the development of feeble-minded children."[217] Cornell defended his views: "It is ridiculous to say that adenoids or enlarged tonsils do not have a profound influence on the mentality."[218] He cited Cronin's work and also exhibited before and after photos. However six years later, Cornell was beginning to have his own doubts. He found that many students who had adenoids removed continued to fail in their studies. He wrote that this "certainly explodes the theory that the removal of adenoids is the panacea for all juvenile delinquencies."[219]

By the 1910s, psychologists began to voice concerns about the easy equation of adenoids with deviance. The founder of clinical and school psychology, Dr. Lightner Witmer, believed that physical defects had to be dealt with, but also emphasized concerns for the child's home, parents, personality, and economic hardship. [220] Specialist in juvenile delinquency, William Healy, also held a more complex model of child development. In titling one of his books, *The Individual Delinquent*, he highlighted the unique circumstances of each child and distanced himself from dogmatic assertions of causation. Like Witmer, he believed the necessity of fixing any remedial medical issues as a pre-requisite for other types of work. He wrote that there had

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[216] Alfred Gordon, "Discussion of Mentally Defective Children in the Public Schools," *The Journal of Nervous and Mental Disease* 35 no. 5(May, 1908):335-336.
[217]John H.W. Rhein, "Discussion of Mentally Defective Children in the Public Schools," *The Journal of Nervous and Mental Disease* 35 no. 5(May, 1908):335.
[218] Walter Cornell, "Discussion of Mentally Defective Children in the Public Schools," *The Journal of Nervous and Mental Disease* 35 no. 5(May, 1908):336.
[219] Cornell, *Health and Medical Inspection of School Children* (Philadelphia: F.A. Davis Company, 1912), 278.
[220] Lightner Witmer, "Restoration of the Child of the Slums," *The Psychological Clinic* 3 no. 9(February 15, 1910):266-280.

been exaggeration regarding the effects of adenoids on mentality, citing the work of Gulick and Ayres, "who, after having made a most extensive survey of the conditions among large numbers of school children, become very conservative in a general statement about the matter of the final results of such physical defects as large tonsils and adenoids. They show clearly that these troubles tend to disappear with increasing age."[221]

The notable Boston physician Richard Cabot was very accustomed to the inordinate use of adenoid surgeries to solve problems of backwardness. He observed that:

> We say: "Cut out the child's adenoids and the trouble will cease." Now and then that is true. Sometimes the child is brighter and better after the adenoid operation. But it is *always* easier to cut out the tonsils than to face the whole problem of why that child is backward and what are the circumstances leading up to his condition at this moment; so we send for the doctor, have the operation done and feel relieved. But in many, many cases the backward child is there just the same, and will be there until we recognize the spiritual problem of his individuality.[222]

In terms of mentality, L. Harrison Mettler, a professor of mental and nervous diseases, also put forth a warning not to judge children by narrow standards. At the 1913 section meeting on nervous disease of the American Medical Association, Mettler reacted to a paper titled "Preneurasthenic and Preinsane Conditions," in which the speaker, Ross Moore, labeled incipient nervous conditions of young people. Similar to Monroe, Moore was searching for an early phase of an illness, and this led him to medicalize personality. For instance, "Predements" were intelligent adolescents who "often carry a hazy and terrifying knowledge of their own apartness from their associates."[223] Mettler felt he needed to tell his colleagues at the American Medical

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[221] William Healy, *The Individual Delinquent: A Text-Book of Diagnosis and Prognosis for All Concerned in Understanding Offenders* (Boston: Little, Brown and Company (1918[1915]),219.
[222] Richard C. Cabot "The Consecration of the Affections (Often Misnamed Sex-Hygiene)," *Proceedings of the Fifth Congress of the American School Hygiene Association* 3 (Published April, 1911, by the American School Hygiene Association):116-117.
[223] Ross Moore, "Preneurasthenic and Preinsane Conditions," *Transactions of the Section on Nervous and Mental Diseases of the America Medical Association* (June, 1913):156.

Association to take caution. He maintained that "in our pedagogic enthusiasm, we must be careful not to go too far and regard individuals as defective who do not conform to our personal standard of normality."[224] Doctors must realize their subjectivity because "[T]he art-loving child may appear to be quite peculiar to the mere card-playing doctor."[225] Moreover, doctors should also pay attention to the child's environment because "children are sometimes rendered neurasthenic and hysteroid by their environment and stupid parents."[226] He urged his colleagues to learn more about "what mental health means for a given child and not adopt any fast and set standard, based merely on average mediocrity. This is a large task."[227]

Class and Compliance in Medical Inspection

The internal criticism within school hygiene was undoubtedly influenced by the medical inspectors' constant struggles in having parents fulfill their prescriptions. While the adenoid riot provides an extreme case of parents actively challenging medical inspection, those involved in school hygiene mostly encountered the less dramatic problem of persistent non-compliance among parents. Apparently, a majority of parents did not see the medical suggestions as serious or necessary, viewing health obligations from a different perspective. Although resistance among the working class received some publicity, not all hygienists were convinced that the working class was wholly uncooperative or ignorant. They often noted they could simply not afford some treatments and that there was also resistance and negligence among the middle and upper classes.

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[224] L. Harrison Mettler, "Discussion," *Transactions of the Section on Nervous and Mental Diseases of the America Medical Association* (June, 1913):159; See also, S. Philip Goodhart, "The Exceptional Child; the Influence of Environment and Education Upon his Development," *The American Journal of Obstetrics and Diseases of Women and Children* 62 no.4 (October, 1910):706-716.
[225] Ibid., 160.
[226] Ibid., 160.
[227] Ibid., 160.

As medical inspection was first emerging in the late nineteenth century, doctors met the common sentiment that "children are better to have the children's diseases, such as measles, whooping-cough, scarlet fever, and be done with them."[228] They should have them "while young and thus have it over with."[229] While vaccination would remain a struggle, contagious disease quarantines were mandated by local boards of health.[230]

In New York's early inspections, Thomas Darlington, the city's Commissioner of Health observed various types of conflict over the practice of excluding children for lice and contagious eye disease. On the first day of school in September 1902, children were examined and almost two thousand were sent home for lice. He cited widespread "indignation" from the parents of the excluded children and from those who were not excluded but who were "indignant that such conditions were allowed to exist in the public schools where their children attended."[231] The health department office was "besieged with mothers and children berating inspectors." One woman "who thought she was imposed upon because she was a widow met the male inspector at the school and berated him very strenuously."[232] Another expressed frustration over not being able to find the proper lice treatment, having misunderstood the medical term. After the troubles with the parents, Darlington concluded "this wholesale exclusion of children was just not right."[233] He helped to amend the exclusion practices, including allowing children to remain in school if they appeared to be under treatment.

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[228] F.M. Turnbull, "Education as a Means for the Prevention of Insanity," *Journal of Nervous and Mental Diseases* 9 no. 2 (April, 1882):287.
[229] Severance Burrage, "Medical Inspection of School Children," *National Education Association Journal of Proceedings and Addresses* 37 (Printed by the University of Chicago Press, 1898):541.
[230] On the struggles over vaccination see James Keith Colgrove, *State of Immunity: the Politics of Vaccination in Twentieth-century America* (Berkeley: University of California Press; New York: Milibank Memorial Fund, 2006); Duffy, *Sanitarians*, 181-183.
[231] Thomas Darlington, "Precautions Used by the New York City Department of Health to Prevent the Spread of Contagious Disease in the Schools of the City," *The Medical News* 86 no. 3(January 21, 1905):100.
[232] Ibid., 101.
[233] Ibid., 101.

Many investigators kept track of the actions among the parents in response to medical inspection notifications. Lewis Terman held that in early New York City inspections in the 1890s, 94% of the notifications of illness "failed to bring any result."[234] In 1907, Cronin held that only 30% of notices to parents were acted upon.[235] In the same year, medical inspectors went to great lengths in Cleveland: "Strenuous endeavors were made to secure measures looking for the removal or alleviation of the defects" and through "cooperation of principals, teachers, dispensaries, physicians and parents" merely 22.5% of the health problems were treated as per suggestion.[236] In Bridgeport, Connecticut in the early 1910s, 7.4% prescriptions were acted upon for the 10,894 found needing them.[237] In a 1914 medical inspection of Chicago public schools, 35,425 children were advised in some way to correct defects out of 75,476 examined. Out of those that were prescribed treatments, merely 4% of the tonsils were removed, 18% of the adenoids, 2% of diseases of the eyes were dealt with and 19.5% of those needing glasses obtained them.[238] In one rendering written in 1915: "Certain progressive school systems by persistent and costly follow-up work and by pressing into their service all available outside agencies—public dispensaries, hospitals, district physicians, and private doctors—have secured treatment for *somewhat more than half the children who need it.*"[239]

Prescriptions for ear infection and tooth decay were fulfilled less frequently than others. Dental problems were among the most frequently found, often skewing the percentages of

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[234] Lewis Terman, "School Clinics for Free Medical and Dental Treatment," *The Psychological Clinic* 5 no. 9 (February 15, 1912): 275.
[235] John J. Cronin, "New York's School Children," *Proceedings on New York State Conference of Charities and Correction at the Seventh Annual Session* (Albany: J.B. Lyon Company Printers, 1907):106.
[236] Gulick and Ayres, *Medical Inspection* (1909, ed.), 102.
[237] Florence A. Sherman, "Medical Inspection in Bridgeport (Conn.) Public Schools," *Fourth International Congress on School Hygiene* 4(August, 1913):394.
[238] Mrs. Edward W. Hooke, "To Save All Babies," *The American Club Woman* 10 no. 6(December, 1915):117.
[239] Jesse D. Burkes, "Public School Clinics" in *Educational Hygiene from the Pre-School Period to the University*, ed. Louis W. Rapeer (New York, Chicago, Boston: Charles Scribner's Sons, 1915), 245.

overall defect found among schoolchildren. Hygienists were undoubtedly out of touch with the population to expect dental care, especially for primary teeth. Even in Boston's "most aristocratic suburbs" 75% of school children never went to the dentist.[240] Parents were also not inclined to follow recommendations when faced with "runny ears" because the treatment was known to be "a tedious ordeal."[241] Hoag and Terman found that 90% of parents, both rich and poor, did not take care of ear infections properly, even when they were "urgently and repeatedly advised."[242] Realizing that a large proportion could not afford specialists and did not want to take charity, they also thought parents underestimated the seriousness of the illness.

In his 1912 tome on medical inspection, Cornell included some examples of parents' letters to teachers and school nurses, revealing all sorts of issues which often led to frustration with and resentment of medical inspection. One letter reveals monetary concerns and aggravation over the issue of glasses and truancy. A parent wrote to two schoolteachers that:

> I don't think you teachers know what you want anyway[.] you send them home to get glasses then you want to send the truant officer after them[.] you knew that she was sent home for glasses only you want to make a fool out of the parents[.] i done my duty to my children[.] you mustn't think that I am a millian air[.] i had to get 2 of them glasses[.] you can send ten truant officers after me if you like [.] you let her go to the haspital this after to get her glasses tested for I don't think much of it.[243]

Others opposed the various diagnoses because they thought it was due to another cause:

> We received the note from the Doctor and will say that we give him medical attention when he needs it. We know that George has headaches but when he comes home from school he complains of a boy in the 3rd grade by the name of Andrew Aimeck who knocks him down and jomps on him. I wish you would give this your attention. I know boys are all alike but this boy is mutch larger.[244]

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[240]Lewis Terman, "School Clinics for Free Medical and Dental Treatment," *The Psychological Clinic* 5 no.9 (February 15, 1912):275.
[241] Ibid., 276.
[242] Ernest Bryant Hoag and Lewis M. Terman, *Health Work in the Schools* (Boston: Houghton Mifflin Company, 1914), 115.
[243] Cornell, *Health and Medical Inspection of School Children*, 74.
[244] Ibid., 73-74.

Resentment, frustration, and denial of the supposed medical condition could all play a role in this complex system of medical inspection:

> I received a note wich Martha brought home to instruct me to take her to a doctor. now I want you to know that I or my can Judge wen Marth neads medical treatment[.] if Martha is sick I keep her home. I send Martha to school to be instruction[.] my wife has ask you to give Martha some lessons to bring home and my wife would instruct her[.] you complain about Martha[.] she keeps her mouth open[.] well she does just as any other child would wen intrested or surprised[.] it is more or less a habit with her and no catarrh[.] she has a slight cold I will atmit but nothing more. So I hope you will give her some lesson to bring home and we will instruct her best we can.[245]

The father writing this letter maintained that he is capable of judging when his daughter was ill and notes that her mouth-breathing was not due to catarrh (respiratory issues). He did not think that her cold was a problem or that she should see a doctor. He asserted control over his daughter's health and wanted more control of his daughter's schooling, as he asked for her work to be sent home so his wife could work with Martha.

It was difficult for many people to accept the aid of charity. One person poignantly illustrated this:

> I wish to thank you very much for paying for Elizabeth's glasses. It hurt me very much to accept them as I never received anything in that way before. But as things are at present I could not spare the money. But as long as her Father is a sober [,] industrious man I do not think we did any wrong in accepting them. I again wish to send thanks for Elizabeth.[246]

This letter also shows that some people appreciated the efforts of the medical inspectors.

Jacob Sobel, a New York City physician of long-standing, encountered resistance within the diverse population. Working at dispensaries at Beth Israel and Good Samaritan, and serving

[245] Ibid., 74.
[246] Ibid., 73.

as Manhattan Borough Chief of the Division of Child Hygiene of the Department of Health, Sobel expressed frustration with noncompliance. Speaking before the Congress on School Hygiene in 1913, he related many of his experiences in the "tenement district," where a doctor "must deal not only with the conditions at issue, but what at times is more difficult—he must meet and combat a fusillade of prejudice, tradition and superstition, ignorance, distrust, apprehension, indifference, irresponsibility, poverty and antagonism."[247] The belief in traditions functioned as resistance to a new medical standard. While Sobel had a sarcastic and sometimes condescending attitude, his descriptions can show the customs that operated within New York's ethnic enclaves in the early twentieth century.

Although he claimed to interact with over 17 ethnic groups, he most frequently singled out African-Americans, Jews of the Lower East Side, and Italians. Italians were reluctant to cut their children's hair or nails and clothed their children in unseasonable "mummy-like garb" which was thought to keep their legs straight and their feet small. Some African-Americans appeared to have their own doctors who practiced "Voodooism or the superstition of the negro." Among others who were unclassified, the "backwardness" he found in children was attributed to eating the end of bread loaves, while wetting the bed was due to playing by the fireside. Some people were found licking their children when they thought that Sobel had cast the 'evil eye' upon them during his examination. "Woe betide you if you chance to step over the child as it play on the floor of the home!" Sobel exclaimed. "Doesn't this retard its growth? Atone then for your mistake, retrace your steps and recross it."[248]

Aside from these beliefs, he found much resistance to the common school hygiene suggestions. There was reluctance to buy eye glasses because of concerns about appearance, the

[247] Jacob Sobel, "Prejudices and Superstitions Met With in the Medical Inspection of School Children," *Fourth International Congress on School Hygiene* 4(August, 1913):78.
[248] Ibid., 81-82.

belief that they make eyes weaker, and the consideration of glasses to be a luxury. He found people using folk remedies for eye problems, such as passing hands before the eyes, putting breast milk or sugar on the eye. Like Cornell, he also found people reluctant to fix "running ears." Visiting the dentist was particularly hated and not seen as necessary. Additionally, parents provided their children with wine, beer and coffee against Sobel's wishes.[249]

Adenoids and tonsil operations were also a subject of great controversy. One Irish woman disagreed with the suggestion for removal: "Is that so? Sure God put them there and there they'll stay." This view was contrasted with one given by an African-American, described to be educated, who assumed that such an operation would alter his nose shape: "The negro is in a great measure characterized by his flat nose and yet you advocate the removal of my adenoids which would result in making my nose higher. I shall never do it. Always be what you are." "The mother of the Jewish ghetto," on the other hand, was worried that removing the tonsils would produce chest problems, interfere with speaking and the singing voice, "produce a loss of sexual instinct and creative power," or lead to "hypochondriacal and suicidal tendencies."[250]

Surely medical inspections often took place across social and ethnic divides. The doctors tended to be American-born middle and upper-class men and the young students were often first or second generation immigrants or working-class Americans. At a time when educators clearly expressed that they sought to "Americanize" students in various ways, medical inspection could be interpreted as part of this agenda, despite its European origins.[251] Historian Alan Kraut has emphasized how such hygiene initiatives were undergirded by altruism as well as assimilationism, yet he complicates the narrative by writing about doctors such as Maurice

[249] Ibid., 83.
[250] Ibid., 81.
[251] On Americanization education see, Jeffrey Mirel, *Patriotic Pluralism: Americanization and European Immigrants* (Cambridge, Mass.: Harvard University Press, 2010); Paula S. Fass, *Outside In: Minorities and the Transformation of American Education* (New York: Oxford University Press, 1989).

Fishberg who defended Jews from claims that they were unclean and diseased.[252] There were others like Fishberg, who spoke up for immigrant groups, recognized ethnic bias, and maintained that the rich and middle class were often ignorant and negligent of proper health practice. Recognizing this fact leads to the conclusion that this was not only a class conflict, but an ideological one regarding the spread of the new hygiene of prevention throughout the population. One Connecticut medical inspector claimed that, "[M]y experience has been that not only foreigners but many of our own *American families* need enlightening along these lines."[253] New York physician Alfred Shipley also noted the class bias, stating that "defective conditions are not confined to any class of people, for they occur amongst the rich as well as the poor. This is well known by those of used who are doing this work, but it is difficult to persuade those not familiar with the situation that the field is not confined to the tenement sections of our cities."[254] Another physician believed that, "[N]ot infrequently intelligent, well-to-do parents are wholly unaware of physical conditions that retard their child's progress in school. Again, many parents, by reason of ignorance or indifference, neglect the correction of conditions that have to do with normal development."[255]

Some doctors recognized that prejudice against poorer people led many people to believe that their children were not liable to certain ailments. St. Louis doctor Charles Wyche observed in 1907 that "there is a popular prejudice in the minds of well-to-do parents or guardians, that only children of the poor are hampered by ailments undiscovered by parents or guardians."[256]

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[252] Kraut, *Silent Travelers,* 227,248.
[253] Sherman, "Medical Inspection in Bridgeport (Conn.) Public Schools," 399.
[254] Alfred E. Shipley, "Health Problems Encountered in Visits to School Children," *Proceedings of the Sixth Congress of the American School Hygiene Association Volume IV* (Published by the American School Hygiene Association, July, 1912): 41.
[255] Clyde E. Ford, "The Responsibility of the City in the Tuberculosis Problem," *The National Association for the Study and Prevention of Tuberculosis Transactions of the Seventh Annual Meeting* (June, 1911): 62.
[256] Charles Wyche, "Inspection of School Children with Special Reference to the Ear, Nose and Throat," *St .Louis Medical Review* 55 no. 18(May 4, 1907):453.

He believed that this prejudice was exacerbated in situations "where parental authority is thought to be interfered with."[257] William H. Allen also made the point that adenoids affected children of the city and country, of all classes. In one case, the parents of a well-off, ill young man "looked for the trouble to back generations and in psychology books,—everywhere but at the boy's face, in his mouth, and in his nose."[258] It took a chance encounter with a poor child selling candy, who Allen believed had the tell-tale signs of adenoids, to convince the child's father that his son had a similar appearance and that he certainly needed adenoidectomy.

Investigations of health found that middle-class and the wealthy needed medical intervention. In a Cleveland investigation conducted in 1908, the amounts of defects found among children from the poorest area, and children from the wealthiest area varied slightly. From the 616 pupils examined in the poorer group, 2% had defective hearing, 13% ear trouble, 58% nasal obstruction, and 15% were labeled mouth-breathers. From the 668 wealthy students the statistics for the same categories numbered 5%, 9%, 45% and 12%.[259] In Washington D.C. Rebecca Stoneroad also compared a poor district to a wealthy one. While poor children seemed to have worse hearing, worse eyesight, more frequent headaches and coughs, and the girls had greater troubles with menstruation, the wealthy district led in certain areas. Both wealthy males and females had suffered from diphtheria and scarlet fever at a greater rate than the poor, and the wealthy young men led the poor young men in the rate of measles and whooping cough. Among the wealthier students 14.5% of the young women had a poor appetite and 30.2% were judged to

[257] Ibid., 454.
[258] Allen, *Civics and Health*, 52.
[259] J. Richey Horner, "The Nose and Throat in Relation to Nervous and Mental Abnormalities," *Medical and Surgical Reporter* 16 no. 12. (December, 1908): 453-454.

have a frail, sick or nervous appearance, compared with 11.4% and 24.2% of the poor students. The wealthy males also were judged slightly more frail, sick or nervous than the poorer males.[260]

The problem of nutrition was found in all classes. Dr. Charles G. Kerley, a physician at the New York Infant Asylum, found "ignorance existing among all classes as to the food values from the nutritional standpoint."[261] While poor people often lacked food, the rich were cited for improper nutrition, lack of sleep, and indulgence in candy, coffee and tobacco.[262] One New York investigation found that among 168 cases of children suffering from malnutrition, 20 came from families with less than $10 a week income, while 54 cases had more than $20 a week.[263] In Boston, an investigating doctor held that of the 70% of his malnutrition cases came from homes classified as "good" and the remainder from "poor" homes, and concluded that "in every community there are many poorly fed children."[264] Such findings led Gulick and Ayres to write in their 1913 edition: "Medical inspection is essential in country districts as well as in large cities, and in rich communities as well as in poor ones. The locality has yet to be discovered in which the medical inspection of school children is unnecessary or undesirable."[265]

In some cases of compliance the poor were compared favorably with the rich. Walter S. Cornell found that in Philadelphia, the rich were less likely to comply with recommendations for

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[260] Rebecca Stoneroad, "Health Statistics of Public School Children of Washington D.C., with reference to grade, sex, and environment." *Fourth International Congress of School Hygiene Transactions* 5 (August, 1913)70-71.
[261] Charles G. Kerley, "Tardy Malnutrition: Its Treatment by Diet and Rest," *Transactions of the Section on Diseases of Children from the American Medical Association* June, 1907 (Chicago: American Medical Association Press, 1907):81.
[262] Cornell, *Health and Medical Inspection,* 485; Fletcher B. Dresslar, *School Hygiene* (New York: Macmillan Company, 1913), 320.
[263] Cornell, *Health and Medical Inspection,* 489.
[264] Mabel Delano Lord, "Health, Anemic Children in an Open-Air School," *The Survey* 26 (April 22, 1911):142. For opinions that illness and neglect were found in rich households as well as poor see also, Lightner Witmer, "Retardation through Neglect in Children of the Rich," *The Psychological Clinic* 1 no.6 (November 15, 1907): 157-175; Shipley. "Health Problems Encountered in Home Visits to School Children," 41; W.G. Ebersole, "Public School Dental Clinics a Possibility in Each Community," *Fourth International Congress of School Hygiene Transactions* 5(August, 1913):259; Charles R. Armstrong, "Universal Medical Inspection in Our Public Schools," *Journal of the American Institute of Homeopathy* 6 no.7(January, 1914):637.
[265] Gulick and Ayres, (1913 ed.), ix.

glasses. Roughly 20-25% would follow through, compared with 33%-50% of the working class and poor. He spoke of immigrants separately, stating they "receive official recommendations with great respect" and obtain the glasses 90% of the time.[266]

The working class found some outright supporters. At the International Congress on School Hygiene George E. Smith, who was involved with public instruction in Buffalo, explained how 12,000 night school students had attended thirty lectures on school hygiene issues and were asked, at the end, if they would like to donate money to the Congress. He stressed that asking for money took fifteen minutes and was not made an overbearing imposition. He told the Congress that, "[I]t suffices to say that, as a result of these talks hundreds of dollars were raised to defray the expenses of printing the proceedings of this Congress[,] that 12,000 people are reading the abstracts of articles here presented and are spreading the news among others of their race and language. Does this look like ignorance, inability or indifference?"[267] The irony that these new immigrants were paying to have the Hygiene Conference talks published—including the speech given by Jacob Sobel—was not lost on George Smith.

Extending Hygiene: Health Education, Medical Supervision and School Nurses

School hygienists wanted to expand the field beyond schools to parents, homes and communities. Their efforts involved hygiene instruction, increased cooperation with teachers, and the employment of visiting school nurses. A final ambitious step was the creation of school clinics, which brought medical services, often without cost, to students on school premises. Cronin had attempted to create a temporary clinic in 1906, arguably causing the adenoid riot.

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[266] Cornell, quoted in Gulick and Ayres, (1908 ed.), 102-103.
[267] George E. Smith, "Question of Hygiene Peculiar to Evening Schools," *Fourth International Congress of School Hygiene Transactions* 3(August, 1913): 274.

Yet, the idea of creating appropriately-conducted school clinics remained important to school hygiene, and clinics were created and organized at the local level.

In 1908, an ophthalmologist named George W. Vandegrift proclaimed an ambitious vision for a "new school hygiene" which "must eliminate all unhygienic conditions, both at home and in the schools. Parents, children, school authorities, and physicians themselves—in other words, the public—must be educated to demand the correction of all conditions unsanitary and evil."[268] Years of medical inspection had proven that a majority of parents did not follow through with the prescriptions of the medical officers. What value was it to inspect young children and promote cleanliness, if parents were not on board? Gulick recognized such when he called for educating parents, who he believed caused 90% of children's faults.

Hygiene instruction in the schools was a starting-point for greater societal transformation. According to one New York City doctor, B. Liber:

> Let it be for him a religion: never to overeat, never to eat without being really hungry, in spite even of his parents' ignorance, who have always a tendency to overfeed him; always to eat plain, natural food; to adapt his clothes more to the temperature than to style. Give him all these instructions in such a way that they should penetrate deeply into his soul; convince him by acts and examples, so that he may bring home the conviction with all the enthusiasm and the vigor of which his youth is capable, so that he may reform and revolutionize his home. Make him the torch-bearer of rational, new and healthy ideas.[269]

Curriculum in general hygiene, "health habits," and "health hints" were discussed in education and hygiene circles.[270] Teachers were asked by school authorities to conduct health

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[268] George W. Vandergrift, "The New School Hygiene," *School Hygiene* 1 no. 4(November, 1908):53.
[269] B. Liber, "School Hygiene and the Home," *Fourth International Congress on School Hygiene Transactions* 4 (August, 1913):25.
[270] Henry Barton Jacobs, "Hygienic Instruction in Schools," *Bulletin of the Kansas State Board of Health* 12 no.5 (December, 1908):305; Frances Gulick Jewett(The Gulick Hygiene Series) *The Body and Its Defenders* (Boston: Ginn & Co, 1910); Thomas Denison Wood, *The Ninth Yearbook of the National Society for the Study of Education, Part I Health and Education*(Chicago: University of Chicago Press, 1910); Linnaeus Neal Hines, "Some Suggestions for a Course of Study in Hygiene," *Proceedings of the Fifth Congress of the American School Hygiene Association* 3 (Published April, 1911, by the American School Hygiene Association):58-64; E.L. Moseley, "Some

inspections of pupils and to give lessons in personal hygiene. Hoag and Terman suggested pupils in the lower grades be inspected for clean face, hand, nails, teeth, ears and clothing. Children also needed to have brushed hair, clean and fitted shoes, and a handkerchief.[271] The idea was, according to David Starr Jordan, "not so much to inculcate knowledge about diseases as to insure habits of living which will enable children to escape diseases and inefficiency."[272]

Students were given roles of surveiling and promoting the health habits of their fellow students, a clear implementation of John Dewey's "learning by doing."[273] At P.S. 62, in New York City, principal Israel Edwin Goldwasser created a system where class officers were elected, some having the task of doing daily hygiene inspections by "examining hands, nails, books, etc., keeping record of those who do not come up to the standard, and, when necessary, administering punishments of various kinds."[274] Students helped to develop standards by which they judged their cohort, and punishments were "meted out after due trial before a court composed of judges elected by the children of the school."[275] A "Sanitary Squad" communicated with the janitor and helped with the "vigorous campaign" against spitting. In order to diminish the feeling that students were policing their own, Goldwasser stressed, "[R]eports made of violations become a matter of public duty and are freed from all suspicion of tale-bearing…The situation is completely de-personalized."[276] Further, students were involved with the school Dental Clinic and bathing facilities. In hopes of connecting students to the wider community, Goldwasser

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Ways of Teaching Pupils Practical Hygiene," *School Science and Mathematics* 7 no.1(January, 1912):1- 5; John W. Ritchie, "Training in Personal Hygiene in Private and Public Schools," *The American City* 7 no.5(November, 1912):430; Margaret C. Beer, "Hygiene Instruction in the Gardner School of Valparaiso," *Fourth International Congress on School Hygiene Transactions* 2(August, 1913): 580-581.

[271] Hoag and Terman, *Health Work in the Schools,* 226-227.

[272] David Starr Jordan, "A Crusade for Twenty Million School Children," *Chicago Daily Tribune*, 27 July 1913, pg. 12. See also, Thomas A. Storey, "A Follow-Up System in Medical Inspection," *Transactions of the Fifteenth International Congress on Hygiene and Demography* (September, 1912):269.

[273] John Dewey, *The School and Society; Being Three Lectures* (Chicago: The University of Chicago Press, 1899).

[274] I. Edwin Goldwasser, "Pupil Cooperation Indispensable in Enforcing Hygienic Regulations," *Fourth International Congress on School Hygiene Transactions* 3(August, 1913):166.

[275] Ibid., 166.

[276] Ibid., 166.

connected them with the city's Fire Department, Street Cleaning Department and Tenement Department.[277] Inspired by these school hygiene principles, the students sought to police the administration of the pushcarts near the school where most of them purchased lunch. After a boycott and some conflicts, they managed to have the pushcart workers uphold better sanitary conditions such as washing their hands, wearing white aprons, and showing bills attesting the quality of their products.

An additional impetus in hygiene education was the realization that many students cared for young siblings. According to George H. Martin, Secretary of the Massachusetts State Board of Education, health instruction "should begin in the lowest grade, because the little children not only need to be taught how to care for themselves, but how to care for children still younger. The majority of children of the poorer families, especially of the more recent foreign immigration, have the burden early laid on them of 'minding the baby.'" [278] This was related to the creation of "Little Mother's Leagues" in New York City by the Bureau of Child Hygiene.[279]

To help insure parental compliance some administrators and teachers conducted conferences and social events. W.H. Heck maintained that, "[T]his education of the parents will take time and money, but it will pay the school and community."[280] Finding that parents did not act upon notices of eye and ear defect, the principal and teachers of an Indiana school invited them to a school play and reception. Teachers spoke with parents individually and brought up the child's school progress and medical inspections. "Parents went away with the feeling that

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[277] Ibid., 166.
[278] George H. Martin, "A Lesson from Medical Inspection of Schools," *Psychological Clinic* 3 no.1 (March 15, 1909):12.
[279] S. Josephine Baker, "Instruction in Infant Care (A) Little Mother's Leagues" *American Association for the Study and Prevention of Infant Mortality Transactions of the Second Annual Meeting* (November, 1911):306-312.
[280] W.H. Heck, "Parents' Part in School Hygiene," *Fourth International Congress on School Hygiene Transactions* 2 (August, 1913):418.

teachers were really interested in their children and not impertinently meddlesome."[281] Mothers were then invited to a social tea at the school that happened to be in a room that featured an eye chart on the wall. The mothers were curious but did not want to be tested, so the teacher volunteered and was found to be below normal in one eye. This experience sparked the mothers' interest and they "came unsolicited to the teachers to inquire about the results of the tests of their children and had defects treated by proper medical skill."[282]

In their efforts to spread hygiene to parents, homes and the community, health officials realized they needed more work and support from teachers. State laws began to mandate an increased role for teachers in medical inspection. This seemed to be a crucial step because teachers were sometimes opposed to the intrusion of medical inspectors. An inspector was considered to be "a mere fault finder," and "an unwelcome visitor" according to a Los Angeles Health Officer.[283] In 1900, William Burnham also observed that many believed "medical inspection would interfere necessarily with school work," and would become "a constant source of disturbance and friction."[284]

Gulick and Ayres explained that while there was disagreement in the hygiene community regarding the teacher's ability to discover contagious disease, many believed that the regular teacher could check for eye trouble, defective hearing and obvious nose and mouth defects.[285] Massachusetts mandated that teachers tested for sight and hearing, and Connecticut for

[281] Jessie Benton Montgomery, "School Hygiene and Community Health," *Hygiene and Physical Education* 1 no.2 (April, 1909):23.
[282] Ibid., 23.
[283] L.M. Powers, "Some Observations Made on the Inspection of Schools," *Southern California Practitioner* 18 no. 7 (July, 1903): 292.
[284] William H. Burnham, "Health Inspection in the Schools," *Pedagogical Seminary* 7 no. 1(April, 1900):86.
[285] Gulick and Ayres, (1908 ed.), 104.

eyesight.[286] During the 1906-1907 school year in Los Angeles, teachers were instructed in eye and ear tests, detection of adenoids and enlarged tonsils, as well as corrective training for chest conditions and curvature of the spine. The Superintendent urged teachers "to study with care the nutrition, vitality, and endurance exhibited by individual pupils, especially those who were failing or getting on poorly."[287] Many teachers used a system to examine the pupils, which included Snellen eye charts, and a series of questions regarding the appearance of the pupil's eyes and ears, hearing ability, frequency of illness and mouth breathing.[288] According to Milton J. Rosenau, a leading hygiene professor, the teacher was "the ultimate inspector" who "frequently knows the child better than its own mother."[289]

The employment of school nurses made a great impact on medical inspection and general school hygiene programs. Nurses often had manifold responsibilities. During the 1910-1911 school year St. Louis nurses assisted inspectors in examinations and emergencies, kept records of examinations and treatments, examined absentees upon their return to school, visited homes of excluded children and of children whose parents did not respond to repeated notices from the inspector, advised parents on health issues and opportunities for free treatment, obtained information on home life, observed school health conditions such as ventilation, and were generally responsible for the health and cleanliness of all children. They also conducted eye and ear tests and assisted the physical training department.[290] In Cleveland, the nurse had many of

[286] Ibid., 104.
[287] Ibid., 106.
[288] Inez C. Philbrick, "Medical Inspection in Public Schools," *Medical Record* 70 no. 7(August 18, 1906):253; Jessie Benton Montgomery, "School Hygiene and Community Health," *Hygiene and Physical Education* 1 no. 2(April, 1909):20.
[289] Milton J. Rosenau, *Preventive Medicine and Hygiene* (New York: D. Appleton Company, 1913), 957.
[290] "Function of School Nurses," *School Board Journal* 45 no. 5 (November, 1912):37.

the same responsibilities but was also known to teach girls "how to prepare common disinfectants and antidotes" and to "give[s] baths to the girls where showers are provided."[291]

What was of chief importance to school medical authorities was the nurses' follow-up work at students' homes. It was this activity that made medical inspections much more useful.[292] In 1912, the New York City Health Department Division of Child Hygiene recommended hiring many more nurses with the goal to insure follow-up work. They issued a report that "Unless the discovered defects are remedied, medical examinations are an unnecessary expense to the community."[293]

According to a Massachusetts Superintendent Alfred B. Morrill, "[T]he nurse is the most efficient link between the home and the school. Her work is immensely important in its direct results, and very far-reaching in its indirect influence."[294] They were important not only for the pupils but "even the rest of the members of the family" would come under the purview of school medical authority.[295] Nurses had to be tactful, sympathetic and persistent, using a variety of strategies to reinforce the school hygiene program. When they arrived at homes, they were faced with "arrogance, opposition, or distrust."[296] According to Alfred A. Shipley, a New York physician, the middle classes appeared to be the most compliant to home visiting, while the rich made a point to waste the nurse's time, leaving them "waiting in anterooms."[297] The working class and poor were "not as hopeless to reach as might be imagined" and were often in need of

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[291] J.E. Wallace Wallin, "Medical and Dental Inspection in the Cleveland Schools," *The Psychological Clinic* 4 no. 4 (June 15, 1910):94.
[292] Ibid., 94.
[293] "A Report Upon the Health Conditions in the Public Schools of New York City," *Medical Record* 82no.9 (August 31, 1912):408
[294] Alfred B. Morrill, "A Working Plan to Secure Adequate Medical Inspection." *Fourth International Congress of School Hygiene Transactions* 3 (August, 1913):409.
[295] Ibid., 409.
[296] Shipley, "Health Problems Encountered," 42.
[297] Ibid, 42.

nurses that spoke their native language.[298] Shipley thought a lack of compliance was often due to lack of time and money. He was of the opinion that nurses should step in and escort children to the dispensary when parents did not have time or money for carfare.

To get the nurse out of their homes, people often made empty promises. Shipley mentioned how nurses often made three of four visits to those promising to comply, before giving up a case. However, "[I]t is surprising how a persistent nurse after six or eight calls on a very bad case sometimes induces a parent to obtain relief for her child."[299] While in extreme cases of neglect local authorities could be called, in most cases, nurses had to master "the gentle art of suasion."[300] Edna L. Foley, the Vice President of the National Organization for Public Health Nursing, suggested that the nurse had to know "under what conditions certain ancestors performed mythical feats in the way of child-raising, in order that the changes between then and now may be pointed out for mothers who fondly believe that no child can need glasses and that adenoids are a new and wholly imaginary condition."[301] Clearly school hygiene was promoting a new standard of health and nurses were an important part of a widespread education campaign.[302]

Finally, to insure compliance, school hygienists such as Terman promoted school clinics. Citing examples from England, he argued that compliance was greater when the health services

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[298] Ibid., 42(quote), 43.
[299] Ibid., 42.
[300] Wallin, "Medical and Dental Inspection," 94.
[301] Edna L. Foly, "The Place of the School Nurse in the Public School System," *Fourth International Congress of School Hygiene Transactions* 4(August, 1913):476.
[302] On the importance of school nurses, also see Albert Merrell, "Discussion," *St. Louis Medical Review* 55 no.18 (May 4, 1907):465-466; Elizabeth P. Upjohn, "A Nurse's Social Service in the Home," *Hygiene and Physical Education* 1 no. 1(December, 1909): 822-823; Frank Allport, "School Nurse," *American Academy of Medicine Bulletin* 13 (June, 1912):145-150; Margaret C. Carley, "The School Nurse as a Link in the Chain of Preventive Medicine," *Proceedings of the Sixth Congress of the American School Hygiene Association V. 4*(Published July, 1912 by the American School Hygiene Association): 33-40; Milton J. Rosenau, *Preventive Medicine and Hygiene* (New York: D. Appleton Company, 1913), 958; E.Q. Bridgeford, "School Nursing in Second Class Cities," *American Education* 2(October 9, 1915):79-82.

came to the students, rather than vice versa. He stated that, "[T]he reason for this lies partly in the absence of expense but perhaps still more in the psychological difference between *persuading parents to do something* and merely *securing their consent to have it done.*"[303] As in the case of the adenoid riot, the parents would only have to sign a consent form, rather than take the children to a medical facility on their own time. Jesse Burkes, a government administrator in Los Angeles, highlighted the importance of clinics in providing treatment for chronic ailments, which hygienists found parents quite unlikely to follow.[304]

It is difficult to gage the prevalence of school clinics offering free medical treatment. American school hygienists were certainly interested in the topic, discussing and publicizing widespread efforts taking place in Europe for their establishment.[305] Gulick and Ayres held that there were very few free school clinics that provided treatment in 1913: dental clinics in Rochester, Cincinnati, Muskegon, Philadelphia and Elmira, NY, and an eye clinic in Cleveland.[306] In 1915, Burkes found clinics "comparatively rare and sporadic."[307] Lawrence Augustus Averill's 1917 survey of 100 cities perhaps sheds more light on this topic. Head of the department of school hygiene and educational psychology at the Massachusetts State Normal School, Averill found that 77 cities throughout the country had some type of clinic, a majority of which received voluntary services from doctors and funding from philanthropic organizations. Only 22 of these 77 cities had a clinic labeled to be a "school clinic" under the auspices of the board of health or board of education. These clinics had free inspection and "often treatment for

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[303] Lewis M. Terman, "School Clinics for Free Medical and Dental Treatment," *The Psychological Clinic* 5 no.9 (February 15, 1912):273.
[304] Jessie D. Burkes, "Public School Clinics," 246.
[305] "School Clinics in Populous Districts," *Medical Record* 72 no. 26 (December, 28, 1907):1069; Dr. Jessen, "The School Clinic of the City of Strasburg in its New Home," *Western Dental Journal* (Kansas City) 25 no. 9 (September, 1911): 665-668; Ralph Crowley, "The Present Position of the School Hygiene Movement in England," *Fourth International Congress on School Hygiene Transactions* 2(August, 1913): 380-391; Jessie D. Burkes, "Public School Clinics," 248-253.
[306] Gulick and Ayres, (1913 ed.), 87-88.
[307] Burkes, "Public School Clinics," 244.

children of indigent parents."[308] It is not clear how many clinics were simply inspecting and how many provided free treatment.[309]

Gulick and Ayres maintained in their 1917 edition of *Medical Inspection of Schools* that "there always remain a considerable number of parents who are willing that their children should receive treatment but who are unable to meet any large expense involved."[310] The school nurse certainly added to the success of school hygiene initiatives, but there had to be more cooperation from hospitals or the establishment of clinics. They judged that "in either case it is generally true at the present time in American cities that facilities are inadequate to meet the need."[311] Many school hygienists realized that the establishment of clinics or some other type of free treatment was crucial to their program, leading Lewis Terman to declare "[G]radually we are learning that it is less a question of parental responsibility than of children's rights. Private enterprise has done too little for the health of our children to justify any claim to a monopoly of the business."[312]

Biological engineers touted the extension of medical examinations to school children and pushed for treatment of remediable defect and expansion of free medical treatment. Along with other medical specialists they tried to improve the health standards of youth. Yet, medical inspections were not often as comprehensive as the biological engineers wanted. True biological engineering was individualized and holistic. When treating an adult neurasthenic in 1909, Gulick

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[308] Lawrence Augustus Averill, "The School Clinic," *The American Journal of School Hygiene* 1 no.5 (May, 1917): 96-97.

[309] A recent article describes free school clinics to be rare. Stephen Woolworth, "A Radical Proposition: The Brief but Exceptional History of the Seattle School Clinic, 1914-1921," *Journal of the History of Medicine and Allied Sciences*(published online December 14, 2011). http://jhmas.oxfordjournals.org/content/early/2011/12/14/jhmas.jrr059.full.pdf+html

[310] Gulick and Ayres, (1917 ed.), 86.

[311] Ibid., 86.

[312] Terman, "School Clinics for Free Medical and Dental Treatment," 278.

emphasized this point. People did not need "merely the rigid observance of general rules for hygienic living," but an individualized program provided by the biological engineer "which is based upon an expert knowledge of the individual's peculiarities, and of the environment under which he is living and must work."[313] Although the "discovery" of remediable defects had provided youth with medical care that was often desirable, the medicalization of deviance through adenoids, an extreme case of biological reductionism, veered away from the biological engineering model. Gulick soon became critical of the practice, and joined the Russell Sage Foundation where he took part in the Backward Child Investigation, which questioned the equation of physical defects with mental defects.

With America's participation in World War I, biological engineers would be able to see the implementation of many of their hopes. Ideas of popular physical training for the masses, medical inspection, sex education, and hygiene instruction all gained popularity as American men entered war and those on the home front read of how poorly the draftees fared in examinations. A new impetus for physical development provided urgency for these reforms, leading to new curricula, government programs and state legislation.

[313] Luther Gulick, "Biological Engineering: Treatment of an individual case of Neurasthenia, Given at the College of Physicians and Surgeons, New York City April 14, 1909." (Course on Preventive Medicine).Pg. 4 Box 14., Folder 10, Gulick Writings: Formerly Bound Volume 7(5 of 12), AAAPHERD collection, Springfield College Archives.

Chapter 8. Physical Education and Hygiene during World War I and into the 1920s

Shortly before he passed away in August 1918, Luther Gulick visited the American Expeditionary Forces on the Western Front. As Chairman of the International Committee on Physical Recreation of the War Work Council of the Y.M.C.A, Gulick had been involved in the recreation and physical welfare of the troops. According to an unnamed writer of a tribute to Gulick in *Survey*:

> Now he was seeing the fruition of his and other pioneers' efforts on a scale unimagined in the earlier years. Not only was a whole nation being re-awakened to an interest in physical manhood for its fighting youth, it was strengthening its work in this regard for growing boys and girls at home as well. A huge military machine was doing everything in its power to increase the vigor and clean physical living of millions of young men. To do this it was borrowing both the methods and the leaders that had been promoting these ideals among our civilian communities for decades.[1]

Through the preparedness campaign, consequent declaration of war and the physical examination of draftees, Americans had regained a sense of urgency for their physical welfare. For biological engineers, the institutionalization of new laws and health programs during and after wartime was a bittersweet victory, for they had been calling for the public to take health seriously for decades. Nevertheless, with the war, Gulick, Sargent and other physical educators and hygienists found the opportunity to push for the greater extension of compulsory physical education and school medical inspection laws.

The creation of the Commission on Training Camp Activities for troops was an achievement for Progressive reformers and incorporated some of the physical education and hygiene agenda. In conjunction with the YMCA, the CTCA promoted recreation and sex education for the troops. "Mass athletics" in the army was created using Sargent's basic idea of

[1] "Luther Halsey Gulick, 1865-1918," *The Survey* 40(August 24, 1918):579.

trying to improve the health of the most people possible, rather than cater to athletic elites. Sports and recreation served several uses during the wartime, and were known to help with the mental shock of modern war. Moreover, the wartime crisis allowed for the expansion of the controversial social hygiene agenda, which had existed on a small-scale during the prior decade. Gulick became involved in social hygiene through the YMCA in efforts to imbue morality among the American recruits, who had better access to venereal disease treatments and condoms.

While new physical educators emerged in the 1920s, with the death or retirement of the first generation, many of the same themes remained. They would continue to explore the mind/body connection and search for the "unknown equation" that made people perform physically, integrating medical and ability tests in their experiments on human efficiency. Furthermore, within colleges, the field of "health supervision" emerged, incorporating all of the most ambitious goals of early physical educators. Physical education came to be aligned more with sports, which became increasingly popular, and fewer directors carried medical degrees.

Examinations of American Men

The report of the draft examinations served as a rallying cry for greater physical education efforts in the United States. Physical educators and school hygienists reiterated many of their decades-old reasons why physical education was imperative; however, the war pressed the necessity upon people in a more urgent way.[2] Newspapers, educators and general observers

[2] "Draft Rejections Show Malnutrition in Childhood," *Journal of the Medical Society of New Jersey* 15 no. 4 (April, 1918):144; "Tilson Brings up Physical Training Before Congress," *The Hartford Courant*, 8 April, 1918, pg. 12; Woods Hutchinson, "Weighed in the Balance of the War: How Our National Physique Stood the Acid Tests in the Draft," *Red Cross Magazine* 14 no.4(April, 1919):38-42; Charles W. Savage, "Lessons from the War for Physical Education in Colleges," APER 24 no. 4(April,1919):188-189;Lucy Wood Collier, "The Work of the Child Health Organization," *The American Child* 1 no.2(August, 1919):141-144;"Physical Defects as Revealed by the War," *Journal of the American Medical Association* 74 no.6(February 7, 1920):396; Elmer Berry, "Problems in the Recruiting Teachers of Physical Education," APER 25 no. 6 (June,1920):233.

remarked on the "revelation" and "shock" of the "alarming" draft statistics.[3] To promote universal physical education, Dudley Sargent took the opportunity to write a letter to the editor of the *New York Times* lamenting the "stupendous waste and wreckage of American manhood" illustrated by the draft examinations.[4]

From the total of 2,510,706 men from twenty-one to thirty years old examined in the first draft call, 730,756 were rejected based on physical grounds, or 29.1%.[5] From December 1917 to October 1918, 3,208,446 men were examined and 29.5% rejected. Among the main reasons for rejection were: problems with heart and blood vessels (13.07%); bones and joints (12.35%); poor vision (10.65%); tuberculous respiratory illness (8.67%); developmental defects including height and weight (8.3%); hernia (6.04%); mental deficiency (5.24%); nervous and mental disorders (5.07%); flat foot (4.87%); poor hearing (4.38%); teeth (3.16%); and venereal disease (1.33%), among smaller quantities of other medical conditions.[6]

Many of these defects were considered "remediable" and could have been corrected at an early age if they were caught by physicians or school medical inspectors. By highlighting these remediable problems, commentators pointed to the negligence of the United States health agencies and government, and promoted more widespread programs in American cities and towns.[7] In some cases, observers emphasized that the young recruits had not been subject to

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[3] Randall D. Warden, "Physical Fitness of School Children," *Journal of Education* 88 no.5(August 1, 1918):133; Charles W. Eliot," Defects in American Education Revealed by the War," *School and Society* 9 no. 210(January 4, 1919):1-10; J.R. Angell, "The Reconstruction Program for Physical Education in the Colleges," APER 24 no.5(May, 1919):262; Major- General Wood, "Address," APER 24 no.6 (June, 1919):327; Rev. Henry D. Phillips, "The Relation of Athletics to the College Man and the Nation," APER 25 no. 3(March, 1920):97.

[4] Dudley A. Sargent, "Men Fit For Soldiers: Draft's Showing Up of Physical Defects of Young Americans and the Remedy," *New York Times,* 9 March 1918, pg. 14.

[5] *Report of the Provost Marshal General to the Secretary of War on the First Draft Under the Selective-Service Act, 1917* (Washington: Government Printing Office, 1918):24.

[6] *Second Report of the Provost Marshal General to the Secretary of War on the Operations of the Selective Service System to December 20, 1918*(Washington: Government Printing Office, 1919):166.

[7] M.E. Champion, "Division of Hygiene," *Fourth Annual Report of the State Department of Health of Massachusetts* (Boston: Wright & Potter Printing Co., State Printers, 1919):28; Clark W. Hetherington, *Report of the State Supervisor of Physical Education* (Sacramento: California State Printing Office, 1919).

school medical inspection because they attended prior to its widespread establishment.[8] It was a shame that these defects were not found or treated earlier, as one doctor noted in 1919: "[E]xperience has shown that only a small fraction of the remediable defects are corrected, with the result that a large number grow to manhood with their physical efficiency impaired."[9]

In most cases, men that were rejected did not receive medical care. The Provost Marshall General E.H. Crowder claimed that "[A]lthough arrangements were made by hospital authorities and medical men in many States for having such defects corrected without expense to the registrant, comparatively few offered themselves."[10] Yet, the newspapers reported that plans to have rejected men cared for in army hospitals fell through because of insufficient funding.[11] According to a Massachusetts doctor, the men should be happy merely to have received free inspections. He wrote that "[T]hese rejected men in many instances may well bless the doctors who examined them, as well as the day they stripped for examination. Countless unknown and remediable defects were pointed out, and gratuitous valuable advice was freely given as the men passed by."[12]

Although less than 2% of the rejected men were sent home for venereal disease, there was a great concern for the sexual morality of troops in wartime.[13] This apprehension was informed by the historical connection of wartime and prostitution, the current situation in

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[8] "Are We Physically Below Par?" *Weekly Bulletin of the Department of Health, City of New York* 5 no.32(August 11, 1917):250; Elizabeth Fox, "Rural Public Health Nursing," *Rural Health, Proceedings of the Second National Country Life Conference* (Chicago,1919):67-77; "Working—and Fighting—Better Through Play," *Recreation* 12 no.4 (July, 1918):199-202; A.E. Winship, "Educational Preparedness," *Journal of Education* 88 no.23(December 19, 1918):619.

[9] A.D. Browne, "Physical Education in Light of the Present National Situation," APER 24 no. 2(February, 1919):70.

[10] *Second Report of the Provost Marshal General to the Secretary of War on the Operations of the Selective Service System to December 20, 1918* (Washington: Government Printing Office, 1919):153.

[11] "Draft Will Save Lives," *New York Times,* 9 March 1919, pg. 5.

[12] Samuel Crowell, "The Reflections of a Physician Who Stayed at Home," *Boston Medical and Surgical Journal* 180 no. 23(June 5, 1919):633.

[13] *Second Report of the Provost Marshal General to the Secretary of War on the Operations of the Selective Service System to December 20, 1918* (Washington: Government Printing Office, 1919): 166.

European warring nations, as well as the Army's activity at the Mexican border in 1916.[14] William Zinsser, the Chairman of the Sub-Committee for Civilian Co-operation in Combating Venereal Diseases of the Council of National Defense, spoke before the Council in October 1917 relaying how the European fighting armies were suffering from "the terrors of this scourge."[15] He stated "[L]et us be frank before we are compelled to be. Let us be frank while frankness will prevent the evils by which our allies are scourged."[16] Upon further investigation it was discovered that at five large camps, 83% of the men with venereal disease contracted it before coming to the camp, and the remainder contracted it after arriving at the camp.[17] Thus, in combating venereal disease, the Army was dealing with a public health issue affecting American communities, not merely a problem of camp life.

In addition to medical examinations, intelligence tests were conducted on two million recruits. The Army's alpha and beta tests were given by the Committee on the Psychological Examination of Recruits, formed from the American Psychological Association shortly after the declaration of war.[18] Out of the 1,059,767 soldiers given the tests between May 1 and September 1, 1918, 16,266 were judged to have the "mental age" of 8 years old or less, and 7,359 had seven years or below. Lewis Terman affirmed that without the tests, "their mental deficiency would long escape detection. Try to estimate the total menace this many feeble-minded soldiers would constitute."[19] The results of the examinations were supposed to be used by a Committee on Classification of Personnel to place soldiers in various positions. While contemporary psychologists called these examinations "notable mental engineering achievements of the war," Stephen Jay Gould has questioned their actual utilization and cultural

[14] William J. Black, "Keeping Clean the Army of Democracy," *New York Tribune,* 3 June 1917, pg. D3.
[15] Harris & Ewing, "Barring Sex Disease from the American Army," *New York Times,* 28 October 1917, pg.SM6.
[16] Ibid., SM6.
[17] Gertrude Seymour, "Social Hygiene and War," *New York Tribune,* 5 January 1919, pg. B12.
[18] E.L. Thorndike, "Psychological and Educational Tests," APER 25 no. 6 (June, 1920): 228-233.
[19] L.M. Terman, "The Use of Intelligence Tests in the Army," *The Psychological Bulletin* 15 no. 6(June, 1918):187.

bias.[20] Nevertheless, the alpha, beta and other IQ tests would thrive after the war in many educational institutions.[21]

For the most part, the draft findings provided professionals in physical education, school hygiene, sex education and mental hygiene with a significant, relevant way to seek to expand their field. Many considered the wartime situation to be a "great laboratory experiment" for transforming unhealthy men into efficient soldiers and citizens.[22] For the most part, the physical training and hygiene community came to see wartime programs to be quite successful and pushed for their implementation for the general population during peacetime.

The Transformation of Soldiers and Mass Athletics

Those involved in physical education agreed that Americans were physically unprepared for war and that other nations fared better. The needs of the Army led military authorities to create activities that would include all recruited men—"mass athletics" or "athletics for everybody." With these activities, as well as "moral living" American men were transformed into strong, healthy soldiers. The experiment in training millions of men was declared a success, and gave physical educators evidence to draw upon in their efforts to promote physical education for all American youth.

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[20] Raymond Dodge, "Mental Engineering During the War," *The American Review of Reviews* 59 no. 5 (May, 1919): 506; Stephen Jay Gould, *The Mismeasure of Man* (New York: Norton, 1981), 210-216.

[21]Robert M. Yerkes., ed, "Psychological Examining in the United States Army," *Memoirs of the National Academy of Sciences* 15 (Washington: Government Printing Office, 1921); James Reed, "Robert M. Yerkes and the Mental Testing Movement," in *Psychological Testing and American Society, 1890-1930,* ed. Michael M. Sokal (New Brunswick: Rutgers University Press, 1987):75-94. On mental testing after the war, see Guy Montrose Whipple, ed., *Intelligence Tests and Their Use* (Bloomington, Illinois: Public School Publishing Company, 1922). For a discussion of the intelligence tests and wider social implications see Daniel J. Kevles, "Testing the Army's Intelligence: Psychologists and the Military in World War I," *Journal of American History* 55 no. 3(December, 1968): 565-581; Joel Spring, "Psychologists and the War: The Meaning of Intelligence in the Alpha and Beta Tests," *History of Education Quarterly* 12 no. 1 (Spring, 1972):3-15; John Carson, "Army Alpha, Army Brass and the Search for Army Intelligence," *Isis* 84 no. 2(June, 1993):278-309.

[22] J.E. Raycroft, "Suggestions for Colleges from the Army Experience in Physical Training," APER 19 no. 2(May, 1919):271.

During the war, the Army and the Commission on Training Camp Activities implemented physical education, athletics and recreation for the purposes of training the troops and providing what was considered to be wholesome leisure activity to replace the vice and carousing of army life. Physical educators were active in these programs. Among those serving that were affiliated with the AAAPE were Walter Camp, James McCurdy, James Naismith, George Meylan and R. Tait McKenzie who served with the American, English and French armies.[23] While Camp was a renowned football coach, and McCurdy was Physical Director at the International YMCA College, Naismith, Meylan and McKenzie were the directors of Physical Education at the University of Kansas, Columbia University and the University of Pennsylvania respectively.

The YMCA sought great involvement in the provision of physical training and recreation for recruits. As early as May 1917, George Fisher urged for his fellow physical directors throughout the nation to turn over their facilities to the Army and Navy and to plan community physical training activities. Physical directors were also to assist in medical and physical examinations of recruits, giving each man "as much attention as possible," providing prescription charts that showed "parts of the body that need strengthening" which they helped them to interpret.[24]

Physical educators were quick to point out that for decades they had been calling for widespread physical training due to poor health in the American population. While the general American population suffered "widespread delusions" that Americans were very healthy one health officer claimed, "[T]hose especially interested knew from statistics compiled from health

[23] Deobold B. Van Dalen and Bruce Lanyon Bennett, *A World History of Physical Education: Cultural Philosophical, Comparative* (Englewood Cliffs, N.J.: Prentice Hall, 1971[1953]), 439.
[24] George J. Fisher, "What Will the Physical Directors Contribute to the War?" *Physical Training* 14 no.7 (May, 1917):294.

surveys of our school children that there were high percentages of children who were handicapped by lack of proper nutrition and care and by remediable physical defects."[25] He emphasized that "as a people we were complacent and undisturbed" despite the statistics from school hygiene health studies.[26]

Bold denouncements of prewar physical training programs abounded in the literature of the field. The 1918 President of the AAAPE, William Burdick, admitted that the draft findings indicated, "we, the promoters of physical efficiency, have not yet achieved our goal."[27] J.R. Angell, the Dean of the University of Chicago commented in late 1918 that "if the colleges had really been on the job in the ten years preceding the war, these percentages of rejections would have been greatly reduced."[28] Thomas Storey declared in 1920 that, "[W]e of the allied world should hang our heads in shame because of the facts of prewar physical education that have been made public through this great war peril."[29] Storey believed that a majority of the instructors were "immature, short-lived in the work of teaching, inadequately educated, and possessed of deplorably meager professional equipment."[30] Similar to Storey, many observed in the postwar years that physical educators had been inadequate, uncooperative, "too lax in discipline" or "too visionary" in the prewar years.[31]

While lamenting the state of Americans before the war, participation in the war and the physical training in the army were seen as outright successes, proving the merit of both

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[25] John Sundwall, "Health Education and Activities in Colleges and Universities" APER 26 no. 4(April, 1921):164-165.
[26] Ibid., 165.
[27] William Burdick, "Presidential Address," APER 23 no. 6 (June, 1918):333.
[28] J.R. Angell, "The Reconstruction Program for Physical Education in the Colleges," APER 24 no. 5(May, 1919):262.
[29] Thomas A. Storey, "War-Time Revelations in Physical Education," APER 25 no. 2 (February, 1920):47.
[30] Ibid., 47.
[31] L.N. Hines, "Paper: Theme—What are the Requisite Personal and Professional Qualifications of the Physical Training Teachers? From the Standpoint of the State Commissioner of Education," APER 25 no. 2(February, 1920):55-56; Floyd A. Rowe, "Paper: Theme—What are the Requisite Personal and Professional Qualifications of the Physical Training Teachers? From the Standpoint of the State Director of Physical Education, APER 25 no. 2(February, 1920):57.

American men and adequate training. Even though the accepted recruits were described as "heavy of foot, slow in coordination, and clumsy in gait," and "pale, weak, stooped and awkward," it only took a few months of training to develop their skills and agility.[32] According to Walter Camp, the "soft, flabby, youth…is now being made over into an alert, bright, cheerful youngster who is not afraid to move his muscles for fear that they will break."[33] Such training and development, observed hygiene specialist Willard Small, "amply demonstrates that we are not a nation of degenerates and mollycoddles."[34] Physical educator Charles Savage agreed that the army regimen had developed "MEN—vigorous, alert, self-confident, clear-eyed, ruddy-skinned, upstanding men; strong, virile men."[35] They were produced through "plain living, regular habits…life and exercise in the open."[36] When they returned home, "everybody remarks on the change in color, bearing, and evident vigor they exhibit."[37] W.P. Bowen, Professor of Physical Education at the Michigan State Normal School, noted that "[I]n this way it is gradually soaking into the brain of the average American citizen that when physical training is given enough time and is associated with hygienic ways of living it can deliver the goods in the form of husky and respectable individuals who represent substantial value to the community and to the state."[38]

Despite the casualties of war, General Wood and various physical educators idealistically considered how physical training was a benefit to the soldiers. General Wood affirmed that an "immense amount of work… was done in curing minor physical defects. In fact, we sent every

[32] General Wood, "Address," APER 24 no. 6 (June, 1919):328; W.P. Bowen, "The Influence of the War Upon Physical Education," APER 24 no. 2(February, 1919): 91; Willard S. Small, "Universal Physical Education: Why, What, How," APER 24 no. 6 (June, 1919): 342.
[33] Walter Camp, "Uncle Sam, Builder of Men," *National Service* 3 no.2 (April, 1918):97.
[34] Small, "Universal Physical Education," 342.
[35] Charles W. Savage, "Lessons from the War For Physical Education in College," APER 24 no. 4(April, 1919):188.
[36] Ibid., 188. Also see Mack Whelan, "Will the War Kill Athletics?" *Outing* 68 no. 3(June, 1916):287-288.
[37] Bowen, "Influence of the War Upon Physical Education," 91.
[38] Ibid., 91.

man back, without exception, every man who lived, infinitely better off from the economic standpoint, from the moral standpoint, and from the standpoint of good citizenship."[39] George Fisher argued that "[T]o-day there are between three and four million men in the United States in excellent condition—in better condition than any similar number of men have ever been at one time in the United States. *This is a great national asset.*"[40] Sargent also highlighted the educational aspects of the wartime experience in the camps. He noted that "[A]side from the killing, the maiming, the disabling of so many brave men, the war was a blessing to thousands inasmuch as it tried them out, showed them their shortcomings, and taught them how to live."[41] Thus in "teaching men how to live" the war supported the biological engineering endeavor.

Military authorities approached training of the army in a characteristically utilitarian manner, seeking to train the most men in the most efficient way. They supported inclusive games and sports known as "athletics for everybody" and "mass athletics." Their programs were in accord with programs that Sargent supported throughout his career, in hopes of improving the health of the most students possible, rather than providing only for the athletic elites. Luther Gulick was also prominent in developing "athletics for all" in the primary and secondary school systems in the early 1900s, which gained favor from various physical educators in the 1910s.[42]

The types of mass athletics varied from new games to traditional sports played on several fields or with more people than usual. Raymond Fosdick, head of the CTCA, and writer Edward

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[39] Wood, "Address," 329.
[40] George J. Fisher, "Points of Emphasis in a Post-War Program in Physical Training," APER 24 no.3 (March, 1919):126.
[41] Dudley A. Sargent, "Taking Account of Stock," APER 27 no. 2(February, 1922):49.
[42] Luther H. Gulick, "Playground Activities Under the Direction of the Department of Education, New York City," *Proceedings of the Second Annual Playground Congress* (1908): 398-429; Henry S. Curtis ," Physical Training in the Normal School," *The Pedagogical Seminary* 20 no. 3 (September, 1913):394-397; W. P Bowen, "Athletics for Everybody—A Long Step Forward," APER 21 no.5(May, 1916): 274-279; Henry F. Kallenberg, "Mass Athletics—Everybody in the Game" APER 21 no.5(May, 1916): 297-300; Charles B. Lewis, "Athletics For All," APER 22 no.5(May, 1917): 278-283; "Athletics May be Compulsory at Cambridge," *New York Tribune,*10 February 1918, pg. A4.

F. Allen reported upon hundreds of soldiers playing sports simultaneously on numerous athletic fields. One camp had sixteen baseball diamonds, while another had twenty-six football fields.[43] There were soccer games using ten balls, and cross-country races with two thousand participants.[44] Shortly after the war, Joseph Raycroft created a manual of games and sports to be used by the army. Among these were nine different "circle games," ten variations of tag, ten various ball games such as dodge ball, and eleven other miscellaneous contests including races. For mass soccer, he suggested that each team had twenty-five men or more, while volleyball could manage twenty or more men per side.[45] He also described the game of "push ball" which could entertain a thousand men if necessary on each team.[46] According to W.P Bowen, these wartime games "exemplify mass athletics—athletics for everybody—to the highest degree."[47]

The Secretary of War, Newton D. Baker, called for widespread physical training and sports in the colleges in August 1917. He was well-aware of the current situation in which "big, strong men are taken and much attention lavished upon them so that they are developed into specialized athletes, while the weak and anaemic are left to play the part of observers."[48] Not knowing how long the fighting would persist, he urged members of the National Collegiate Athletic Association to provide inclusive physical training in order to develop "proper material for filling the armies of the country in the present emergency."[49]

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[43] Raymond B. Fosdick and Edward F. Allen, "Athletics for the Army," *The Century* 96 no. 3(July, 1918):370; Edward F. Allen, "Keeping Our Men Fit Physically and Morally," *Current History* 9 no. 1(October, 1918):127-130.
[44] Ibid., 371; Herman J. Norton, "Mass Athletics at Camp Dix, New Jersey," *Mind and Body* 25 no. 268(April, 1918): 66-75.
[45] Joseph E. Raycroft, *Mass Physical Training for Use in the Army and the Reserve Officers' Training Corps* (Washington: United States Infantry Association, 1920), 163-165.
[46] Ibid., 166.
[47] W.P. Bowen, "Influence of the War," 91.
[48] "The Problem of Athletics in Colleges and Schools Under Present War Conditions[summary of Baker address]," APER 22 no. 7(October, 1917):447-448.
[49] Ibid., 448.

The biological engineers had generally rejected the practice of military training in schools. They sought training for improvement of the mind and body of individuals and did not support competition which could cause bodily harm. While the exigencies of war expanded programs for training and hygiene, they wished there was a different motive behind the expansion. In 1916, Dudley Sargent spoke before the members of the Pennsylvania State Educational Association and delivered such a message: "There are those among us who believe that the constructive pursuits of peace are worthy of one's painstaking and conscientious efforts to perfect himself as the destructive efforts of war. I wish that all of our American youth and public educators were united in this opinion."[50]

The Meanings of Physical Education and Sport during the War

Athletics and physical activities took on interesting and sometimes contradictory meanings in the war period. Writers on the topic envisioned sports and play as a way to hone combat skills as well as to encourage peace. In their promotion of athletics in the Army, Raymond Fosdick and Edward Allen emphasized that sports activities were used unify the diverse American troops, as well as provide recreation for men that had never had leisure time. The YMCA and physical educators also publicized how sports provided mental relaxation for troops who were fatigued, depressed and sometimes shell-shocked, reflecting the concern for mental health and the unity of the mind and body in physical education. Furthermore, the warring nations' combat was described in terms of their teamwork and sportsmanship, applying common peacetime ideas to military practice.

[50] Dudley A. Sargent, "True Preparedness," *Pennsylvania State Educational Association, December 1916* (Lancaster, PA.: Pennsylvania School Journal, 1917):43.

Military authorities and physical educators spoke of the interconnections between skills used in athletics and in war. While the bulk of men were new to military service, their athletic skills would be advantageous in war. The "short gait" and "balance" required in soccer would "serve him in good stead in traversing the churned and furrowed surface of no man's land."[51] Boxing was clearly related to hand-to-hand combat and bayonet fighting.[52] Excellent pitching arms would be handy in throwing bombs, while first basemen would be truly resourceful in battle.[53] "In the manner of grenade and bomb throwing, the Americans become proficient in but a few days' drill," claimed General Pershing. He believed this success derived from experience in, "football and baseball, which makes strategists of them all."[54] Others observed that this "spirit of the American athlete" was able to transform, "an undisciplined, undeveloped mob in an incredibly short time into a fighting force" which exhibited "teamwork, self-sacrifice, grit and fight."[55] These references to the abilities of the "American athlete" likely promoted patriotism in the newly-drafted army. In making comparisons between war and athletics, these commentators, mainly military personnel, also helped to normalize the war experience, rendering it less foreign to the recruits and their families at home.

In a piece that was largely promotional literature for the CTCA, Raymond Fosdick and Edward Allen emphasized the importance of play and the play spirit in wartime. It is somewhat surprising to see images of men "heartily enjoy[ing]" childish games of duck, duck goose, tag, leap-frog "and a dozen others their younger brothers have forgotten."[56] They argued that muscular strength was futile, "unless there are behind it driving force and control; apathy in an

[51] Fosdick and Allen, "Athletics for the Army," 371.
[52] Ibid., 371.
[53] Ibid., 370.
[54] Pershing quoted in Wood, "Address," 333.
[55] Elmer Berry, "Problems in the Recruiting of Teachers of Physical Education," APER 25 no. 6 (June, 1920):233; Savage, "Lessons from the War for Physical Education in Colleges," APER 24 no. 4 (April, 1919): 190.
[56] Fosdick and Allen, "Athletics for the Army," 373- 374.

army or a navy is fatal. But the fighters who play and who laugh as they play are irresistible."[57] G. Stanley Hall's recapitulation theory that linked play to war instincts, likely influenced the thinking of these army officials. The spirit of play, harmless and enjoyable, was transformed into a spirit that helped soldiers defeat the enemy in this brutal war.

Fosdick and Allen also publicized that sports helped to unify the army and acclimate the men to tough physicality. Men from different walks of life—bookkeepers, street-car drivers, mountaineers and farmers— were playing with and against one another on the same athletic field. Soldiers who had never played any sport were doing so for the first time. "Men whose boyhood ended all too soon" had opportunities to play games of children and youth.[58] Fosdick and Allen wrote that, "[N]arrow-chested clerks are making three-base hits on the same base-ball teams with college athletes, and lean-visaged philosophers are learning how to use their fists."[59] They were all "learning to get bumped, and not to mind it."[60] In these pronouncements, Fosdick and Allen aimed to portray the good treatment that the Army provided. It seemed that at war, those from modest backgrounds had the opportunities of college men.

In sizing up the enemy, physical educators employed metaphors of sportsmanship and teamwork. Prior to America's entry into the war, Luther Gulick praised Germany's efficiency and sense of team work. In an unpublished manuscript titled, "Benefits of This War," written in December 1915, Gulick asserted that Germany was "a nation doing team work on an unprecedented scale…It is true that the Germans 'do what they are told.' So do the members of any good team."[61] He continued:

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[57] Ibid., 374; George J. Fisher, "Points of Emphasis in a Post-War Program,"128-129.
[58] Ibid., 374.
[59]Ibid., 368.
[60] Ibid., 368.
[61] Luther H. Gulick "Benefits of this War," Unpublished manuscript, p. 6, Box 9 Folder 10, Luther Gulick Papers, Alliance for Health, Physical Education, Recreation and Dance, Springfield College.

> …unparalleled team work that creates, supports and directs the German armies has secured results that can be overcome only by corresponding team work of greater forces… So when I say that the only way in which the Allies can hope to win is by developing an efficiency equal to that of the Germans and larger in extent, I mean not merely an efficiency of the fighting force, as such, but also of all that upon which the fighting power rests. That is, they must become efficient as a people and as peoples, and this efficiency must extend to all the departments of life–economic, social, religious, as well as physical.[62]

Gulick continued to promote this idea of "team work" in his posthumously published book on the war, *Morals and Morale,* in which he omitted this praise of Germany, but wrote the war would nevertheless be won "by the greatest teamwork most intelligently applied."[63] Gulick's concern was whether the American democracy, "government for the people by the people," would be able to "secure more powerful human cooperation and team work than can government for the few by the few."[64]

World War I has been described as a war that destroyed young men's romanticized visions of noble, chivalrous battles for king and country.[65] Ideas of a nation's exhibition of sportsmanlike conduct are a variant on this theme. During the war, Gymnasium Director Frank L. Kleeberger held that the Germans lacked sportsmanship. Germany's "brutality and unsportsmanlike conduct" originated from "a poorly balanced scheme of military and physical training, resulting as it does in overemphasis of formal mass activity to the neglect of athletic games and sports and thus causing a deadening of the individual initiative and courage."[66] He granted them praise for their gymnastics, but held that drillmasters had, "devitalized the original ideas and methods of Father Jahn."[67] George Fisher used similar ideas to describe the

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[62] Ibid., 7,9.
[63] Gulick, *Morals and Morale* (New York: Association Press, 1919), 92.
[64] Ibid., 92.
[65] Paul Fussel, *The Great War and Modern Memory* (New York: Oxford University Press, 1975).
[66] Frank L. Kleeberger, "American Athletics Vs. German Militarism," APER 24 no. 2 (February, 1919): 83.
[67] Ibid., 83.

combatants, claiming that the British "could not stoop to the methods used by the enemy. Their training in athletics had developed characteristics of honor, and fair play, which made it impossible for the British to be unfair."[68]

Another use for athletics and recreation in the war, seemingly discovered independently by various officers, was alleviating the suffering of mental hardship and the newly discovered disease of shell shock.[69] In speaking about the rampant ailment, Fosdick affirmed that "[O]ne of the important factors in the prevention of the development of this condition is the opportunity for, and the habitual participation in, athletic activities."[70] Gulick and others referenced the story of Major Coulan, whose British troops had spent three days and nights at battle in the trenches "under the most intense emotional excitement possible."[71] After they had slept and been fed, "they would stand or sit motionless and through their minds would go in ever recurring cycles and distorted memories of their experiences, of their 'bunkies' who had been laid out there, of those who were lost, whom they did not know where they were, and these more or less incoherent feelings would tend to become circular and to go on, and on, and on. Men at such times are in peril." For Gulick, this was just the beginning of a process, which could leave the men, "never… fully men again."[72] After exhausting all his options in trying to help the soldiers, Major Coulan finally tossed them a football and was surprised that in ten minutes, "the whole bunch were chasing the ball, wildly, and they were saved thereby."[73] Such uses of recreation "have their place in preventing and curing the psychoneurosis which destroys the value of so

[68]George J. Fisher, "The New Physical Training," APER 25 no. 4 (April, 1920):218.
[69] Fisher, "Points of Emphasis in a Post-War Program on Physical Training," APER 24 no. 3 (March, 1919):131.
[70] Fosdick and Allen, "Athletics for the Army," 370.
[71] Luther H. Gulick, "Physical Fitness in the Fighting Armies," APER 23 no. 6 (June, 1918):352; James H. McCurdy, "Physical Efficiency as a National Asset," APER *25* no. 3(March, 1920):101-102.
[72] Gulick, "Physical Fitness in the Fighting Armies," 352.
[73] Ibid., 352.

many men."[74] Similarly, Lieutenant Herbert of the French navy found that after combat, "nervous and mental strain is worse than the physical for the men and sound sleep suddenly is impossible." Marching the soldiers to the country, having them run cross-country, "up hill, down dale, climbing trees, crawling through underbrush" would help them relax and get "refreshing slumber."[75] Many believed that play was "one of the chief agents in the cure of the wounded fighting men" which "awakes thought and intellect in minds dulled by shell shock."[76]

Militarization, preparedness, and finally, international war led many people to consider how to physiologically or psychologically promote peace. If an instinct for violence and domination was a part of human nature, could this war instinct be repressed or channeled? William James' popular 1910 essay, "The Moral Equivalent of War," spurred much thought on the topic. Seeking to harness warlike impulses, James looked to manual labor as a productive and constructive channel.[77] G. Stanley Hall hoped to sublimate the war instinct "which makes the nerves tingle and brings calentures to the blood."[78] Forms of recreation brought a "reversion" to the intense feelings of life and death battles; they were a mostly harmless way to sublimate this instinct. Hall's psychological understanding of the war impulse was supplemented by new studies in endocrinology when Harvard physiologist Walter Bradford Cannon considered the war impulse in terms of the adrenal response. Eschewing James' manual labor approach, he called for a "physical substitute" rather than a "moral substitute" to war, in which "the elemental

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[74] Ibid., 353.
[75] "Athletics after French Duty," *The Playground* 12 no. 3 (July, 1918):140.
[76] "Play's the Thing," *Red Cross Bulletin* 3 no. 18(April 28, 1919):7. On military recreation and mental health also see: J.W. Harting, "Music Takes First Place in Reconstruction Work," *The Modern Hospital* 12 no.6 (June, 1919):404-406; "Play for Nations at War," *Association Men* (June, 1918):785; "After Ten Days in the Trenches," *Association Men* (June, 1918):763.
[77] David I. Macleod, "Socializing American Youth to Be Citizen-Soldiers," in *Anticipating Total War: The German and American Experiences, 1871-1914,* ed., Manfred F. Boemeke et al. (Washington D.C..: German Historical Institute, 1999), 137-166; Robert Richardson, ed., *The Heart of William James* (Cambridge, Mass: Belknap Press of Harvard University, 2010).
[78] G. Stanley Hall, "Recreation and Reversion," *The Pedagogical Seminary* 22 no.4 (December, 1914):516.

factors are retained" and "all the resources of the body are summoned in the eager struggle for victory."[79] In physical sports, "the same physiological alterations occur that occur in anticipation of mortal combat, the belligerent emotions and instincts, so far as their bodily manifestations are concerned, are thereby given complete satisfaction."[80] Even modern warfare did not supply this outlet since it was too mechanized. International sports could serve as an outlet for warlike tendencies and thus substitute for the massive destruction of modern world war.[81]

Luther Gulick, Social Hygiene and Wartime Morale

The Commission on Training Camp Activities and military employed both repressive and constructive methods to guard against the spread of venereal disease in the army. These methods were based on the general program of social hygiene which aimed to police prostitution, provide sex education and promote wholesome recreation as a substitute for vice.[82] Luther Gulick realized the importance of this strategy, commenting that the, "[M]ere repression of vice or mere promotion of virtue are hopeless."[83]

The CTCA worked with existing reform groups and many of its people had careers in physical education, social reform and hygiene. The wartime organization included Joseph E. Raycroft, professor of hygiene and director of physical education at Princeton, Joseph Lee, president of the Playground Association of American, John R. Mott of the International

[79]Walter B. Cannon, *Bodily Changes in Pain, Hunger, Fear and Rage* (New York: D. Appleton and Company, 1915), 296-297.
[80] Ibid., 297.
[81]Ibid., 297-301. See also, Paul C. Phillips, "Relation of Athletic Sports to International Peace," APER 20 no.3 (March, 1915):143-147; Wesley Raymond Wells, "The Sublimation of Non-Sexual Instincts," *Pedagogical Seminary* 28 no.1 (March, 1921):73-77.
[82] On social hygiene see David J. Pivar, *Purity and Hygiene: Women, Prostitution and the "American Plan," 1900-1930* (Westport, CT: Greenwood Press, 2002). For a study of the Commission on Training Camp Activities see Nancy K. Bristow, *Making Men Moral: Social Engineering during the Great War* (New York: New York University Press, 1996).
[83] Gulick, *Morals and Morale,* 25.

Committee of the YMCA, and Lee F. Hammer of the Russell Sage Foundation. The organization joined forces with long-existent American reform and recreation groups including the Young Men's Christian Association, the Knights of Columbus and the Jewish Board of Welfare Work.[84] A committee was created within the YMCA called the War Work Council which included Gulick as chairman of the Committee on Physical Recreation, George J. Fisher as the Director of the Physical Work Bureau, and M.J. Exner as a specialist in sex education.[85]

As Nancy Bristow has illustrated, the CTCA was based on the Progressive traditions of efficiency, morality and social justice.[86] The main goals of the CTCA were to prevent the spread of venereal disease, through education and recreation campaigns as well as increased surveillance of camp zones conducted by the Law Enforcement Division of the CTCA. There were movies, libraries, opportunities for sports and socialization with approved women's groups. They emphasized the importance of family values, encouraging local families to take in the soldiers for Sunday dinners.[87]

President Wilson and government officials focused on the importance of an army free of venereal disease.[88] Fosdick claimed that among the warring armies a third of the men were affected with a venereal disease. He affirmed that, "[T]his war is going to be won on the basis of

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[84] Ibid., 164.

[85] William Howard Taft, *Service with Fighting Men: an Account of the American Young Men's Christian Association in the World War Volume* 1 (New York: Association Press, 1922), 335; "Luther Halsey Gulick, 1865-1918," *The Survey* 40 (Aug, 24, 1918):579.

[86] Bristow, *Making Men Moral,* 8-17. For interpretations of the Progressive Era see, Richard Hofstadter, *The Age of Reform; from Bryan to F.D.R.* (New York: Random House, 1955); Samuel P. Hays, *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920* (Cambridge: Harvard University Press, 1959); Robert H. Wiebe, *The Search for Order, 1877-1920* (New York: Hill and Wang, 1967); Peter G. Filene, "An Obituary for the Progressive Movement," *American Quarterly* 22 (1970): 20-34; Elizabeth Lasch-Quinn, *Black Neighbors: Race and the Limits of Reform in the American Settlement House Movement, 1890-1945* (Chapel Hill: University of North Carolina Press, 1993).Daniel Rodgers, *Atlantic Crossings: Social Politics in a Progressive Age* (Cambridge, Massachusetts: Belknap Press of Harvard University Press, 1998).

[87]Raymond B. Fosdick, "The Commission on Training Camp Activities," *Proceedings of the Academy of Political Science* 7 no. 4(February, 1918):169.

[88]The Army Education Commission had a Social Hygiene Division. For a collection of their posters, see University of Minnesota's Social Welfare History Archives, online collection, American Social Hygiene Posters, ca. 1910-1970, http://special.lib.umn.edu/swha/IMAGES/home.html.

man power, and we cannot afford to lose a single man from any preventable cause."[89] Using the language of reformers of the time, Fosdick emphasized that, "as a matter of efficiency, let alone morals, this work is justified."[90] President Wilson also supported these claims, stating in a well-circulated pamphlet, "[T]he federal government has pledged its word that as far as care and vigilance can accomplish the result, the men committed to its charge will be returned to the homes and communities that so generously gave them with no scars except those won in honorable conflict."[91]

In providing sex education and restriction of prostitution, the CTCA was drawing upon elements of vice reform, social hygiene and school hygiene. These movements had paved the way for developments that were deemed to be necessary because of wartime conditions. One army officer claimed, "[I]t is evident that the response we have had all over the country is due in large part to the work which has been done in past years by the American Social Hygiene Association and similar organizations. The educational efforts they have expended, sometimes in the face of the greatest discouragements and even ridicule, are now bearing invaluable fruits."[92] In a similar vein, M.J. Exner asserted that although the war led to "a new public attitude toward the social problems of sex," the foundation "for this rapid transition has been laid mainly during the last decade."[93] Looking back from 1920, Thomas Storey affirmed that

[89]Fosdick, "The Commission on Training Camp Activities," 170.
[90] Ibid., 170.
[91] "Building a Solid Foundation," *The Social Hygiene Bulletin* 5 no. 12 (December, 1918): 1. On concern for the health and morality of American troops, see also Janet F. Melvain, "The American Social Hygiene Association," *Social Service Review* 7 no.4 (May, 1918):9-10; Hilton Howell Raily, "Your Boy in Camp, An Answer to the Mothers at Home," *The Independent* 91(August 11, 1917): 219-221.
[92] Harris and Ewing, "Barring Sex Disease from the American Army," *New York Times,* 28 October 1917, pg. SM7.
[93]M.J. Exner, "The Influence of the War on the Development of Social Hygiene and Sex Education," *Physical Training* 16 no. 6 (April, 1919): 815.

"preventive hygiene of venereal diseases was one of the peace-time measures that we employed for war-time purposes in order that we might win that war."[94]

The problems of controlling the sex instinct had been part of various health reforms efforts for a century prior to the Great War.[95] In the antebellum period, much of the sex advice for young men related to controlling masturbation.[96] After the Civil War, school hygienists, physical educators and child study experts remained reluctant to lift the Victorian "conspiracy of silence" regarding sexuality.[97] However, discussions of sex fit within the range of physical education and hygiene. At Amherst, Edward Hitchcock was known to give "homely, intimate" hygiene talks as part of his physical director's duties.[98] Various colleges gave courses in hygiene and physiology in the later decades of the nineteenth century which included personal hygiene and the anatomy of the organs, most likely including sex organs.[99]

The publication of *Social Diseases and Marriage* in 1904 helped to popularize the social hygiene movement. The author of the book, New York City dermatologist Prince A. Morrow, formed the New York City Society of Sanitary and Moral Prophylaxis the following year.[100] Morrow's work presented the controversial idea that husbands spread venereal disease to their wives and children by patronizing prostitutes before or during marriage. Morrow believed that

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[94] Storey, "War- Time Revelations in Physical Education," 50.
[95] See Stephen Nissembaum, *Sex, Diet and Debility in Jacksonian American: Sylvester Graham and Health Reform* (Westport, Conn: Greenwood Press, 1980); Sylvester Graham, *A Lecture to Young Men on Chastity* (Boston: George W. Light, 1838).
[96] John D'Emilio and Estelle B. Freedman, *Intimate Matters: A History of Sexuality in America* (Chicago: University of Chicago Press, 1997): 68.
[97] John C. Burnham, "The Progressive Era Revolution in American Attitudes Toward Sex," *Journal of American History* 59 no. 4(March, 1973):885-908; Stuart H. Rowe, *The Physical Nature of the Child and How to Study It* (New York: Macmillan Company, 1900); D.F. Lincoln, "A Report on School Hygiene," *Journal of Social Science* 7 (September, 1874): 261.
[98] Burges Johnson, " 'Old Doc' Hitchcock, Creator of a System of Physical Education," *The Outlook* 85(April, 27 1907): 960; "A Part of the Course of Instruction Given in the Department of Physical Education and Hygiene in Amherst College," (Published and Printer by The Gazette Printing Company, Northampton, Mass.,1878).
[99] Richard K. Means, *A History of Health Education in the United States* (Philadelphia: Lea & Febiger, 1962),63-66. J.M. Gregory, "Hygiene and Higher Education," *Public Health Report and Papers* 4(Boston: Houghton, Osgood and Company, 1880).
[100] Pivar, *Purity and Hygiene.*

this transmission of venereal disease should be punishable by law.[101] In stopping the spread of contagious disease the doctor acted as a "guardian of public health" and realized "the highest ideals of preventive medicine."[102] He also sought cooperation with schools, Y.M.C.A's and education organizations to further the cause of sex education.[103] In 1913, Morrow's organization joined other similar groups to form the American Social Hygiene Association. G. Stanley Hall, Luther Gulick, Charles W. Eliot and physical educator Clark Hetherington were among the early speakers at this organization.[104]

Many people involved in school hygiene supported sex education. Both were part of a larger development of preventive medicine which involved education of the public. In the 1900s, school hygienists also focused more on health habits and practices, which conceptually extended to sex habits. By 1912, the National Education Association supported sex education.[105] A notable experiment in teaching sex education took place in Chicago public schools under the superintendent Ella Flagg Young, and was met with controversy before it was rejected.[106] However, as one educator noted in 1913, many high school teachers dealt with sexuality informally on a one-to-one basis, rather than as a formal part of the curriculum.[107]

At the 1913 Fourth International Congress on School Hygiene, sex education loomed large. Among the six speakers on the topic were G. Stanley Hall, Charles W. Eliot and Thomas

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[101] Charles Walter Clarke, *The Story of the Pioneers of Social Hygiene* (Washington: Public Affairs Press, 1961), 58; Allan M. Brandt, *No Magic Bullet: A Social History of Venereal Diseases in the United States Since 1880* (New York: Oxford University Press, 1985), Ch 1; "A History and Forecast," *Social Hygiene* 5 no. 4 (October, 1919): 555.
[102] Prince A. Morrow, *Social Diseases and Marriage* (New York and Philadelphia: Lea Brothers & Co, 1904),v.
[103] D'Emilio and Freedman, *Intimate Matters*, 205.
[104] Luther H. Gulick, "Boys' and Girls' Organizations and Social Hygiene," *The Journal of the Society of Sanitary and Moral Prophylaxis* 5 no. 4(October, 1914):180-184; Charles W. Eliot, "The American Social Hygiene Association," *Social Hygiene* 1 no.1(December, 1914): 1-5; G. Stanley Hall, "Education and the Social Hygiene Movement," *Social Hygiene* 1 no.1(December, 1914): 29-35; Clark W. Hetherington, "Play Leadership in Sex Education," *Social Hygiene* 1 no.1(December, 1914): 36- 43.
[105] D'Emilio and Freedman , *Intimate Matters*, 207.
[106]Jeffrey P. Moran, "'Modernism Gone Mad': Sex Education Comes to Chicago, 1913," *Journal of American History* 83 no. 2 (September, 1996): 481-513.
[107] W. Carson Ryan, Jr., *United States Bureau of Education Bulletin 1913 no. 48, School Hygiene, A Report of the Fourth International Congress of School Hygiene* (Washington: Government Printing Office, 1913),9.

M. Balliet.[108] A report of the congress issued by the United States Bureau of Education stated that "[S]ex hygiene was distinctly the problem that aroused greatest interest at the congress."[109] More than 2,000 people "listened intently to a discussion that was sensational, not only from the subject matter, but from the prominence of the speakers and the striking differences of opinion expressed."[110] The writer judged that doctors were ahead of the general public in their support of sex education but that, in any event, the Congress had "opened the sex question full and wide, if it was not so opened before."[111]

Generally, sex educators remained quite conservative in their views on marriage and sexuality, supporting monogamy and premarital abstinence.[112] That men should not have sex prior to marriage or see prostitutes was deemed to be of moral and medical importance. Pioneers in the field also hoped that they could change the ideas regarding the related belief in sexual necessity—that men had to have sex if they felt that they ought to, or else risk their health.[113]

Particularly after Freud's work started to become known in the United States, the notion that it was possible to sublimate the sexual instinct by will became a theme in sex education. The Freudian idea that "civilization has been built up at the expense of sex interests and that the sublimation and repression of the sexual energy is the means of attaining a higher culture," was becoming familiar among those that read psychology and education.[114] Various educators promoted teaching instruction which would "long-circuit sex and transmute and sublimate its

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[108]G. Stanley Hall, "Sex Hygiene in Infantile and Pre-Pubertal Life," *Fourth International Conference on School Hygiene* 4(August, 1913):10-15; Charles W. Eliot, "Public Opinion and Sex Hygiene," 13- 24; Thomas M. Balliet, "Points of Attack in Sex Education," 25-34; Hugh Cabot, "Education Versus Punishment as a Remedy for Social Evils," 35- 43; William T. Foster, "The Social Emergency,"45-54;Laura B. Garret, "Some Methods of Teaching Sex Hygiene,"55- 63; Rev. Father Richard H. Tierney, "The Catholic Church and the Sex Problem,"64-71.
[109] W. Carson Ryan, Jr., *A Report of the Fourth International Congress of School Hygiene*, 8.
[110]Ibid., 8.
[111] Ibid., 9.
[112] Jeffrey P. Moran, *Teaching Sex: the Shaping of Adolescence in the 20th Century* (Cambridge, Mass.: Harvard University Press, 2000); Julian B. Carter, "Birds, Bees, and Venereal Disease: Toward an Intellectual History of Sex Education," *Journal of the History of Sexuality* 10 no.2 (2001):213-249.
[113]D'Emilio and Freedman, *Intimate Matters*, 206.
[114] Rudolph Acher, "Recent Freudian Literature," *The American Journal of Psychology* 22 no. 3(July, 1911): 441.

emotions into motive force for worthy achievement and best possible development of self."[115] One social hygiene worker wrote in a 1915 book for boys: "If an overabundance of life seems to demand sexual activity, let the youth not yield to temptation, waste his energy, and lose his self-respect. Far better let him control this impulse or force, and make it his servant. By *immediately* turning to vigorous exercise, or hard mental or physical work, this impulse may be converted in a wonderful yet mysterious manner into a great constructive force in his life."[116] Thus, new psychological theories were used to buttress traditional ideas of morality; such ideas informed social hygiene, as Americans entered the war.

The CTCA workers used lectures, pamphlets, exhibits, books, stereomotographs as well as innovative motion pictures, including *Fit to Fight* and *How Life Begins,* in the sex education program.[117] The YMCA played a large role in the allocation of reading material. Among the most widely-distributed publications were Gulick's pamphlet "The Stuff that Wins" and his book *Dynamic of Manhood,* as well as Exner's pamphlet "Friend of Enemy" and book *Rational Sex Life for Men.*[118] Soldiers were taught that continence translated to "self-respect, efficiency and economy, reputation, square deal, respect for women, pride of family and race (past and future), patriotism."[119]

Attempts to educate people about sexual morality in the early twentieth century led to a focus on the horrible consequences of venereal disease and innocent victims of prostitution. As medicine improved, however, prostitution was no longer so easily equated with the horror of sexually transmitted disease. Because of the availability of cheap prophylactics reformers could

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[115] C.F. Hodge, "Instruction in Social Hygiene in the Public Schools," *Bulletin of the American Academy of Medicine* 11 no. 5 (October, 1905): 507.
[116] Harry Hascall Moore, *Keeping in Condition: A Handbook on Training for Older Boys* (New York: Macmillan Co, 1915), 28.
[117]Walter Clarke, "Social Hygiene and the War" *Social Hygiene* 4 no. 2(April, 1918):269.
[118]M.J. Exner, "Social Hygiene and the War," *Social Hygiene* 5 no.2 (April, 1919): 281.
[119] Clarke, "Social Hygiene and the War," 291.

no longer simply correlate vice and sickness.[120] Gulick dealt directly with this new problem. He realized that "morality can no longer be promoted through the fear of these diseases. For the first time we have to evaluate morality because of its own significance rather than as an agency to protect one from disease."[121] He emphasized that immoral behavior, while not directly leading to disease, caused men to perform below their potential. Gulick looked to boxing, cycling, baseball and football to exemplify the requirement for "clean living" among army men. Athletes who practiced "dissipation" soon learned the lesson that it held them back and learned to "stay clean" for the good of the team. He questioned, "[I]f college boys will stay clean to win a football game, will not the officers and soldiers of the American Army stay clean to win the war?"[122] This idea of a moral athlete was a key point that Gulick emphasized in "The Stuff that Wins."[123]

As sports were used to promote morality for the good of the army and nation, they were also used to distract men from vice. According to the overseas directors, "[P]lay has been made stronger than vice. Constructive activities can be made more attractive than are destructive pleasures."[124] Without the recreation activities provided at Camp Sherman, one of the coaches believed that "[C]ertain it is that they would lead a lonesome life—not to say a dangerous one."[125] One writer held that, "[T]he rediscovery of play as a social agent is one of the most vital discoveries of modern times."[126] It was applied "educationally" to "redeem the city youth from

[120] Bristow, *Making Men Moral*, 34.
[121] Gulick, *Morals and Morale*, 35.
[122] Ibid., 38.
[123] M.J. Exner "Social Hygiene and the War," *Social Hygiene* 5 no. 2 (April, 1919): 284.
[124] George J. Fisher "Points of Emphasis in a Post-War Program in Physical Training," *Physical Training* 26 no. 4 (February, 1919):715; "Making Vice Unattractive to Soldiers," *Current Opinion* 63 (July, 1917): 41-42.
[125] Marc C. Goodnow, "Physical Work Makes Morale," *Association Men* 43 no. 10(June, 1918):784.
[126] William J. Black, "Keeping Clean the Army of Democracy," *New York Tribune*, 3 June 1917, pg. D3.

crime and degeneracy. But it lent itself naturally, unconsciously to the adults, [sic] needs in the marvelous development of recreations other than booze and vice."[127]

Gulick judged wartime recreation efforts to be very successful. He concluded that among troops the rates of venereal disease were very low and that "the Army, instead of debauching men, is cleaning them up."[128] As in the case of those who claimed that the army created men who were returning to America in better physical shape and that the United States needed to implement physical training on par with the program of the Army, Gulick hoped that America's "moral tone" could be uplifted to the morality he believed he witnessed in the AEF. Instead of worrying about the soldiers returning home to the United States with diseases, Gulick was concerned about the opposite: "[W]ill American debauch our Army when it comes back"?[129]

Dudley Sargent and the Promotion of Universal Physical Education

As the war entered its second year, many Americans began to make calls for "preparedness." One of the issues at stake was universal military training, which gained support from various government officials and political organizations.[130] Physical educators, for the most part, took this opportunity to press for better physical training among America's youth rather than military training. Sargent maintained that "[T]he best material for an army is not produced by military drill."[131]

Senator George E. Chamberlain introduced a bill in December 1915, which would have created compulsory military training for able-bodied boys and men. From age twelve to eighteen, the young men would be trained ninety hours a year as a cadet. The following six

[127]Ibid., D3.
[128] Gulick, *Morals and Morale*, 34.
[129] Ibid., 34.
[130] Chase Mooney and Martha E. Layman, "Some Phases of the Compulsory Military Training Movement, 1914-1920," *The Mississippi Valley Historical Review* 38 no. 4(March, 1952):635-636.
[131]Sargent, "True Preparedness," 48.

years, men would be part of the Citizen Army and would undergo 120 hours of training.[132] The tenets of the bill and ideas of universal training were debated in Congress and a hearing was held in 1916-1917 during which Dudley Sargent's son Ledyard testified on his behalf, and several others cited his work.[133] Throughout the war period, Sargent reiterated his beliefs and, along with others in the field, called for compulsory physical training instead of military training.

Along with other physical educators, Sargent accounted for the fighting ability of the warring nations by reflecting on their prewar physical training practices. He used Britain's self-criticism to promote American physical training. In 1916, he quoted a report from British statesmen Sir George Newman, who stated that Britain had made "the development of the body and mind the luxury of a small and privileged class."[134] Newman's report received greater recognition as the subject of a London *Times* editorial entitled "The Wasted Years," which American educators in turn used for physical education campaigns.[135] In contrast to England, Sargent highlighted the "superiority and efficiency" of the Swiss army, and attributed their ability to the participation of 65% of their men in gymnastics organizations. He also estimated that one million German soldiers participated in the Deutsche Turneschaft.[136] To Sargent, early battles illustrated that it was "perfectly clear," that "the German soldier's war abilities, his strength and endurance, were developed outside of strictly military service."[137]

In his staunch support for physical training rather than military training Sargent was upholding views that he developed early in his career when he was faced with calls for military

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[132] Mooney and Layman, "Some Phases of the Compulsory Military Training Movement," 635-636.
[133] "Statement of Mr. L. W. Sargent," *Universal Military Training: Hearing Before a Subcommittee of the Committee on Military Affairs, United States Senate, Sixty-Fourth Congress, Second Session* (Washington: Government Printing Office, 1917): 494-502. References to Sargent's work include, 78, 364, 504-506, 523.
[134] Sargent, "True Preparedness," 48.
[135] Thomas A. Storey, "To A Graduating Class in Physical Education" APER 24 no. 2 (February, 1919):96-106; Willard S. Small, "The Nation's Need of Physical Education," *The Journal of the New York State Teacher's Association* 6 no.5(June, 1919):181-183; "What England Learned," *School Life* 1 no.2 (August, 16, 1918):18.
[136] Sargent, "True Preparedness," 47.
[137] "Modern War and Athletics," *New York Tribune*, 20 June 1915, pg. B7.

training in schools. As early as 1886, he criticized Boston's military training program.[138] In 1896, Sargent observed that support for military training in the schools resurfaced every ten years or so in the United States, and he reaffirmed this belief in 1916.[139] Throughout his career, Sargent held that military drill "does not to any extent meet the physiological demands of the body."[140] It was a "one-sided" exercise that did not use muscles evenly or require increased respiration. Moreover, the uniforms hindered breathing and kept muscles "in a state of prolonged tension" which "not only impairs the tone of the muscles used, but also puts an additional strain upon the brain and nervous system."[141] Rather than ensure graceful carriage, as many supposed, drill made students "stiff and angular" with "drooping and rounded shoulders."[142] In 1916, he railed against the "utter uselessness" of military drill in youth: "Putting muskets into the hands of these boys and making them think they are soldiers—tin-soldiers—is nothing short of pathetic."[143]

Many in physical education agreed with Sargent that military drill would not prepare a nation for the physical needs of war. George Fisher urged "a sane and systematic plan of daily exercise" rather than drill.[144] Physical Director at the University of Wisconsin, George Ehler likewise found the practice of the manual of arms "positively injurious to the growing and developing boy." Drill was a "sound-deadening, enthusiasm-killing, contempt-developing

[138] Dudley A. Sargent "Untitled speech," *Boston Medical and Surgical Journal* 114 no. 19(May, 13, 1886):439-440.
[139] Sargent, "Military Drill in the Public Schools," APER 1 nos.1,2 (September-December, 1896):52.
[140] Sargent, *Physical Education* (Boston: Ginn & Company, 1906),218.
[141] Ibid., 219.
[142] Ibid., 220; Sargent, "Military Drill in the Public Schools," APER 1 nos. 1,2. (September-December,1896):52.
[143] "Attack Military Drill in Schools," *New York Times*, 6 July 1916, pg. 24.
[144] George J. Fisher, "Physical Preparedness" *Association Men* 42 no. 10 (July, 1916):552.

treadmill." [145] Furthermore, various writers in education publications believed drill was undemocratic and insufficient in producing physical fitness.[146]

Sargent also believed that the nature of modern warfare made military drill impractical and obsolete. In December 1914, he observed that "modern inventions, including the aeroplane, submarine, machine guns and cannon of superior range, have completely changed the art of war." According to letters from the battlefield the fighting was "dull, stupid and monotonous" and most of the time soldiers were found "[B]urrowing in the ground, digging ditches, constructing trenches, and shooting for the most part while continually under cover."[147] The chances of survival in such a war depended upon "mental acumen, moral courage and physical hardihood" which were developed throughout the man's early life in "schools, colleges, athletic grounds and gymnasiums."[148]

Physical educators issued similar statements regarding the changing needs of modern warfare. When Canadian-born R. Tait McKenzie arrived to train the British army he found that the "war is different from any other that has ever been… The firing is feverish and the tension is continuous and extreme, requiring as never before the strong nerve and the steady hand."[149] Soldiers had to become "mentally and physically fit as never before" and he conducted gymnastics and fighting exercises.[150] In November 1915, the *Physical Education Review* printed an editorial listing the requirements of soldiers in modern war: making forced marches, running, digging trenches, shooting, and surviving the horrible conditions of the trenches. They held that

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[145] George W. Ehler, "Military Drill in Physical Education," APER 20 no. 8 (November, 1915):540.
[146] Edward B. De Groot, "Physical Education Versus Military Training in Secondary Schools," APER 22 no.5 (May, 1917):302-304; David Felmley, "Military Training in the High School," *School and Home Education* 35 no. 10 (June, 1916):318-319.
[147] Sargent, "Is War a Biological Necessity?" APER 20 no. 3(March, 1915): 141.
[148] Ibid., 141.
[149] R. Tait McKenzie, "The Physical Training of the New British Armies," APER 20 no. 9 (December, 1915): 548.. See also, J. George Becht, "Physical Education in the State of Pennsylvania," *Mind and Body* 25 no. 269 (May, 1918):116.
[150] Ibid., 548.

"[N]one of these qualities depends upon skill in the manual of arms or upon the old military formations which were planned for operation on the plains of Europe before the development of modern artillery, the machine gun or the aeroplane."[151]

In early 1917, President Woodrow Wilson proclaimed that "physical training is needed but can be had without compulsory military service."[152] Opponents of military training formed the Committee for Promoting Physical Education in the Public Schools of the United States, which was comprised of Dudley Sargent, John Dewey, Ella Flagg Young, two college presidents and three state superintendents. Sargent quickly drafted a bill known as "a bill to upbuild national vitality through the establishment of physical education and training in the public schools of the state." Taking into account the "Battle of the Systems," Sargent was cautious and wise not to mandate specific systems of physical training. The bill simply made provision for the employment of a State supervisor of physical education with a staff in charge of "physical education and training and the proper care of the health of pupils of both sexes" during each year of primary and secondary school.[153] The bill thus incorporated physical education and general school hygiene or medical supervision of students.

Prior to 1915 only three states had required physical education laws.[154] With the war, several states enacted compulsory physical education in the public schools through legislation. California, Delaware, Illinois, Maryland, Nevada, New Jersey, New York and Rhode Island were quick to pass such laws.[155] In 1918, the U.S. Commissioner of Education proposed a conference regarding legislation for federal physical education and health law. Sixty leaders in the field

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[151] "Military Training Vs. Physical Training in School and College," APER 20 no. 8(November, 1915): 535.
[152] "News Notes. Leading Educators Press for Physical Training in Public Schools," APER 22 no. 2 (February, 1917):113.
[153] "Physical Training Without a Gun," *The Survey* 37(February 10, 1917):552.
[154] Martha H. Verbrugge, *Active Bodies: A History of Women's Physical Education in the Twentieth Century* (New York: Oxford University Press, 2012), 3.
[155] Thomas A. Storey, "State Legislation for Physical Training," *Physical Training* 15(September, 1918):430-446.

attended the conference in Atlantic City and formed the National Committee on Physical Education. Soon, a group called the National Physical Education Service was created to promote legislation.[156] Campaigns for training were quite successful for shortly after the war twenty-eight states passed legislation and by 1929 forty-six states had some type of physical training law.[157]

The Expansion of Health Work: School, Mental and Social Hygiene

The wartime activity and social landscape spurred a number of Progressive reforms, including further development and advocacy for health work for youth. Building on the achievements of the CTCA, social hygienists gained some ground, but sex education in schools still remained disparate and controversial in the 1920s. The mental hygiene movement, which built on previous concerns about the mental health of students dating back to the 1860s, became organized as psychiatrists began to seek involvement in schools. As physical education laws were passed through state legislatures, school hygiene also expanded and the Federal government took a role in a campaign for health called "The Children's Year." According to John Duffy, "it is safe to say that by 1930 most municipal officials had accepted the principle that they had some responsibility for the health of schoolchildren."[158]

According to one health worker, reflecting on his experience in this period, "'Hygiene' had become discredited as a term because hygiene teaching was factual and unrelated to healthful living. The war, incidentally, had called attention to child health, as every war does. During the 'teens we had the swing toward emphasis on healthful living and healthy behavior,

[156] Van Dalen and Bennett, *A World History of Physical Education,* 439-440.
[157]Verbrugge, *Active Bodies,* 3.
[158] John Duffy, *The Sanitarians* (Urbana: University of Illinois Press, 1990), 213.

the throwing out of the word 'hygiene' and the substitution of the term 'health.'"[159] Hence, programs were often labeled "school health," "health supervision" and incorporated elements of health education, physical education, medical examination of students and school cleanliness.[160] This built upon efforts before the war to expand the boundaries of school hygiene as well as increase the teacher's part in school hygiene and medical inspection.[161] However, some new programs overlapped with physical education programs, causing professional disputes.

The federal government and leading professional organizations published pamphlets on education and hygiene, which emphasized the importance of health in education. The federal Bureau of Education included health first among seven objectives of education. They recommended that secondary schools provide "health instruction, inculcate health habits, organize an effective program of physical activities, regard health needs in planning work and play, and cooperate with home and community in safe-guarding and promoting health interests."[162] According to the Joint Committee on Health Problems in Education, conducted by the National Education Association and the American Medical Association, teachers of health education should cover the topics: the physiological basis of health, preventive medicine and health, nutrition and health, mouth hygiene, hygiene of the eye, physical education, education for parenthood and social hygiene, mental hygiene, accident prevention, and health education

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[159] Means, *A History of Health Education* 148.

[160] Edwin A. Layton, "The Tacoma System of Health Supervision," *Proceedings of the National Education Association* 55 (Printed by the University of Chicago Press, 1917): 494-499; "Health Supervision in Virginia," *School Life* 2 no. 4 (February 16, 1919):7; Taliaferro Clark, "School Medical Inspection," *Modern Medicine,* 1 no. 8 (December, 1919):709-712; Eula G. Christian, "Health Supervision in Public Schools," *American Journal of Nursing* 21(April, 1921):454-460; Philip Moen Stimson, "School Health Supervision," *Teachers College Record* 22 no. 3(May, 1921): 234- 247;C.P. Knight, "Health Supervision of School Children on a State-Wide Basis," *National Education Association Journal of Proceedings and Addresses* 59(Printed by the University of Chicago Press, 1921):379-383.

[161] Ernest B. Hoag, "Some Changing Conceptions of School Hygiene," *Public Health* 2 no. 3(March, 1914):120-122.; Louis W. Rapeer," Medical Supervision of Rural Schools, The Teacher's Responsibility," *American Journal of School Hygiene* 1 no. 2(February, 1917):25- 30.

[162] "Cardinal Principles of Secondary Education," *Bulletin, 1918* no. 35(Washington: Government Printing Office, 1918):11.

through the study of the life processes of plants and animals.[163] Within the schools, teachers were given a greater role regarding mental health and the physical examination of pupils.

A program for the medical inspection of children under school age was also established by the federal government, under the Department of Labor's Children's Bureau. The stated purpose of the yearlong campaign called the "Children's Year" was to save one hundred thousand babies.[164] It was put into effect precisely one year after the nation's entry into WWI, using the hardship in Europe as a warning of what might happen in the States.[165] The Children's Year incorporated practices from physical education and school hygiene. Seven million children were weighed and measured, and their parents were provided with charts which served as "an unforgettable object lesson to all the surrounding adults," and were thus meant to teach the community about health.[166] Many children received complete physical examinations in which "unsuspected defects were discovered and detected."[167] There was a focus on malnutrition, curvature of the spine, adenoid growths and tonsils.[168] Additionally, the Children's Bureau promoted health education and recreation. Due to the campaign, twenty-seven states created a division on child health in the state government, to add to the eight which had them prior.[169] In California, where of the 32,167 children who were examined, 46% were labeled defective and

[163] Means, *A History of Health Education,* 225; Thomas D. Wood, "Health Education: A Program for Public Schools and Teacher Training Institutions," (New York City, 1924):25-72.
[164] Elizabeth A. Woodward, "The Children's Year and the Opportunity of the Kindergarten for Conservation Work in Congested Cites," *National Education Association Journal of Proceedings and Addresses* 56 (Printed by the University of Chicago Press, 1918):132.
[165] Mary Elizabeth Titzel, "Being a Mother in War-time," *The Mother's Magazine* 14 no. 1(January, 1919):111.
[166] Julia C. Lathrop, "Standards of Child Welfare," *Annals of the American Academy of Political and Science* 98 (November, 1921): 2.
[167] Ibid., 2.
[168] Titzel, "Being a Mother in War-time," 111.
[169] Helen V. Bary, "The Trend in Child Welfare Work," *North American Review* 213(April, 1921): 498.

31% required adenoids or tonsil operations. One critic referred to these adenoid operations as a "present-day craze."[170]

Medical examinations of schoolchildren continued to increase in the 1920s. One textbook claimed that "medical inspection of schools is no longer an experiment, but a pressing necessity."[171] Of 323 cities that responded to the 1922 survey of the Joint Committee on Health Problems in Education, 61% had health and physical examinations once a year, 17.3% had it twice a year.[172] Among the most frequently examined body parts were eyes, ears, teeth, throat, nose, skin, heart, lungs, nutrition, weight, tonsil, hair, glands, nervous system, height, adenoids, vaccination, posture, communicable diseases and orthopedic defects.[173] Possibly, less focus was spent on adenoids, which were examined in only 48 of 245 cities reporting, while 89.3% examined eyes, 82.9% examined ears, and 74.3% examined teeth.[174] Of 318 cities, 68.9% had a daily inspection for health habits.[175] By 1930, thirty-seven states required some type of medical inspection of pupils. Two states required the examination of teachers for infectious diseases, and three required dental examinations from the pupils.[176] Many medical inspectors believed that teachers should be trained in detecting disease and deformity. One stated, "[T]he more they

[170] "Statement of Mr. H.B. Anderson, Representing American Medical Liberty League, 145 West Forty-Fifth Street, New York, N.Y," *Protection of Maternity and Infancy Hearing Before the Committee on Public Health and National Quarantine United States Senate, Sixty-Sixth Congress, Second Session* (Washington: Government Printing Office, 1920):60. On the Children's Year also see: Jessica B. Peixotto, "The Children's Year and the Woman's Committee," *Annals of the American Academy of Political and Social Science, War Relief Work* 79 (September, 1918):257-262; "Work of the Children's Bureau," *School and Society* 9 no.215 (February 8, 1919):171; "Children's Year," *School and Society* 9 no. 224 (April 12, 1919):441-442.
[171] Milton J. Rosenau, *Preventive Medicine and Hygiene* 2 ed. (New York: D. Appleton and Company, 1917):1338.
[172]Thomas D. Wood, *Health Service in the City Schools, Report of the Joint Committee on Health Problems In Education of the National Education Association and the American Medical Association* (Prepared by Thomas D. Wood, 1922):13.
[173]Ibid., 13.
[174] Ibid., 15.
[175] Ibid., 18.
[176] *White House Conference 1930, addresses and abstracts of Committee Reports* (New York: The Century, co., 1931), 337.

know the better. They will bring cases to the attention of the school physician and the more they know the more they will stir him to do his best work."[177]

Sex education had hardly been taught in schools before the war. The Commissioner of Education and the Surgeon General both noted that the importance of social hygiene was clear to many that were in health work prior to the war. They claimed that "[I]t was the war, however, that revealed the immediate urgency of this work. Now as before it is essential, both for preventing the destructive venereal diseases and for insuring the best use of their creative impulses, that our boys and girls be wisely directed to an understanding and control of their sexual energies."[178] In 1922, the federal government endorsed sex education.

Proponents of sex hygiene linked it with recreation for youth. Many were enthralled by the idea of controlling the sex impulse and sublimating it for constructive use. The author of a government publication on sex education, biology professor Benjamin Gruenberg, asserted that during adolescence in particular there was "a rapid evolution of energies that must find an outlet."[179] Educators must "provide not only a great abundance but also a great variety of activity," or else, "the pent-up energies will find outlets of their own along the line of least resistance; and at times the results will be disastrous either to the individual or to others or to both."[180] In a 1924 pamphlet, Thomas D. Wood found that advances in health would not come from "overwhelming bewildered children with statistics of venereal disease," but by "creative constructive ideals of usefulness; by establishing habits of accepting community responsibility,

[177] Ibid., 388.
[178] John J. Tigert and Hugh S. Cumming, "Foreword," in *High Schools and Sex Education: A Manual of Suggestions on Education Related to Sex,* ed., Benjamin C. Gruenberg (Washington: Government Printing Office, 1922), v.
[179] Ibid., 12.
[180] Ibid.,12.

and by informing young people accurately and scientifically of those fundamental facts of life and human relationships which will guide them in meetings their problems."[181]

Although there was stimulating theorizing on the topic by educators and medical professionals, the actual implementation of programs was slow to develop. A 1920 survey of 6,488 high schools found that 59.4% lacked any sort of sex education. The number giving emergency lectures, special programs or exhibits on the topic, amounting to one or more lessons added to the curriculum, was 25% while 15.5% of school had sex hygiene integrated into the curriculum.[182]

In the previous chapter, we saw how in the 1910s, psychologists such as Lightner Witmer and William Healy began to publicize complex views of childhood development which undermined the connection drawn between adenoids, intellectual incapacity and deviance. According to historian Sol Cohen, shortly after World War I, psychiatrists developed the mental hygiene movement, which dealt with many issues of child psychology. The war catalyzed this movement by drawing attention to the mental abilities of the troops. Moreover psychiatrists began to re-envision their profession, seeking roles outside of asylums and hospitals, which would incorporate education and the prevention of mental disease.[183] Within the school, mental hygienists were focused on adjustment and personality.[184]

William Burnham declared in 1918 that the scope of mental hygiene was expanding with the war. The importance of mental hygiene was seen in improving morale, detecting nervous and mental disorders, and helping injured soldiers and traumatized children. Prior to the war, those in the field were working to care for and prevent feeble-mindedness. With the war mental

[181]Wood, "Health Education," 18.
[182] Newell W. Edson, *The Status of Sex Education in High Schools* (Washington, D.C.: Government Printing Office, 1922),10.
[183] Sol Cohen, "The Mental Hygiene Movement, the Development of Personality and the School: The Medicalization of American Education," *History of Education Quarterly* 23 no.2(Summer, 1983):126-127.
[184] Ibid., 126-128.

hygiene grew to become a "gospel of mental health" for schoolchildren, soldiers and "overburdened and anxious friends at home." Drawing a parallel between schools and the military, Burnham claimed that "[H]ereafter, the training of children and youth, whether given in the schools or in the military camps, cannot neglect mental hygiene and the development of morale."[185]

The philosophy of mental hygiene had much in common with the philosophy of physical education. Shortly after the war's end, a leading figure in mental hygiene, Yale professor Arnold Gesell, likened mental power to an intangible national resource, that could be "conserved, diverted, increased if the nation so wills."[186] Gessell held that "the war has made us realize as never before, that this intangible mental resource is as real as the mountain waters which fertilize a valley, or run to waste in a gorge, or turn a turbine."[187] His thoughts clearly evoke the work of Frederick W. Taylor on scientific management, who compared conserving natural resources to conserving worker's physical movements. [188] However, they also relate to ideas promulgated by Edward M. Hartwell, who believed that people had a limited quantity of nervous energy, and that physical education could help conserve and channel the energy.

As in school hygiene and medical inspection, teachers had a great role to play in ensuring mental hygiene.[189] Mental hygienists urged teachers to pay attention to issues of adjustment and

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[185] William H. Burnham, "Mental Hygiene," *Journal of Education* 88 no. 5(August 1, 1918):120. Also see: Lewellys F. Barker, "The Wider Field of Work of the National Committee for Mental Hygiene," *Mental Hygiene* 1 no. 1 (January, 1917):4-6; David Spence Hill, "Valid Uses of Psychology in the Rehabilitation of War Victims," *Mental Hygiene* 2 no.4 (October, 1918): 611-628; "Army Psychologists for City Public School Work," *School Life* 2 no. 1 (January 1, 1919):176.

[186] Arnold Gesell, *Exceptional Children and Public School Policy*(New Haven: Yale University Press,1921), 7

[187] Ibid., 7.

[188] Frederick Winslow Taylor, *The Principles of Scientific Management* (New York and London: Harper & Brothers Publishers), 5-6.

[189]On the expanded role of teachers in medical inspection and school hygiene, see Chapter Eight. On the expanded role in mental hygiene, see Jessie Taft, "How Can We Safeguard the Child Against Mental Disease?" *New York State Journal of Medicine* 17 no. 11(November, 1917):481-485; Walter F. Dearborn, "Facts of Mental Hygiene for Teachers," *Mental Hygiene* 3 no. 1(January, 1919):11- 15; William H. Burnham, "A Survey of the Teaching of

the child's emotional well-being. According to Dr. W.L. Treadway, teachers were to prevent unusual attachments and reclusiveness in the pupils.[190] The Joint Committee on Health Problems in Education advised educators to encourage honesty, efficiency, and concentration and discourage day-dreaming. They were to show compassion try to guard children from feeling ashamed, frightened, embarrassed or inferior and were to give every child "a chance to succeed at something."[191] While there was more focus on emotions, concerns of the previous generation were still present. Harvard Professor Milton J. Rosenau maintained that teachers and administrators had to be vigilant, watching for symptoms of neurasthenia and those "threatening a nervous breakdown"[192] These included, irritability, sleepiness, "morbid ideas, bashfulness, undue sensitiveness, causeless fits of crying, morbid introspection, and self-consciousness."[193] Furthermore, the Joint Committee on Health Problems in Education advised educators to create a "calm, orderly atmosphere" and to lead students to "acquire emotional control."[194]

College Physical Education and Hygiene after the War

Shortly after the war, the biological engineering vision, which joined physical education and hygiene, continued to become fragmented. Compulsory training would remain in various forms, but physical directors were less likely to be doctors, and have authority over examinations and hygiene. They increasingly had degrees in education and were closely associated with

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Mental Hygiene in the Normal Schools," *Mental Hygiene* 5 no.1(January, 1921):19-45; Daniel Wolford La Rue, *Psychology for Teachers* (New York: American Book Company, 1920).

[190] W.L. Treadway, "Mental Hygiene and Its Relation to Children of School Age," in *International Clinics: A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles Volume II,* ed. H.R.M. Landis (Philadelphia and London, J.B. Lippincott Company, 1920): 271-272.

[191] *Health Education: A Program for Public Schools and Teacher Training Schools, Joint Committee on the Health Problems in Education of the National Education Association and the American Medical Association with the co-operation of the Technical Committee of Twenty-Seven* (Prepared under the Direction of Thomas D. Wood, Chairman, New York City, 1924): 63.

[192] Milton J. Rosenau, *Preventive Medicine and Hygiene* (New York: D. Appleton and Company, 1921), 1349.

[193] Ibid., 1348-1349.

[194] *Health Education: A Program for Public Schools,* 62.

sports. While there was a continued focus on the mind-body connection and physical efficiency tests with physical education departments, there was a greater emphasis on sports and play than prescribed physical training based on anthropometry. Additionally, hygiene received a boost from the federal government, and new departments of health supervision often called the "Student Health Service" took over many of the roles that had been part of physical training.

Shortly after the war, physical education moved further away from formal work in gymnasiums to play and sports. An emerging physical educator, Jesse Feiring Williams, described college gymnastics as, "inflexible, unscientific, often unhygienic."[195] David Snedden, a Columbia University education professor supported outdoor exercise. In 1920, he stated that "[W]e build gymnasiums, then we warm them, then we set ourselves the problem of ventilating them, forgetting all the time that the best place for vigorous physical exercise is out under the sky and exposed to the various changes that the days bring. Surely the gymnasium is a nursery of mollycoddles!"[196] Prominent physical educators like Thomas D. Wood also agreed that "we have overdone the gym" and supported a more "naturalized" physical training. Reflecting the influence of the play movement, he thought physical education should be joyful, interesting, and spontaneous and lack self consciousness, in hope of promoting initiative and self-direction. [197]

Along with this shifting focus, more emphasis was given to psychological and social benefits of physical training. While the biological engineers focused on improving the health of and mental capability of the individual, and clearly connected physical training to mental capacity and mental health, the new generation of physical educators spoke more frequently

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[195] Jesse Feiring Williams, "Proposals for Preparedness in Physical Education," APER 21 no. 8 (November, 1916):455.
[196] David Snedden, "Problems of Physical Education, Continued," APER 25 no. 7 (October, 1920): 309.
[197] Thomas D. Wood, "Physical Training," *Pennsylvania State Educational Association, December 1916* (Lancaster, PA.: Pennsylvania School Journal, 1917*)*:121-122; Thomas Denison Wood and Rosalind Frances Cassidy, *The New Physical Education; a Program of Naturalized Activities for Education Toward Citizenship* (New York: Macmillan Co., 1927).

about personality, citizenship and socialization. According Williams' 1922 publication, physical education was to provide, "an opportunity for the individual to act in situations that are physically wholesome, mentally stimulating and satisfying, and socially sound."[198] The latter called for "[A]dequate provision for development of social and moral values in which you believe and for which you are willing to work…such provision must make for good citizenship." Among the values listed for development were service, fairness, honesty, loyalty and obedience to authority, modesty, submission to group opinion or cooperation, courtesy, self-restraint, self-control, self-discipline, and mercy.[199]

However, the concern for testing efficiency and skills of students remained an important part of college physical education. Sargent had developed the Universal Test for Strength, Speed and Endurance, and as seen in Chapter Five, many physical educators incorporated medical tests and various skills tasks into systems of testing throughout the 1910s and 1920s. [200] At 70 years old and technically retired, Sargent was still searching for the means of measuring, "*energy*, 'pep,' 'vim,' vitality or whatever it may be termed which drives out internal machinery."[201] In 1921, he told the AAAPE, that after using various types of testing equipment for years, he decided to "go back to first principles."[202] The following year, Sargent explained his new test, which simply took into account height, weight and how high a person was able to jump. Still trying to find the "unknown equation which makes for power and efficiency" he tried to measure "will power, nerve force, or some other unknown quality, that makes for physical efficiency."[203] This was indeed a question that drove him throughout his lifetime and set a research agenda for

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[198] Jesse Feiring Williams, *The Organization and Administration of Physical Education* (New York: Macmillan Company, 1922),18
[199] Ibid., 20-21.
[200] Van Dalen and Bennett, *A World History of Physical Education*, 469.
[201] Dudley A. Sargent, "The Physical Test of a Man," APER 26 no.4 (April, 1921):194. This was also printed in *School and Society* 13 no. 318 (January 29, 1921):128-135, and *Mind and Body* 28 no.297 (April, 1921):497-505.
[202] Sargent, "Taking Account of Stock," APER 27 no.2(February, 1922):50.
[203] Sargent, "Physical Test of a Man,"193.

many in the field.[204] These tests served the purposes of examining students, collecting data, prescribing exercise and encouraging health. In 1922, one person in the field noted, "[I]n recent years this subject-matter [tests of physical efficiency] has found a wide application in schools of physical education and hygiene."[205]

There was some effort to incorporate "mass athletics" reminiscent of the army activities at the college level, but this was short-lived. In 1919 the NCAA sponsored a mass athletic meet for college freshman involving twelve colleges.[206] However, the idea of compulsory or universal athletics in addition to the long-standing intercollegiate competitions became popular. The editors of the *American Physical Education Review* explained that during the war "[T]here was a very good military reason to train up the weaklings to the average attainment, or to train all up to a higher average."[207] Schools which promoted exclusive team sports were "not necessarily looking after the physical welfare of its students," and thus, had "much to learn from the army in this respect."[208] The editors hoped that schools would practice intramurals that included "every student as an actual player, and not merely as a voice on the bleachers."[209]

Compulsory athletics increased at the college level.[210] In 1920, Harvard, Yale, the University of Pennsylvania, Columbia, and Northwestern University were incorporating required

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[204] See Chapter Six for examples of physical education tests. Also See, Jessie I. Whitman, "Physical Efficiency of High School Girls," APER 27 no.1 (January,1922):18; R. Burton-Opitz, "Tests of Physical Efficiency," APER 27 no.4(April, 1922):153-159; Frederick Rand Rogers, *Tests and Measurements Programs in the Redirection of Physical Education* (New York: Bureau of Publications, Teachers College, Columbia University, 1927); Agnes Wayman, "What to Measure in Physical Education," *Research Quarterly, American Physical Education Association* 1 no. 2(May, 1930): 97-110; John F. Bovard and Frederick W. Covens, *Tests and Measurements in Physical Education* (Philadelphia, London, W.B. Saunders, Co., 1938);Van Dalen and Bennett, *A World History of Physical Education*, 468-472.

[205]Burton-Opitz, "Tests of Physical Efficiency," 154.

[206]"Athletics—Past and Future," *Columbia Alumni News* 10 no. 12 (January 3, 1919):327-328;Sol Metzger, "Everybody Playing at Penn State," *Outing* 75 no. 1(October, 1919):17; Alison W. Marsh, "Amherst-Wesleyan Group Track Meet," APER 27 no. 4(April, 1922):174-176.

[207] "Athletics for Everybody," APER 25 no. 4(August, 1920):180.

[208] Ibid., 180.

[209] Ibid., 180.

[210] Henry S. Curtis, *School Grounds and Play* (Department of the Interior, Bureau of Education Bulletin 1921, no. 45) (Washington: Government Printing Office, 1922):7.

sports for students at various levels.[211] Other colleges still retained formal work in the gymnasium but added athletic electives.[212]

The program at Harvard was indicative of nationwide trends of the post-WWI period. Under Sargent's successor William H. Geer, the Physical Training department shifted focus away from formal work. A writer maintained that "[E]xcept for the comparatively small number of men who need some special sort of physical building up, none of the wearisome gymnasium exercises with chest weights and other apparatus which naturally come to mind with the phrased 'compulsory exercise' are required."[213] Geer also was in charge of unorganized athletics. Moreover, physical examinations were no longer part of the Physical Education department. The Department of Hygiene under Dr. Roger I. Lee, had taken over the physical examinations, along with the power to bar students from athletics, which had formerly been under Sargent's authority. Dr. Lee also gained authority to approve the hiring of physicians and trainers. A Medical Adviser, Dr. Bailey was also part of the department and dealt with illnesses in the infirmary.[214]

This de-medicalization of physical education and growth of hygiene was a trend through the 1920s and was supported by a new organization, the American School Health Association. Dr. John Sundwall emerged as an early leader, writer and advocate of developing health supervision, or the "Student Health Service," which was to incorporate the vision of biological engineering. Sundwall held a doctorate and medical degree and taught anatomy before becoming director of the University of Minnesota Health Service in 1918. In 1921 he took a similar

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[211] Ibid.,7; "Intercollegiate Athletics and the War" *Mind and Body* 25 no.268(April, 1918):78-79;D.F.Luby, "Athletics and Their Relation to War[abstract]," *Journal of the American Medical Association*71 no. 23 (December 7, 1918):1941-1942; "New Idea of Compulsory Athletics" *Outing 7*5 no. 1 (Oct, 1919): 34.
[212] J.W. Wilce, "Report of the Committee on Intramural Sport, Athletic Research Society, December 27, 1917," APER 23 no. 5(May, 1918):279-286.
[213] "'Athletics for All' at Harvard," *Harvard Alumni Bulletin* 25 no. 33 (May 24, 1923): 984.
[214] Ibid., 984.

position at University of Michigan in the new position of "Health Officer."[215] Under the authority of a doctor serving as Health Officer, the Health Service had manifold purposes: hygiene courses; physical training; corrective work; medical treatment; and health oversight of college facilities and food. Aside from the last two areas, these had been the roles of the college physical director, which Sundwall realized, writing that, "there is practically nothing in the program of students' health service which has not been at one time or another the more or less cherished ideals of genuine physical education."[216] He continued that "[O]ne might well state that the students' health service movement is but a rapid expansion of the hygiene and medical phases of physical education for which additional facilities such as equipped dispensaries and hospitals and specially trained personnel or staff have been provided."[217]

Sundwall realized that the continuity could lead to disputes between those employed in the new health services and those that had been in longer-standing physical education programs. Especially when the health service was created separately from the physical education department there was "duplication and friction of activities."[218] The new movement was "taking over in the largest measure, these hygienic and medical phases of physical education."[219]

Universities had various ways of organization hygiene, physical education and medical services. In 1921 the Professor of Physical Education at the Ohio State University, J. H. Nichols, conducted a survey of the health services at twenty-six institutions. He found that the "organization of this health supervision and whether it should be incorporated in the department of physical education and hygiene, seems to have been solved in almost as many different ways

[215] Wallace F. Elliott, "Positive Health," *The Michigan Chimes* 3 no. 2(November, 1921):21-22.
[216] John Sundwall, "The Interrelationship Between Physical Education and the Students' Health Service," APER 26 no.4 (April, 1921):177.
[217] Ibid., 177.
[218] Ibid., 176.
[219] Ibid., 177.

as there are institutions."[220] In twenty-three institutions, there was a provision of health supervision. In ten institutions, it was separate from physical education; in eleven it was a branch of the department of physical education and hygiene. One had supervision handled by the university hospital and another by a special committee.[221] Physical educators, however, likely saw much of their authority in hygiene and medicine taken away. At the 1917 meeting of the Middle West society of Physical Education and Hygiene, the central theme was "The Opportunity of the Physical Educator in Health Supervision," indicating that physical educators were uncertain how to deal with these developments.[222]

College hygiene also received support and funding from the federal government for a short time during and after World War I. The 1918 Chamberlain-Kahn Act was concerned with social hygiene. It created a division of venereal disease within the Bureau of Public Health and the United States Interdepartmental Social Hygiene Board. The purpose of the latter was to police and regulate prostitution in military areas, and allotting money to selected colleges, universities and organizations to promote social hygiene education and medical, sociological and psychological research on venereal disease.[223] From 1919-1920, the USISHB, under the authority of prominent physical educator Thomas A. Storey, provided funding to twenty-eight college, universities and normal schools to continue work done in hygiene, and to twelve institutions for establishing a department of hygiene.[224] While concern for venereal disease was

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[220] J.H. Nichols, "The Relation of the Department of Physical Education to Health Supervision in Colleges and Universities," APER 26 no. 8(November, 1921):382.
[221] Ibid., 382.
[222] "News Notes, Program of the Fourth Annual Conference of the Middle West Society of Physical Education and Hygiene," APER 22 no.4 (April, 1917):239.
[223] *Annual Report of the Surgeon General of the Public Health Service of the United States* (Washington, D.C.: Government Printing Office, 1919), 234.
[224] Willard S. Small and Walter F. Cobb, "Report on the Development of Educational Research and Development," in *Report of the United States Interdepartmental Social Hygiene Board* (Washington: Government Printing Office): 87. Among the institutions are: the University of Alabama, University of Florida, Indiana University, State University of Iowa, Harvard University, University of Mississippi, University of New Mexico, University of Tennessee, New York State College for Teachers, New York State Normal and Training School, George Peabody

the main focus behind the funding, educators used the money broadly to support physical education and hygiene, bringing physical education within the departments of hygiene.[225]

The war helped to spur development of physical training and hygiene, yet it also supported shifts in the content of these fields. Physical training and hygiene laws passed through a majority of the states during the war and the following decades, insuring that young people obtained some sort of physical activity and medical examination. However, physical training moved closer to games and athletics, while hygiene took on the medical role of physical training work. This development happened for several interrelated reasons: fewer doctors were becoming physical educators, likely because of the reformation in medical training in America; a new generation of physical educators supported play and athletics; the army had supported universal, mass athletics and likely influenced this development in colleges; the federal government funded hygiene departments in numerous colleges and universities through the United States Interdepartmental Social Hygiene Board; student health services were created to offer more services to college students, and were often aligned with hygiene departments.

Biological engineering did survive in certain institutions where physical educators were doctors, took anthropometrical measurements or physical examinations and sought to prescribe training. Research in human development and human capacity remained a concern for physical educators, and would inspire future research in kinesiology. Questions about standards of development, and the stuff of human ability, drive, and power, and simple definitions of health had inspired early physical educators and continued to inspire those within the field.

College for Teachers, Wisconsin State Normal School, Cornell University, University of Cincinnati, Colorado State Teachers' College, Michigan State Normal School, Women's Medical College, Tuskegee Normal and Industrial Institute, University of Mississippi, State Teacher's College (Missouri), University of Nevada, State Normal School (Oswego, NY), University of Oregon, Reed College, University of Pennsylvania, University of South Carolina, Northern Normal and Industrial School (S. Dakota), Fisk University, University of Utah, Hampton Normal and Agricultural Institute, Washington State Normal School.

[225] Ibid., 92-111.

Upon his retirement in 1920, Dudley Sargent dealt with the field's imperative questions in a speech before his colleagues. He recounted his early research in the correlation of height and weight, and claimed that they were still relevant: "Today our educators are feeling around in the air for some standard of development…I am looking for those things to be rediscovered which I worked out over thirty years ago." Defining health had been a topic of conversation that evening. Sargent stated that while he did not have disease "functionally I am not worth a rap. Health, as someone has said, is the ability to do all things proper to the human body in the most perfect manner possible. To *do* all things possible—not to be negative, but simply to be a positive factor. I think this is a very good definition of health." He continued to support the prescribed exercise which was the centerpiece of his biological engineering. "One of the crying needs of the hour," Sargent concluded, "is that all the members of this organization should be so thoroughly posted on the different phases of physical education that they may be able to recognize their physiological value and prescribe and advise them when and where they are most needed, as an intelligent physician would use his knowledge of different medicines and health agents. To condemn a thing simply because it is old or to recommend it simply because it is new, is not the best way to advance our cause." He urged the group not to forget "the most fundamental thing of all—that is, all-around *muscular exercise.*"[226]

[226]Dudley A. Sargent, "Informal Address Given at the Banquet, New York Convention," APER 25 no. 8 (November, 1920):364-365. [his italics]

Conclusion

Luther Gulick was known to be argumentative. He was known to fight for his beliefs, to lead in new fields and let others handle the details. When it came to his idea of biological engineering, he was indeed exploring new terrain. Gulick was not concerned with how much society could get out of people, but with how much people could get out of life. As a "missionary for health" he wanted people to not only live efficiently—healthy and well—but to live vividly—to feel, experience, and enjoy. This view of health contrasted greatly with what Gulick and other health promoters saw around them. Life in the late nineteenth century had sped up and technology had taken away much of the world's muscular work. Like George Beard, Gulick and Sargent believed modern life was making people nervously exhausted.

During this era, the nervous system was very important in conceptualizing mental and physical health. The nerves had an influence on the brain and the body, and were also connected with a limited amount of energy within the individual. Neurologists experimented with various therapeutic treatments to strengthen the nerves. Similar to biological engineers, their therapies were types of individualized regimens. They wanted to build up the body of the neurasthenics and teach them how to live. Likewise, to prevent neurasthenia children had to develop proper habits to conserve nervous energy and be taught how to live. Thus, physical educators wanted to train muscles and nerves to affect the will.

Sargent found that one of the biggest threats to health was competition. Modern life was too demanding; striving in certain ways was making people ill. Students of various ages worked too diligently to obtain high grades and ranks and developed poor stature, weakness and nervousness. Athletes were pushed by coaches into certain sports and particular positions, and

pressed too much for victory. They developed deformed bodies subject to disease and were liable to suffer nervous collapse. Both groups lacked balanced, and both needed Sargent's system of biological engineering to ensure a proper balance. In measuring his students he hoped to guide them towards their individualized path to a balanced life, embodied in their physique. He spent decades thinking about what this actually meant. What was the proper standard? What was the "unknown equation" which made people excel, live vividly and with vitality?

Sargent's system was too costly and time-consuming for America's public schools. Various advocates waged battles over which systems to use within the nation's growing public school systems. For youth, games and play grew in popularity in the 1890s. Yet biological engineers, in declaring concern for the nervous system, wanted to guard against unbridled competition in schools. The focus on play, however, would support the growth and spread of athletics in schools as well as colleges and universities.

Since it was difficult to conduct scientific physical training in public schools, biological engineers advocated for hygiene initiatives, joining ranks with boards of health that were conducting medical inspections for students for contagious disease. In school hygiene, biological engineers saw many ways to promote student health. Directors of Physical Training like Luther Gulick took charge of not only physical education but of hygiene. They found that public schools posed some of the same problems of weakness and nervousness, and some new ones defined as remediable defects.

Biological engineers wanted to raise a standard but did not, and could not, standardize people. Standards and practices varied and many people would not follow their advice. The reactions of the subjects of biological engineering illustrate a marked theme of not wanting health activities and procedures mandated by school or local authorities. In colleges many

students preferred athletics to Sargent's system and shunned physical education requirements. Sargent realized this and hoped students would channel the spirit of competition into his new inomotor training device and into competitive strength and ability tests. Support for intramural sports in the 1910s also illustrates this trend towards play for everyone. Although Sargent knew that, physiologically, exercise did not have to be fun for it to be beneficial for physical and mental health, he realized that most people were not motivated to exercise by a higher sense of duty to oneself.

Within school hygiene, efforts to change the health standards of youth also faced similar problems. First, there was a problem of defining actual standards of health and defect, which undermined the power and expertise of medical authorities. Secondly, many parents did not abide by the prescriptions of medical inspectors, which led to great frustration, the hiring of nurses to visit homes, and the calls for greater power to impel treatment.

The first year that remediable defects were examined in New York City schools, chief medical inspector John J. Cronin was shocked by poor nutrition, poor vision and adenoids. He particularly linked these defects to children that were labeled backwards and feeble-minded, following many of the medical ideas of the time. His optimism about curing these conditions led him to conduct operations within the school, which was unprecedented. According to S. Josephine Baker, it was done in an inhumane manner, causing fear in the immigrant neighborhoods, and leading to the adenoid riot. This event was seen as an immigrant protest of assimilation, but it was also fear of a new medical procedure that had been done on school grounds. It is also an amplified example of a general lack of cooperation in many districts and classes that attempted medical inspection.

Cronin's work was praised through many circles for its stunning results. Yet, others realized it was a fad and that deviance had been medicalized. Gulick called for a new hygiene department within the Board of Education to take control of medical inspections away from the Board of Health. He wanted inspection to be closely tied to the schools and teachers, not outside authorities, in order to investigate the mental implications of health problems. He also pointed to social and environmental concerns in student intellectual capacity, rather than a strict biomedical model, distancing himself from those who strictly equated physical defect to mental defect. Furthermore, in 1908 he left the city school system to work for the newly-founded Russell Sage Foundation, which focused on social research.

During World War I, the poor health statistics produced by the draft gave biological engineers a chance to tell the population that they had been too complacent and should have heeded their warnings about the poor health of American youth. The Army employed physical training en masse in hope of getting everyone involved in training and recreation. Moreover, Gulick and others expressed the benefits of exercise for the shell-shocked minds in addition to bodies. The Interdepartmental Social Hygiene Board promoted college hygiene, which accelerated the growth in health services and pushed the medical authority away from physical education and into hygiene.

Compliance had always frustrated the biological engineers. During World War I, Sargent became involved with the drafting of state physical training laws. He realized that he could not mandate systems of training, even his own system, and that it was an achievement just for state governments to provide funding for physical education and hygiene. Those involved in school hygiene also knew that they had not convinced parents to comply and that many of their

prescriptions had become unheeded suggestions. Laws were passed for inspection, but could not compel treatment for nonlife-threatening illness.

Many of these developments in physical education and hygiene continue into the 1920s and 1930s. Intercollegiate sports became increasingly institutionalized and professionalized while programs for student health services continued to develop. The role of the physical director was increasingly severed from hygiene by new departments for health services and hygiene. In a 1929 study of directors of physical training at men's colleges, only 7% held medical degrees, as compared with 65.2% twenty years prior, and 81% served as head of athletics.[1] A 1927 study of women's state universities found that education experts sought to give authority for physical examination to the student health service.[2] The researcher found that "expert opinion would appear to be opposed to the older plan of concentrating health teaching, health supervision, and physical education for men and women in one department, chiefly because of the impossibility of training one individual in all phases of the program." Such an individual would have been trained as a biological engineer. Instead they found that "[A] plan of interdepartmental administration appears especially desirable in the case of health supervision."[3]

Medical inspection laws continued to be passed through state legislatures, and were established in 39 stated by 1935. However, parental noncompliance remained a problem for medical inspectors. Four states sought to compel parents in various ways to correct defects: Colorado law referred parents to child protective services; Maine fined parents; South Carolina

[1] Harry Alexander Scott, *Personnel Study of Directors of Physical Education for Men in Colleges and Universities* (New York: Bureau of Publications, Teacher's College, Columbia University, 1929), 11, 40-41.
[2] Georgia B. Borg, *Organization of the Required Physical Education for Women in State Universities* (New York: Bureau of Publications, Teacher's College, Columbia University, 1929), 128.
[3] Ibid., 129.

fined or jailed them for up to ten days; and New Jersey punished parents as disorderly.[4] Yet, for the most part, a 1935 study still found "very little legislation has been enacted to compel the parents' attention to the correction of the defects of pupils. It seems to be at this point that the health service breaks down in many communities."[5]

In a 1934 study of New York City school hygiene practice, the federal American Children Health Association painted a picture strikingly similar to the early practice of medical inspection. Even though tonsils had seemed to gain prominence over adenoids, the throat continued to figure greatly in examinations, in addition to vision, hearing, teeth, general nutrition, and lice. The perennial problem of defects going uncorrected remained, but ACHA blamed parents for a third of the untreated defects, and blamed the school administration for the remainder.[6] They also pointed to a lack of facilities for treatment and a lack of standardization in judging defect, particularly nutrition and tonsils. They found that "most of the standards in current school health programs have an arbitrary basis."[7]

Tonsils posed one of the greatest concerns for medical inspection and ACHA investigators found that out of the 1,000 eleven year olds studied, 61% had already had their tonsils removed. Moreover, they discovered that tonsillectomy was indiscriminately recommended by the inspectors. If children were given three medical inspections, the organization estimated that 94% of them would have been recommended to have tonsillectomy by their twelfth birthday. They found that "judgments made by school medical inspectors based on visual inspection without knowledge of previous history lead to wholesale recommendations

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[4] Everett Conant Preston, *Principles and Statutory Provisions Relating to the Recreational, Medical and Social Welfare of the Public Schools* (New York: Bureau of Publications, Teacher's College, Columbia University, 1935), 69-70.
[5] Ibid., 70.
[6] American Child Health Association, *Physical Defects; The Pathway to Correction. A Study of Physical Defects Among School Children of New York City* (New York, 1934), 32, 113.
[7] Ibid., 9.

for tonsil follow-up." They also held nurses spent too much time with these follow-ups and neglected vision and nutrition. Furthermore, outside physicians opposed the operation in 75% of referred cases.[8] It seems that the legacy of adenoids still had an impact upon the school hygiene field. While Gulick and Ayres criticized this convenient solution in 1908, others continued to maintain the efficacy of the operation. While Gerald Grob has connected the rise in tonsillectomy in the twentieth century to the focal theory of infection, even into the 1950s, many throat specialists and other physicians still emphasized the importance of adenoids and tonsils in cases of aprosexia and poor disposition.[9]

In the 1910s Gulick had promoted the use of the state to champion and fund public health campaigns and research.[10] Others in the field called for the provision of free services for schoolchildren. Today, an increased focus on preventive medicine has been supported by the federal government. The Affordable Care Act bolsters coverage for preventive health care measures, and First Lady Michelle Obama's health initiatives concentrate on improved nutrition and physical activity for youth and adults. These constructive and preventive measures and campaigns are certainly a step toward forward-thinking health care practices.

However, many of the problems that concerned biological engineers remain or have seemingly worsened over the course of a century. Neurasthenia remains a perennial problem which is today expressed as anxiety, depression and chronic fatigue syndrome.[11] Physical

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[8] Ibid., 94.
[9] Gerald N. Grob, "The Rise and Decline of Tonsillectomy in Twentieth-Century America," *Journal of the History of Medicine and Allied Sciences* 62 no. 4 (October, 2007): 383-421; Samuel D. Lipton, "On the Psychology of Childhood Tonsillectomy," *The Psychoanalytic Study of the Child* 17 (1962):398-491.
[10] "Statement of Dr. L.H. Gulick," *Proposed Department of Public Health, Hearing Before the Committee on Public Health and National Quarantine, United States Senate* (Washington: Government Printing Office, 1910): 96-101; Luther H. Gulick, "The Social Engineer in the Field of Public Health," *Proceedings of the Fifth Annual Meeting of the Association of Life Insurance Presidents* (New York, 1911):67- 73.
[11] S.E. Abbey and P.E. Garfinkle, "Neurasthenia and Chronic Fatigue Syndrome: the Role of Culture in Making a Diagnosis," *American Journal of Psychiatry* 148 (December 1991): 1638-1646; Andrea Tone, *The Age of Anxiety : A History of America's Turbulent Affair with Tranquilizers* (New York: Basic Books, 2009).

educators were particularly prescient about the effects of technology on American health. Sargent had spoken of how people could earn a living in the late nineteenth century by polishing a knife or watching to ensure people paid a fee; now it can be done by tapping computer keys. People live increasingly sedentary lifestyles, and even youth have significant "screen time" spent on computers, watching television, and playing video games.[12] The rates of obesity and childhood diabetes continue to swell in most cities, despite physical education laws.[13] Sargent would be dismayed by the glorification of elite athletes, injury from overtraining athletic youth, and the decline in required physical education on college campuses.[14]

The current controversial school disease is Attention Deficit/Hyperactivity Disorder. According to the Center for Disease Control, the number of Americans ages four to seventeen diagnosed with ADHD was 7.8% in 2003 and 9.8% in 2007.[15] Ritalin is prescribed as early as four years old to cure the problems of childhood inattention, which were earlier conceived as aprosexia and thought to be related to the presence of hypertrophied adenoids.[16]

Adenoidectomy, it seems was the first step towards changing brain chemistry at a time before successful pharmaceuticals. Since adenoids were thought to inhibit breathing, they were thought to block air flow and possibly affect the levels of oxygen in blood entering the brain. While people began to lose faith in the surgeries, and Freudian psychiatry created a transition away from the biomedical conception of mental illness towards a psychosocial framework, the

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[12] Susan B. Sisson, Stephanie T. Boyles, Birgitta L. Baker and Peter T. Katzmaryzk, "Screen Time, Physical Activity and Overweight in U.S. Youth: National Survey of Children's Health 2003," *Journal of Adolescent Health* 47 (2010): 309-311.
[13] Albert P. Rocchini, "Childhood Obesity and Diabetes Epidemic," *New England Journal of Medicine* (March 14, 2002):854-855.
[14] Joel S. Brenner, "Overuse Injuries, Overtraining and Burnout in Child and Adolescent Athletes," *Pediatrics* 119 no.6 (June 2007):1242-1245.
[15] "Increasing Prevalence of Parent- Reported Attention-Deficit/Hyperactivity Disorder Among Children—United States, 2003 and 2007," *Morbidity and Mortality Weekly Report* (November 12, 2010): 1439-1443.
[16] See Julie Magno Zito, Daniel J. Safer et.al. "Trends in the Prescribing of Psychotropic Medications to Preschoolers," *Journal of the American Medical Association* 238no.8 (February 23, 200): 1025-1030.

biomedical model never disappeared and began to gain greater prominence by the 1950s.[17] At this point, childhood hyperkinesis, or hyperkinetic impulse disorder, became classified. Ritalin was created in the mid1950s and its use for children was approved by the FDA in 1961.[18] Similar to earlier concerns about adenoidectomy and the medicalization of deviance, many modern writers have voiced passionate criticism of overdiagnosis and overmedicating of children and pointed to the social and cultural conditions at work in children's lives, or the social construction of disease.[19] A number of critics of current psychiatry are concerned about narrowing the field of human behavior and medicalizing eccentricity, personality and formerly normative emotional ranges.[20] Those with more moderate views have reaffirmed that mental health problems are very serious and drugs do help in youth, yet are still critical of many practices of pharmaceutical companies.[21]

Ironically, adenoids and inattention have been linked once again. Scientists at the National Institute of Health have been investigating whether the presence of hypertrophied adenoids and tonsils can be an underlying cause of ADHD. They have been focusing on poor

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[17] Edward Shorter, *A History of Psychiatry: From the Era of the Asylum to the Age of Prozac* (New York: John Wiley & Sons, 1997).

[18] Peter Conrad, "The Discovery of Hyperkinesis: Notes on the Medicalization of Deviant Behavior," *Social Forces* 23 no1. (October 1975):13-14. Also see Ilina Singh, "ADHD, culture and education," *Early Child Development and Care* 178 no.4 (May 2008): 347-361.

[19] Lawrence H. Diller, *Running on Ritalin: A Physician Reflects on Children, Society, and Performance in a Pill* (New York, N.Y.: Bantam Books, 1998); Peter Roger Breggin, *Talking Back to Ritalin: What Doctors Aren't Telling You About Stimulants and ADHD* (Cambridge, Mass: Perseus Pub, 2001); John Rosemond and Bose Ravenel, *The Diseasing of America's Children* (Nashville: Thomas Nelson, 2008). For foundational works see: Michel Foucault, *Discipline and Punish: The Birth of the Prison* (New York: Pantheon Books, 1977); Thomas Szasz, *The Myth of Mental Illness* (New York: Harper and Row, 1974).

[20] Allan V. Horwitz and Jerome K. Wakefield, *The Loss of Sadness: How Psychiatry Transformed Normal Sorrow into Depressive Disorder* (Oxford; New York: Oxford University Press, 2007); Christopher Lane, *Shyness: How Normal Behavior Became a Sickness* (New Haven: Yale University Press, 2007).

[21] Judith Warner reviews much of the current literature on medicating children and takes a moderate view. She writes that many children have very serious mental problems that are overlooked by many critics of psychiatry, and that in the past, many of these children were less visible. Judith Warner, *We've Got Issues: Children and Parents in the Age of Medication* (New York: Riverhead Books, 2010).

sleep in children, and have seen that this could be promoted by adenoids.[22] Perhaps this type of research will illustrate possible health deficiencies, practices and environmental or social conditions which might contribute to childhood inattention. If this research pushes toward a more holistic model of human development, then it is a welcomed improvement.

[22] Nicholas Bakalar, "Tonsil-Adenoid Surgery May Help Behavior, Too," *New York Times* 4 April 2006; Kate Murphy, "Well: Attention Problems May Be Sleep Related" *New York Times*, 16 April 2012. http://well.blogs.nytimes.com/2012/04/16/attention-problems-may-be-sleep-related/?src=me&ref=general.

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