


An “American Galton”: Frederick Adams Woods and the eugenic foundations of historiometry

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EN Abstract. This paper explores the life and work of Frederick Adams Woods (1873–1939), a prominent yet neglected figure in Progressive Era eugenics. Known as the “American Galton,” Woods advanced an uncompromising hereditarianism and developed historiometry, a quantitative method aimed at demonstrating the primacy of heredity in shaping intelligence, morality, and historical outcomes. His studies of European royalty and his theory of “alternative inheritance” sought to refine Galton’s approach while reinforcing eugenic claims. While his influence faded as environmentalist perspectives gained ground, Woods remains significant as both a leading hereditarian voice and an early advocate for quantifying history as science.

Keywords. Frederick Adams Woods, eugenics, historiometry, European nobility.

JEL Code: B31, B15, B16, N33.

ES Un “Galton Americano”: Frederick Adams Woods y los fundamentos eugenésicos de la historiometría

ES Resumen. Este artículo explora la vida y obra de Frederick Adams Woods (1873–1939), una figura destacada, aunque olvidada, de la eugenesia de la Era Progresista. Conocido como el “Galton americano”, Woods promovió un hereditarismo inflexible y desarrolló la historiometría, un método cuantitativo que intenta demostrar la primacía de la herencia en la configuración de la inteligencia, la moralidad y los resultados históricos. Sus estudios sobre la realeza europea y su teoría de la “herencia alternativa” buscaron refinar el enfoque de Galton, a la vez que reforzaban las reivindicaciones eugenésicas. Si bien su influencia se desvaneció a medida que las perspectivas ambientalistas ganaron terreno, Woods sigue siendo relevante como una voz destacada en el campo de la herencia y uno de los primeros defensores de la cuantificación de la historia como ciencia.

Palabras clave. Frederick Adams Woods, eugenesia, historiometría, nobleza europea.

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PT Um “Galton Americano”: Frederick Adams Woods e os Fundamentos Eugênicos da Historiometria

PT Resumo. Este artigo explora a vida e a obra de Frederick Adams Woods (1873–1939), uma figura de destaque, embora esquecida, na eugenia da Era Progressista. Conhecido como o “Galton Americano”, Woods promoveu um hereditariedade intransigente e desenvolveu a historiometria, um método quantitativo que busca demonstrar a primazia da hereditariedade na formação da inteligência, da moralidade e dos resultados históricos. Seus estudos sobre a realeza europeia e sua teoria da “hereditariedade alternativa” buscaram refinar a abordagem de Galton, ao mesmo tempo em que reforçavam as alegações eugênicas. Embora sua influência tenha diminuído à medida que as perspectivas ambientalistas ganharam força, Woods permanece relevante como uma voz de destaque no campo da hereditariedade e um dos primeiros defensores da quantificação da história como ciência.

Palavras-chave: Frederick Adams Woods, eugenia, historiometria, nobreza europeia

JEL classificação: B31, B15, B16, N33.

Sumario: 1. Introduction. 2. Biographical Summary. 3. Heredity, Mental and Moral. 4. Historiometry, and European royalty redux. 5. Heredity or Environment? Objective Evidence. 6. Alternative inheritance. 7. Eugenics and race. 8. Conclusion. References.

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1. Introduction

Progressive Era eugenics was protean in its manifestations and inherently pluralistic. It not only cut across traditional ideological barriers, but it found expression in a myriad of variants: from a somehow moderate concern over the quality of population to an outright biological determinism which left little or no space at all to the influence of the environment. Similarly, the proposed measures spanned a spectrum from legislation mandating that couples obtain a physician's certificate confirming the absence of hereditary conditions to the promotion of sterilization or institutional segregation of those individuals classified as "feeble-minded," "idiotic," "epileptic," or otherwise "unfit," with the intent of preventing their reproduction or integration into the general population. Equally significant, the eugenics debate was pluralistic in another important connection. Aside from well-known and outspoken eugenicists such as Charles B. Davenport, Lothrop Stoddard, or Harry H. Laughlin, to mention but a few, an array of other figures from virtually every field of knowledge contributed to the debate, oftentimes later disappearing from our collective memory. This is the case of Frederick Adams Woods, to whom we turn our attention to this paper.¹

Why is Woods worthy of a more detailed study? We propose (at least) three compelling reasons. First, during his lifetime and period of intellectual productivity, Woods was a prominent and influential figure—not in any sense a "minor" contributor, but rather a central force in the study of heredity and eugenics. In this connection, suffice it to mention that in his celebrated *The Passing of the Great Race*, an authority in the field such as Madison Grant (1922: 279) praised Woods as a leading follower of Galton in America. Woods' influence extended well beyond academic circles, as he was frequently cited in the national press and widely recognized as an authoritative voice on these subjects.

Second, Woods in his early academic career was part of a network of eugenicists clustered at Harvard.

The group was so numerous and active that Harvard has (justly) gained the epithet of "Brain Trust of American Eugenics."² Here, Woods was well-situated in an environment of like-minded academics. Among those at Harvard associated with the eugenics movement were A. Lawrence Lowell (president from 1909-1933), Charles William Eliot (president emeritus), economists Frank W. Taussig, Thomas Nixon Carver, and William Z. Ripley, botanist Edward M. East, zoologist William Ernest Castle, psychologist Robert M. Yerkes, psychologist William McDougall, neuropsychologist Elmer Ernest Southard, zoologist Charles Benedict Davenport (founder of the Genetics Record Office), anthropologist Earnest Hooton, and climatologist Robert DeCourcy Ward.³

Third, although Woods came to be known as the "American Galton," he was actually more critical than sympathetic of the British statistician. Woods embraced hereditarianism in its extreme form but found Galton's methodology to be biased and incomplete. As an alternative he proposed what he termed historiometry, an extended statistical examination of various historical sources all for the purpose of establishing the absolute primacy of heredity over environment in effecting both intelligence and morality.

2. Biographical Summary

Frederick Adams Woods was born 29 January 1873 in Boston, Massachusetts, the son of Solomon Adams Woods, purportedly a descendant of Henry Adams, and Sarah Catherine Watts.⁴ In 1890 he entered the Massachusetts Institute of Technology but "found little of interest in two years of elementary work with not much biology" (Bigelow 1940: 162). In 1894 he entered Harvard Medical School, graduating in 1898 (MD). While there he studied with the anatomist

¹ In this paper we mainly (although not exclusively) focus on Woods' contribution, leaving aside the several external factors which led to the broad acceptance of eugenics during the so called American Progressive Era, the years between 1880 and 1920. Several studies have explored in detail the success of eugenics during that period—as an evolving discipline (Kevles 1985); as a policy for social reform (Leonard 2016); in popular culture and literature (Nies 2002); in jurisprudence (Cohen 2016); among religious leaders (Rosen 2004); and in its relationship to then current debates on feminism (Rensing 2006), health reform (Engs 2003), and immigration (Okrent 2019).

² See Luca Fiorito and Cosma Orsi (2017) and Fiorito and Massimiliano Vatiello (2023).

³ Among the group of eugenicists who gravitated around Harvard, Woods appears to have maintained personal and professional ties only with Davenport. In 1914, both were appointed to the International Eugenics Committee, which was responsible for determining the time and location of each International Eugenics Congress. That same year, they co-authored a paper with Adolf Meyer on the activities of the Eugenics Research Committee of the American Genetic Association (Woods, Meyer, and Davenport 1914), of which they were also members. Davenport and Woods corresponded frequently on various matters (Morgan 2024), and following Woods' death, Davenport published an obituary in *Science* (1939).

⁴ Biographical information is derived primarily from Davenport (1939) and Bigelow (1940).

Charles Sedgwick Minot, assisting him with his genetic experiments on guinea pigs and rabbits.⁵

For the 1898-99 academic year Woods was appointed Instructor in Histology at the Harvard Medical School (Harvard University 1899: 25); for the 1900-01 academic year he was named Assistant in Embryology at the Medical School, as well as Instructor in Comparative Histology in the School of Veterinary Medicine (Harvard University 1901: 28, 30).

Woods secured an appointment at MIT as Lecturer in Histology in 1903, lecturing in comparative anatomy, embryology, microscopic anatomy, and theoretical biology.⁶ During his career Woods published two major books that granted him national notoriety. In 1906 he published *Mental and Moral Heredity in Royalty: A Statistical Study of History and Sociology*, a study of the European royal families. This was followed in 1913 by *The Influence of Monarchs: Steps in a New Science*, employing the method of what he termed historiometry in extending his analysis, finding in them much the same results as in his earlier study.

In 1915 he published, with Alexander Baltzby, *Is War Diminishing?* That same year he was elected Fellow of the American Academy of Arts and Sciences. Following the outbreak of the Great War, he moved to Washington DC, to become editor of the *Journal of Heredity*, contributing many of the articles between October 1918 and June 1919. It was then that he also worked at the Office of Foreign Seed and Plant Introduction at the Department of Agriculture.

Woods served on the American Consultative Committee at the First International Eugenics Conference held at the University of London in 1912.⁷ He was a member of the American Breeders Association (later the Genetic Association), Chair of the Committee on Eugenics, and in 1922 became a member of the National Research Council. In July 1924 he was elected president of the Eugenic Research Association (*Eugenical News* 1924, p.57). He served as a member of the advisory council of the Eugenics Society of the United States of America (1922-1925) and its successor, the American Eugenics Society (1925-1935). Among his other accolades are American Society of Naturalists, American Genetic Association, Galton Society, American Historical Association, and the New England Historic-Genealogical Society (*Who's Who in America* 1928-29: 2269-2270).

On 3 July 1918 Woods married Ellen Payson, from whom he was later divorced;⁸ in 1924 he married his second wife, Baroness Marie Thérèse de Lebzelter-Collenbach of Austria, and in 1927 moved to Rome.

While there he was named vice-president of the International Congress for Studies Regarding Population Problems (1931).

Woods died 5 November 1939 in Rome of chronic alcoholism and nephritis.⁹

The Adams Woods Fellowship at Harvard was established by Woods in 1909 “for the study of heredity in American history,” providing a stipend of \$400.00 (Harvard University 1910: 79).

3. Heredity, Mental and Moral

Woods' writings focused almost exclusively on demonstrating the superiority of heredity over the environment in explaining mental and moral development. In his 1906 *Mental and Moral Heredity in Royalty: A Statistical Study in History and Psychology*, initially published in nine parts in *Popular Science Monthly* (1902-1903), Woods expressed his desire “to contribute something to our knowledge of the science of history,” accomplishing this using statistical methods. In so doing, in being “impartial, cold, and statistical,” history may finally be elevated to the status of a science. “Until history has been subjected to statistical analysis, let us withhold our opinion as to the possibility of arriving at positive conclusions in this most difficult and perplexing field of inquiry” (Woods 1906: iii).

In this work, Woods claimed his objective was “to determine the proportionate share taken by heredity in the formation of mental and moral life.” The importance of the task could not be understated, as many social problems, “like the negro question, self-government for the Filipinos, and practical philanthropy, await the guiding finger of science on this very cardinal point. Are our natures predetermined; or will fine and fit surroundings, just laws, hygiene, education, or, in other words, equality of opportunity, bring about the long looked for Utopia?” (Woods 1906: vi).

Woods began by contending that the methods of Francis Galton and Alphonse de Candolle were not valid in studies attempting “to prove the hereditary nature of genius,” arguing that such methods were not “scientific,” but rather were “social.” By merely perusing biographical dictionaries of distinguished men and tracing their genealogies, “they were liable to the conscious or unconscious selection of cases which would prove their point.” Galton, for one, noted Woods, acknowledged that, in his study of literary men, “it is so difficult to say who is eminent in literature and who is not.” Galton “made use of no system in the selection of his cases, and one might say he showed a preference for those who had eminent relatives.” A second objection related to the question of family patronage, largely ignored by Galton – the suggestion “that patronage, education, encouragement, and example, are the real causes why sons frequently emulate their fathers, may be well-contended, and the influence that makes the second judge by the same name sit on the bench may be social as much as physiological,” an objection that Woods proudly proclaimed “cannot be raised against the evidence” that he had amassed (Woods 1906: 7-8). His own method “has been to take individuals merely by blood

⁵ Among his early writings was “Mendel's Laws and Some Records in Rabbit Breeding” (1903).

⁶ His courses included Microscopic Anatomy (1903-4), Comparative Anatomy and Embryology as well as Microscopic Anatomy (1904-5). He taught the advanced course in Theoretical Biology beginning in the 1907-8 academic year. From the 1909-10 academic year on, it appears as though Woods taught no classes.

⁷ The Committee included David Starr Jordan (President), Charles B. Davenport, Alexander Graham Bell, William Ernest Castle, Charles R. Henderson, Adolph Meyer, Alois Ferdinand Hrdlička, Vernon Lyman Kellogg, Herbert John Webber, and William Lawrence Tower (*Problems in Eugenics* 1912: vii).

⁸ Ellen Woods filed for divorce, “charging that her husband was cruel to her on Aug 6, 1918, and also with gross and confirmed habits of intoxication” (Boston Globe 1919: 11).

⁹ Report of the Death of an American Citizen, American Foreign Service, Rome, Italy, 13 November 1939.

relationship, and include every person about whom anything can be found." By this method, he claimed to "have escaped any selection of cases which illustrate a theory and at the same time know the exact blood relationship of every person to every other person." Against Galton, who "purposely avoided royalty, because ... the qualities that make a great king are not the same as those which form genius," Woods saw in his work "no drawback, since here I have gone with more pains into the question of intellect and actual achievements, and a man is not given the same rank for being a wise and successful ruler than he is for great and brilliant creative achievements" (9).

In his survey of the royal lineages and hereditary degeneracy and moral depravity, Woods proceeded to demonstrate by exhaustive research of all available records, but principally from biographical dictionaries, the mental and moral status of 832 individuals. From the information obtained, everyone was graded on a scale from 1 to 10 for both mental and moral traits (Woods 1906: 18-46). The fact that distribution of the individuals under scrutiny amongst the grades corresponded "remarkably well" to a normal frequency curve was seen by Woods as indirect evidence of the correctness of the grades assigned (19, 32).

Woods identified what may be viewed as two polar exemplars. In the Saxe-Coburg-Gotha line, "the assumption of high rank and power and the consequent opportunity for ease and luxury do not in the least tend to degeneracy of the race when the good qualities are kept up by marriages with stocks of equal value and no vicious elements are introduced into the breed." These conditions paralleled those in Prussia and Portugal, the latter a case in which "for twelve generations nearly every sovereign had all the wisdom and strength required of a ruler" (Woods 1906: 62-63). In the case of Spain and France, however, the situation could not be more different. With respect to France, "the French royal family was almost continually in-bred with the great group of neuroses belonging originally to the Spanish house" (112). As to Spain, "[i]f the makers of royal marriages had wished to perpetuate the degeneracy, they could not have done better" (158). Russia fared no better. Concluding, Woods opined that "Spain, France, and Russia give us most of the degenerates. In these countries the individuals are closely associated in blood with insanity, epilepsy, or other psychoses. This is itself a coincidence to be explained by those who doubt that morality is much the result of inheritance" (290-291).

That heredity appeared as "almost the entire cause for the mental achievements" of the subjects of Woods' study, thus ruling out any significant role for the environment or free-will, Woods regarded as "practically perfect results derived from what might be expected from heredity."¹⁰ While considering such

environmental influences as education, political intrigues, and childhood neglect, and acknowledging the differential conditions among the royals, Woods nonetheless determined that whatever advantages or disadvantages may have been experienced, these "must have always been of an accidental character, depending on various causes, and their distribution would occur largely at haphazard throughout the entire number of collected persons ... and could not account for the great group of mediocrity and inferiority, like the houses of Hanover, Denmark, Mecklenburg, and latter Spain, Portugal, and France." Yet this educational advantage or lack thereof seems from the evidence "to have introduced no error from expected inheritance, either in the study of separate families or in the more exact figures drawn from larger groups" (Woods 1906: 283-284). Thus was Woods "forced to the conclusion that all these rough differences in intellectual activity which are susceptible of grading on a scale of ten are due to predetermined differences in the primary germ-cells" (287).

With respect to the moral qualities, while acknowledging the difficulty in attempting to assess such, Woods nonetheless firmly believed that "the results obtained speak no less clearly and unequivocally for heredity as the major cause; though no one supposes that moral education and training are without some effect on the formation of character" (Woods 1906: 287). About the latter, he noted, "Home influences and the atmosphere of their life at court would be better in those families where the individuals have had the greatest number of close blood relatives of the better type." Additionally, "the degenerates, whom we have proved to have had the greatest number of relations in the low grades, lived in degenerate courts, and were consequently subjected to vitiating influences." As a result, Woods admitted that "thus far we cannot separate heredity from environment in the formation of moral qualities" (289-290). Yet he proceeded to do so, arguing "that, even in the moral side of character, inherited tendencies outweigh the effects of surroundings, for the reason that, applied to all the characters, heredity is able to explain almost every one, - there being but a slight error from the expected, - while environment will only explain a relatively smaller number." Therefore, "I think we can conclude from this that in each individual, inheritance plays, in the formation of morality, a force greater than 50 per cent" (294).¹¹

Woods provided evidence showing that the average number of eminent relatives in the case of individuals in grade 10 is more than four times that for individuals in grade 6, when the first two degrees of kinship are considered, and nearly three times when only the first degree of kinship is taken into consideration. This led Woods to conclude, in accord with Galton, that the first degree of kinship is one and a half times as potent as the second (Woods 1906: 267).

¹⁰ To substantiate his claim as to the primacy of nature over nurture Woods presented a chart indicating the number of eminent relatives - i.e., those whose grades for intellect are 9 or 10 - for each class of individuals ranked in intelligence from 1 to 10. He found that the average number of these eminent relatives for the individuals in classes 1 to 6 is approximately the same, whether one considers only the first degree of relationship or the first two degree of relationship. As one moves to grades 6 and 10, Woods continued, the average number of eminent relatives of each person rises rapidly and quite regularly. Significantly,

¹¹ The statistician G. Udny Yule concluded that "[s]uch an opinion as to the unimportance of environment seems extreme and untenable" (Yule 1906: 761). Questioning the summarization of the data, Yule opined that "[a]s a contribution to the influence of heredity on history, Mr. Wood's [sic] volume is of the first interest and must take a high rank; it is on account of its importance that it has been thought worth while to notice some points on which the conclusions stated seem open to question, or the methods to some slight improvement" (p. 762).

Woods concluded from his thorough and exhaustive study that the role of heredity was first and foremost the primary influence in the survival of the morally superior:¹²

To the minds of some, a theory of the preponderating influence of heredity is but a gloomy and pessimistic outlook. ... And yet this same view of heredity, when looked at in its bearings on the future condition of the human race as a whole, far from being pessimistic, is on the contrary an actual basis for optimism; for we have found among royal families the morally superior surviving, and in the inheritance of mental and moral excellence we see ground for a belief in the necessary progress of mankind. (Woods 1906: 303)

Referring to this work in a later essay, "Heredity and the Hall of Fame" (1913), Woods observed that, while the European "caste system counts for much, and family patronage may be thought to be at the bottom of many a public recognition of distinction," it certainly "cannot be due to anything characteristically European that so many of the great men of the older civilizations of the world are so often connected with others of the same type" (Woods 1913b: 446). An examination of the family lineages of the forty-six "pre-eminent Americans" named in the Hall of Fame upon the Hudson, while demonstrating "an extraordinary amount of blood relationships with other men not quite so celebrated it is true," nevertheless confirm they are "men in every sense entitled to the term 'eminent,' and men whose lives and achievements have added to the luster of their country" (447). His own study of European royalty showed that "[a]bout half of all the greatest rulers have been the descendants of comparatively mediocre ancestors; the other half have been the direct and immediate descendants of those as great or nearly as great as themselves." Put another way, "the vast horde (say ninety-nine per cent. of the whole) is no more likely to produce a man of genius than is the one per cent (or less than one per cent.) which, from the standpoint of eugenics, we rightly call the *crème de la crème*." This is true even of such men as Abraham Lincoln and Benjamin Franklin, "who spring from the great reservoir of the commonality." These anomalies seemed not in the least to prove an obstacle to Woods' belief in heredity, so long as such occurrences "do not occur very frequently," as they appear to be "happy combinations of qualities derived from maternal and paternal sources." While acknowledging again that the environment and even free may "play a measurable role in the determination of human fate," the results of his studies "suggest that the reliance which has been so freely bestowed on these social, institutional and metaphysical forces has been an exaggerated one" (451-452).¹³

The Anglo-Saxon race as well, according to Woods' estimates, produced more than its share of

American heroes from the Great War. Seventy-two percent of noncommissioned officers and privates, 73% of commissioned officers, and 78% of divisional brigade and regimental leaders of the 26th division (the "Yankee division") whose names and photographs were published in the *Boston Globe* had Anglo-Saxon surnames. Given the unlikelihood that as much as 72% of the division would have been comprised of those with Anglo-Saxon surnames, Woods concluded demonstrated "that the Anglo-Saxons, and particularly the Yankees and the Canadians, who resemble them in race, and the Scotch, who carry a large proportion of Anglo-Saxon names, are particularly heroic and make fine soldiers" (Woods 1919d: 332).

The publication of Alleyne Ireland's *Democracy and the Human Equation* (1921), in which Woods appears with favor, added substance to Woods' conclusions as to the relative importance of mental and moral heredity, in this case, with respect to governance. Ireland, a Fellow of the Royal Geographic Society and renowned world traveler, declared that arguments respecting the respective influences of heredity and environment "are not susceptible to further condensation," as it is unmistakably evident "that the influence of heredity greatly outweighs that of environment," a conclusion that "cannot be overstated." Should additional research into the matter "establish this hypothesis as a natural Law it would be necessary to make a number of radical adjustments in our conceptions of political agency, of education, of legal and of social responsibility" (Ireland 1921: 18-19). To Woods, any further proof would seem unnecessary: "The doctrine of heredity ties up naturally with the more aristocratic belief in the importance of the upper classes and of exceptionally great leaders who, as many investigators have proved, do actually arise in the upper classes in far greater proportion" (Woods 1921a: 206).

4. Historiometry, and European royalty redux

A new word for quantitative historical analysis

In an effort to supply precision and objectivity to the statistical analysis of "the facts of history of a personal nature," such that they "may be made to contribute to the science of eugenics," Woods in 1909 proposed a new word, historiometry.¹⁴ As these researches "stand upon the border line of the allied sciences, psychology, anthropology and sociology," the then fashionable term biometry he found wanting, as "it fails to express the primary value of this class of research, namely, elucidation of the philosophy of history for its own sake, and also fails to suggest that the work should be carried forward by the historians themselves." Historiometry then offers an alternative, as it "bears the same relation to history that biometry does to biology," and so allows "that the quantitative method may be successfully applied to historical

¹² The agricultural economist W. J. Spillman opined, "One cannot read this book without feeling that it is a tremendous argument for the application of modern science in the breeding of the ruling classes" (Spillman 1909: 517).

¹³ Woods later remarked on the place of Theodore Roosevelt in the ranking of genius in world history, esteeming him as one of the "greats" (Woods 1919c).

¹⁴ Davenport referred to historiometry as "the keynote of most of Woods's later work" (Davenport 1939, p. 608). Galton employed a similar method in his 1869 *Hereditary Genius*, but this differed from the intention of Woods.

events of a more general character" (Woods 1909c: 703-704).¹⁵

Before one can establish whether the objective methods Woods proposed are appropriate to determine historical correlation, one must at the outset first "prove that history itself, as we commonly find it in the printed records, is a sufficiently valid account of what actually happened," and second, "find proof that the objective methods correctly deal with these facts." Should it be the case that "history as we find it is in its important statements a fair representation of the truth, and if the methods of historiometry which deal with these records are also sound, then it is not difficult to prove both propositions at the same time" (Woods 1911a: 568).¹⁶ Woods concluded from a summary of previous studies that such methods as employed by the anthropometric laboratory and his own method (1906) offer

promise of at last furnishing the long-sought correct method of penetrating the tangled and perplexing jungle known as philosophy of history. This domain of thought is to-day in poor esteem among those who, as historians of the modern school, seek in documentary sources to reconstruct the past around some central theme, some individual age or nation. No wonder these careful investigators have become disgusted with the *a priori* dogmatism, the partizan spirit, the free generalizations from half truths and the eternally conflicting

conclusions. Historical philosophers, in their desire to explain everything at once, have been content to formulate theories and then pick from the totality of history, selected facts to support them. With methods highly subjective, and carrying a large personal equation they could not help but find exactly what they wished. (Woods 1911a: 574).

Although inductive scientific methods may initially progress slowly, Woods concluded, even a modest foundation of systematically gathered and organized data can expand rapidly. Each rigorously verified contribution enhances the pace of advancement, facilitating increasingly precise and reliable inquiry.

Woods' "new science of history" applied to European royalty

In his 1913 *The Influence of Monarchs: Steps in a New Science of History*,¹⁷ Woods returned to the subject of his 1906 *Mental and Moral Heredity in Royalty* with a new study, employing his new method of research. Here he attempted "the first application of the methods of historical measurement (historiometry) to the larger questions of national growth and decline" (Woods 1913a: vii).¹⁸ Indeed, should he be able to demonstrate that "the differences among the kings of history ... are in their essence caused by qualities contained in, and carried by, the germ-plasm from which they have been engendered; and if these differences among rulers have been of such transcendent importance, then the master key of history is heredity." For Woods, "the genealogical interpretation is the only correct interpretation for natural history." While acknowledging that, "in the metagenesis of human affairs, neither heredity nor personality are everything," they nonetheless "go so far towards being everything that they may well be made the first forces to be measured" (viii).

If in his *Heredity in Royalty* Woods intended to prove that the leadership abilities of European monarchs are innate and transmissible, in his second book he moved a step forward. *The Influence of Monarchs* was in fact an attempt to demonstrate a direct correlation between able leaders and favorable political and economic conditions in the country they ruled.¹⁹

¹⁵ In the accompanying bibliography, he listed the works of Havelock Ellis (*A Study of British Genius*) and Francis Galton (*Heredity Genius, English Men of Science*), among others, in addition to his own works. The psychologist Catharine Morris Cox applied the method in her study of genius (1926). Historiometry is still an accepted method of research. Dean Keith Simonton employed Woods' technique in his examination of genius, defining historiometry "as the method of testing nomothetic hypotheses concerning human behavior by applying quantitative analyses to data abstracted from historical populations." He identified a "nomothetic account" as "one that stresses universals of human behavior and ignores peculiarities of person, place, and time." This he regarded as "an obvious prerequisite of science," one that "should not be contingent on the geographical location, transhistorical period, or personal idiosyncrasies of an individual or leader. This nomothetic emphasis ties historiometry to other behavioral science methodologies, such as psychometrics" (Simonton 1984: 3-4). See also Simonton (1995, 2016).

¹⁶ In commenting on Woods' article, George H. Johnson opined, "It appears that Dr. Woods has directly opened the way to the mathematical determination of the relative importance of heredity and environment. At least we may expect a flood of new light on the subject from historiometrical investigations, and if the conclusion is different from what the author of the method anticipated it will not at all detract from the credit due him for its development" (Johnson 1911: 774-775). The chemist Charles A. Browne focused his comments on Woods' methodology: "The mathematical formula for expressing fame (F) in the terms of its components a, b, c, etc., is not $F = a + b + c \dots$, but $F = x \cdot a + y \cdot b + z \cdot c$, in which x, y, z, etc., are unknown and indeterminate functions. That historiometry can never become an exact science is evident from the fact that the values which men give these unknown historiometric functions are different in different ages, races and individuals. The twentieth-century mind would lay more stress upon the scientific, the medieval mind upon the mystical; the Roman would lay more stress upon the legal, the Greek upon the beautiful; the clergyman would lay more stress upon the ideal, the business man upon the practical" (Browne 1911: 772).

¹⁷ In a letter to Woods, the philosopher Charles Sanders Peirce wrote, "I have duly received the copy of your new work, and have already read pp. iii-xiii, 1-46, and 196-417, and have found it perfectly convincing..." (Peirce 1958: 246).

¹⁸ Woods later employed the method to the study of war (Woods and Baltzly 1915; Woods 1920a).

¹⁹ Note the philosopher Sidney Hook: "Perhaps the most extreme proponent of the heroic interpretation of history, next to Carlyle, is an American Scholar, Frederick Adams Wood [sic], whose contributions have been comparatively neglected in the literature of the subject. What distinguishes Wood from Carlyle and all other followers of the dour Scotch prophet is his attempt to give an empirical grounding of his thesis that will withstand critical, scientific scrutiny. Wood's empirical investigations are independent of his rather bizarre 'gametic' interpretation of history as well as of his a priori construction of the rise of ancient dynasties. His work in general exhibits a curious mixture of shrewd insight, patient inventory, and wild exaggeration. It has its humorous side in his constant reiteration of freedom from bias, although in places he argues for his thesis like a lawyer defending a client, as in his declaration of an objectivity so entire that 'it makes no assumption whatever, unless it be an assumption

Drawing again on hundreds of biographical sources, Woods began by assessing the overall ability of rulers for more than 300 European reigns for a period extending from the early period of national history (between the years 987 and 1525) to about the end of the eighteenth century. Accordingly, Woods assigned a "+" to able rulers, a "-" to incapable ones and "±" to those not clearly capable or incapable (Woods 1913a: 4). Thus, just to give a few telling examples (provided in the Appendix), for the English monarchs, Elizabeth I was assigned +, James I +, Charles I ±, Charles II -, and so on. (It should be noted that no strict quantitative or objective scheme based on the adjectives used by historians was employed in these assessments, and this left Woods a considerable margin of discretion.) A similar threefold classification of the condition of the country during the reign of each monarch (progressive "+", doubtful "±", declining "-") was then proposed, taking into account detailed information on "finances, army, navy, commerce, agriculture, manufacture, public building, territorial changes, condition of law and order, general condition of the people as a whole, growth and decline of political liberty, and the diplomatic position of the nation, or its prestige when viewed internationally." Woods specified that "no attempt is made to include literary, educational, scientific or artistic activities" (10). Having completed these classifications, he proceeded to compile tables showing the relation between the rating of the monarch and the condition of the country during her/his reign. Woods found the correlation coefficient to be about .65 with a probable error of .05 (Appendix, Table I). He considered this degree of correlation, as compared with others which can be found in the study of biological phenomena, a highly significant one. The correlation in physical structure between brothers is only .50; while that between parents and offspring is only .40.

To be fair to Woods, it should be noted that he was aware of the possibility of reverse causality issues. "It may be that the monarchs have influenced the conditions; it may be that the conditions have influenced the monarchs; or both may be caused by some third external agency; or any combination of the three hypotheses is tenable" (Woods 1913a: 247). Yet, he was confident enough to dismiss any endogeneity concern on three distinct grounds. First, Woods argued, the transition from advance to decline, or the reverse, follows in most cases immediately after the death of a ruler. Second, conditions were generally negative during regencies, or interregnums. Of such periods scrutinized, 36 were classed as -, 12 as ±, and 18 as +, most of the latter being associated with the personalities of powerful "non-royal regents" (246). Third, in accordance with the results of his previous research, Woods insisted that the personal ability of the royal families he had analyzed, including those who did not reach the throne, was in complete accord with their ancestry and was apparently uninfluenced by their environment.

Against these empirical findings, Woods did not hesitate to establish a monodirectional causal nexus from ruler's ability to country performance:

"I have looked at the recorded evidence from many points of view, with the wish to decide if the observed fluctuations in material conditions of the various countries could be due to the immediate influence of the sovereigns, and have come to the conclusion that this is the only explanation consistent with all the observations" (Woods 1913a: 256-257). In considering a contrast between royalty and the social class "lying beneath them in point of inherited wealth, prestige, and power," Woods held fast to his belief in the superiority of the royal class:

Royalty has had exceptional opportunities and a peculiar and isolated position. It will not affect the general conclusion of this research, - which declares the positive and initiative influence of monarchs, whether one thinks that royalty as a whole has been much favoured by matters environmental, or whether one takes the extreme view regarding heredity and explains everything by inherent mental superiority. The influences are there just the same, no matter what be the ultimate source of these influences. Even if all the kings be thought really very stupid, and all the observable effects could be imagined due to blind and implicit obedience to the divine right of kingship, the influences and moulding powers of the monarchs on history would be just the same. (Woods 1913a: 257)

All this led Woods to assert with no reservation that "men moulded the circumstances, and not the reverse" (Woods 1913a: 256).²⁰ In short, "history had been a process of natural selection" (Woods 1913a: 273). His research demonstrated to his satisfaction the validity of the hereditarian hypothesis. "Thus the *a priori* point of view fits in with all the facts and offers a single, simple explanation. The 'law of parsimony' is satisfied. It is illogical to introduce further causes when a single, simple explanation will suffice. This single, simple explanation I will call 'the gametic interpretation of history' ..." (275). This he argued may also be referred to as "a breeder's view of history," one "which postulates the extreme importance of heredity and of selection" (277).

In his conclusion, Woods again dismissed the role of the environment while elevating the influence of heredity to the status of a law:

No matter what the form of government may be, nor how much the laws of man give power, in theory, to the people, as long as sexual selection tends to mate like with like, just so long the laws of mental heredity will work towards the formation of governing classes inherently superior to the sons of other men. Universal suffrage and universal education, the most carefully equalized scheme of social opportunity cannot prevent this tendency

that a book is a book and a printed word is a printed word" (Hook 1943: 42-43).

²⁰ As Sidney Hook opined, "This thesis is certainly in line with the heroic interpretation of history, but it is tied up in Wood's [sic] writings with two other positions from which it should be differentiated, preliminary to any criticism. The first is that the historical hero is primarily the monarch. The second is that the monarch is essentially a biological rather than a social creation. Indeed, Wood rides his biological fancy to the point of referring to royalty as a 'sub-variety of the human race'" (Hook 1943: 46).

of the homogeneous to pass into the heterogeneous, – this splitting up of mankind into sub-varieties, castes, and breeds. It is part of the trend of organic evolution. Nor does all this fail to have a significance in relation to the future. It is probable that this separation into castes is increasing rather than diminishing at the present day in all European countries and especially in the United States, where the opportunities for acquiring wealth are particularly abundant. (Woods 1913a: 303)

Although historical science may currently lack the capacity to predict future events, Woods continued, it can offer meaningful interpretations of the past. If the course of human history has been shaped by a small number of exceptionally influential individuals—whose emergence is determined not by external conditions but by inherent biological differences—then the “true interpretation of history must hinge upon the gametes, and the laws of history will be found to be but a part of the laws which govern all organic life” (Woods 1913a: 303).

Reactions

The reception of Woods’ work was, in many respects, controversial and ambivalent. Of this work, Indiana University sociologist Ulysses Weatherly concluded, “Several of his conclusions will hardly commend themselves to those of his readers who take the sociological point of view. ... In purposely neglecting the cultural factors, also, Dr. Woods commits himself to an extreme form of the materialistic interpretation of history in which he will find few followers, for those factors are often the most potent ones in their influence both on economic and political conditions and on those very exceptional individuals to whom he attributes predominating importance” (Weatherly 1914: 121-122). University of Pennsylvania economist and socialist Scott Nearing accused Woods of arriving at his conclusions before actually beginning his survey: “Professor Woods assumes that if the curves of notable monarchs and notable epochs match, one must be the cause of the other. He thereby states his conclusion in his premise and reaches his result before he has even begun to prove his case” (Nearing 1913: 294). Columbia University psychologist Edward L. Thorndike, while unconvinced by Woods’ assumption “that intellect, ability, kindness, and chastity are unit characters, segregating in the gametes,” nonetheless concluded that students of history, “who envy the student of the natural sciences, will find cause for hope in Dr. Woods’s book and suggestions in his methods that are applicable to the investigation of many problems in the so-called ‘philosophy of history’” (Thorndike 1914: 82). Charles-Edward A. Winslow, a bacteriologist at the College of the City of New York and later at Yale Medical School, while noting that the book will likely “only by degrees gain full recognition in the circles where it should have its most important influence,” opined that “members of the American Statistical Association, with their scientific training on the one hand and their direct contact with the social sciences on the other, may have an unusual opportunity to interpret this notable book and the novel and fruitful methods which it exemplifies to the more orthodox historian” (Winslow 1914: 78).

Stanford University entomologist and evolutionary biologist Vernon L. Kellogg observed that Woods’ goal was twofold: to establish a new science of history – historiometry – and to establish “the dominance of heredity over environment in determining human fate” (Kellogg 1914: 255). He “strongly recommended” the book “as an original and very suggestive treatment of the subject,” declaring it “a necessary library addition” to “students of heredity” (256).

Later, in response to Harry Laughlin, superintendent of the Eugenics Records Office at Cold Spring Harbor, New York, Woods offered what may be regarded as a summary statement of his own work while correcting any misconceptions. Laughlin maintained that “[t]he history of mankind is equivalent to the biographies of all of its human units,” with “different weights” signifying their relative importance; in other words, “the history of the race is the biographies of its great men” (Laughlin 1919: 77). Woods, while conceding the validity of the statement as far as it went, nonetheless asserted that “the relation of great men to the ages in which they have lived are doubtless reciprocal, and many writers contend that great men are largely the products of their times,” noting that, in any event, little in the way of “systematic and quantitative study” had been done. Yet he remained convinced enough of the conclusions he had drawn from his own investigations to declare, “What little research there is, points towards the view that great geniuses are born as such, and lead the way in creating new epochs” (Woods 1920b: 77). He then noted that “true and scientific headway should be the evaluation of changed environment when acting upon comparatively identical germ plasms, and the evaluation of differing germ plasms when nourished in comparatively identical environments.” That such an evaluation would only serve to reinforce his position, he readily acknowledged: “It should be insisted upon that we already know, from the confirmatory results of a number of researches, that, as far as important human differences are concerned, these differences are probably the result of differences in the chromosomes of the primary germ cells” (78).²¹

Revisiting his work, specifically addressing criticisms, which, he claimed, “have arisen from the lack of understanding of statistical interpretation, especially the influence of errors,” Woods sought to demonstrate “how a good construction in the domain of scientific probability may arise from elementary material known to be faulty.” Had his method “been more ideal we would have the truth even more strikingly presented,” suggesting that his figures may have produced an even stronger result “with a more perfect method of classification.” His research may indeed have contained errors, yet “[t]he more errors it contains the more we must suppose that the relationship, correlation, or general truth that we have discovered is really greater than it here seems to be.” This, however, assumes the errors “have no bias towards the conclusion obtained.” Should this be the case, Woods proposed his “paradox of historiometry [sic]”: “*The worse we think the material the more certain we may be of our conclusions, provided there*

²¹ On the use of the method of differences with respect to heredity, see Woods (1917).

is no bias in favor of the results" (Woods 1928a: 275-276; emphasis in original).

5. Heredity or Environment? Objective Evidence

Preliminaries

In a commentary on J. McKeen Cattell's "A Statistical Study of American Men of Science," published on *Science* (1906), Woods introduced new insights into his perspective on the relative significance of heredity compared to environmental factors. "To distinguish between heredity and environment is at best a difficult problem, and the statistics here analyzed give, of course, no final answer. All I wish to say is, that there is nothing in these birth ratios to shake one's belief in the extreme importance of heredity, or even to show that environment is the main cause of the 'direction of the performance' itself" (Woods 1909b: 209).

Countering the "widely entertained belief, especially among reformers, philanthropists and many educators, that the force of environment is very great," Woods argued for the need for something "beyond dogmatic statements and wordy essays." While standing firm in his belief in the primacy of heredity as a determinant of human behavior, he nonetheless granted a role for environmental factors. But just how great a role remained to be determined.

Experimentally and statistically, there is not a grain of proof that ordinarily environment can alter the *salient mental and moral traits* in any measurable degree from what they were predetermined to be through innate influences. Yet there is naturally a feeling that environment must count for something, and from experimental zoology we know that in many ways its influence is very great. Surely the institutions, discoveries and inventions of civilization form an environment, the value of which from one point of view, is difficult to overestimate. (Woods 1910: 313; emphasis in original)

That both heredity and environment are important is so obvious that the voicing such "is to voice a platitude," while suggesting they are of equal importance is, to Woods, "to express a falsehood" (Woods 1910: 313).²² A major factor contributing to the argument is

the failure to distinguish between environments which are greatly changed and those which are only slightly altered, between those from which escape is impossible and those from which such escape is relatively easy; the failure to distinguish between environments which are expected and those which are not, and, lastly, perhaps most important of all, the failure to distinguish between effects on higher and on lower types and tissues. (Woods 1910: 314)

Woods' own research and his review of the works of others — "I have been constantly on the lookout for any investigations which might either confirm this belief or necessitate a change of faith"— did little to alter his conclusions. In fact, his resolve had been strengthened: "[A]s far as I know nothing has been brought forward to disprove even an extreme belief in the predetermined nature of psychological differences" (Woods 1910: 314). Reviewing the research on the impact of environment on "modification" of species, Woods proposed the following phylogenetic ranking, in ascending order, with the higher orders being less susceptible to environmental alteration: "Plants, Low Metazoa, Mollusks, Crustaceans, Insects, etc., Fishes, Amphibians, Reptiles and Birds and Mammals, and finally Mental and Moral Traits" (316). Woods' assessment of the studies is thus:

Each organism, whether high or low in the scale of evolution, has from the time of conception and beginning of cell-division and segmentation onward through embryonic and post-embryonic life an *expected* environment. In other words, it *expects* to develop and live under conditions which are essentially similar to those which surrounded its immediate ancestors at each stage of *their* career. (Woods 1910: 334)

Any change in the environment will induce modifications but in decreasing proportion depending upon the degree in which the change deviates from expectation. The influence of the environment, then, in Woods' view, diminishes "with increased phylogenetic rank," "with the evolutionary rank of the tissue affected," "in proportion to the age of the tissue affected," and "with the organism's power of choice." This he offered as support for his view that "human beings, who of all creatures have the greatest power to choose the surroundings congenial to their special needs and natures, are so little affected by outward conditions."²³ This is true even of those whose conditions may not be ideal: "The occasional able, ambitious and determined member of an obscure or degenerate family *can* get free from his uncongenial

²² The economist Simon Patten remarked on Woods' claims: "If Dr. Woods means traits like sympathy, I agree with him. I know of no observational evidence showing it can be altered except by organic development. This may be true of all positive characters. But many so-called characters are not positive traits, but merely conditions. We cannot make good men better merely by an environmental change but we can in this way eliminate vice. Is there then a difference between a condition that leads to degeneration and a biologic trait that is necessary for progress? To be specific, are drunkenness, hysteria and criminal tendencies conditions having objective causes or are they biologic characters? Social observers point out what the conditions are that bring on these results and contend that the so-called traits appear and disappear with the presence or absence of given objective conditions. The deductive biologists start with premises about germ cells and apply their conclusions to man without verification. The difference is not one of fact, but of the sufficiency of bold reasoning" (Patten 1911: 582).

²³ In commenting on the studies of children that seemed to suggest a greater environmental effect, Woods argued that such conclusions were in error, as "other things equal, the young can be more easily affected by surroundings than the adult, and also that there is a great tendency for the higher organisms to equalize in time what they have gained or lost in youth, and to grow after a predetermined plan. For these reasons even the discovery of actual modifications produced among children would not show that the grown men and women, who will be freer to pick and choose their congenial environment, will not follow the same paths that they otherwise would have done" (Woods 1910: 333).

associates. So can the weak or lazy or vicious (even a black sheep from the finest fold) easily find his natural haunts" (Woods 1910: 334-335).²⁴

In his 1918 essay "Kaiserism and Heredity," Woods revisited again the topic, as he took the opportunity to address an issue from the beginning of the rule of Kaiser Wilhelm II in 1894. A pamphlet at the time on the reign of Caligula Caius Caesar was seen as a thinly-veiled attempt to portray the Kaiser (without explicit reference) as potentially as evil a ruler as the tyrannical Roman Emperor. Woods, writing at the end of the Great War, marveled at the prescience of the author of the pamphlet, and sought to examine briefly "the inheritance of mental and moral qualities as revealed by a study of the house of Caesar" (Woods 1918c, p.348). His review of the Caesar pedigree led him to conclude that insanity, epilepsy, and degeneracy were concentrated in the family, evidence enough that one could make "a very strong case for causation through defective germ-plasm." While he found as well that "good characters alternate with bad," nonetheless, should one suggest that environment played a substantial role in the "depravities of some of the Claudian and Julian branches of the house of Caesars," one "should not expect to find their close relatives failing entirely to exhibit any such defects." This was sufficient evidence to persuade Woods that the belief "that degeneration in families is due to the environment in which they live has got to be given up"; rather, "[t]he modern view that acquired traits are not transmitted is enough in itself to negate such a notion" (352).

Referring to the Kaiser as the "latest Caesar" who had "seemingly been eliminated" with the defeat of the German military, Woods lamented that "Caesarism will rise again as long as the laws of heredity continue to act. "No laws of man can change the laws of nature," he peremptorily stated. At best, human agency can aim to guide natural processes in such a way that "dangerous breeds shall be kept at a minimum." While the "evil influences of the baser elements" and the importance of limiting the propagation of "undesirable elements among the poorer classes" have received widespread attention, Woods argued that the issue of regulating dynastic reproduction—specifically, "the mating of sovereign houses"—has been largely neglected. Although he conceded that such regulation is "not likely to be realized at the present day," he found that "the argument is there, nevertheless." If "Caesarism must be abolished," and if despotic rule is significantly shaped by hereditary factors, then "the only way to eliminate despots is to regulate the sources from which they spring." While critics might contend that tyranny can also emerge from non-aristocratic origins—Napoleon being a case in point—Woods asserted with no hesitation that such instances are comparatively rare, and that rulers exhibiting tyrannical traits more often emerge from "the breeds of kings." Thus, to the extent that individuals are "recast in the ancestral mold," and given growing evidence that "important psychic differences are due to heredity," the potential to

reduce the prevalence of despotic leaders lies in regulating the marital alliances of ruling families (Woods 1918c: 352-353).

Cooley and Woods on heredity vs. environment

As previously noted, Woods' work was met with mixed feelings (to use an understatement) within scholarly circles, yet this does not fully capture the complexity of the reception of his thought. The sociologist Charles Horton Cooley managed to engage Woods in a "debate" of sorts on the question of heredity versus environment in response to the publication of *Applied Eugenics* by Paul Popenoe and Roswell Johnson. In a letter to Popenoe published in the *Journal of Heredity*, Cooley, admitting to having been a student of Galton and having been familiar with "such works on eugenics as seemed most significant," suggested a reason behind the rather slight influence of eugenics among social scientists: "While mere ignorance may largely account for it, I think that with intelligent people an equally important factor has been the narrow and particularistic spirit in which eugenics has commonly been advocated." The advocates "have seemed not so much to be proposing a line of research and practice supplementary to history, economics, sociology, education and the like, as striving to depreciate and practically to supplant these branches of learning," deliberately ignoring the facts with which specialists in those fields were most familiar (Cooley and Woods 1920: 80).

Cooley then tried to offer a "clearer fundamental theory of the underlying relation between the social and biological processes, in which, perhaps, might be found a basis upon which students of both might build" (Cooley and Woods 1920: 80-81). The nature-nurture debate had descended into a "partisan" squabble. To rectify the situation, it should be understood and acknowledged that there are in fact

two parallel and interrelated processes, the biological and the social, equal in importance but quite different in character, supplementary to each other and not, properly speaking, in opposition to each other at all. The chief seat of the former is the germ-plasm; of the latter, the stream of psychical communication through which social organization and development takes place. Sociologists, economists, historians, jurists, political scientists, social workers and the like are primarily engaged with the latter, which (let biologists note) is a real system of organic life and not a mere "environment" of the germ-plasm. But as their whole process, biologically speaking, is founded on the germ-plasm, they must study eugenics. (Cooley and Woods 1920: 81).

As the social is based on the biological, so the biological is based on the social. The social "determines the environment in which the germ-plasm lives and, more particularly, the conditions of selection which favor some types and suppress others." As social scientists should study eugenics, so eugenicists "should study sociology" (Cooley and Woods 1920: 81).

Woods responded as a surrogate for Popenoe, who had forwarded Cooley's letter. He reiterated his long-

²⁴ Woods did, however, consider ways in which the environment might act to modify man, these being poisons and diseases. (Woods 1910: 336)

held belief “that the tangle [between the biologists and the social scientists] can only be unraveled by treating both factors as a problem of differences.” In his view, “all the rough differences are due to differences in the germ-plasm, in spite of the considerable differences in the environment.” Cooley’s “stream of psychical communication through which social organization and development takes place” Woods saw as little more than “nurture, or environment,” which “has varying effects on different functions, more effect on some than others.” While it may have “a great effect on one’s modes of speech, and on manners,” its effect “on each trait or function” remains to be seen. In closing, Woods expressed a hope that Cooley “may be brought to ponder on this point and see that, by the statistical method, sociologists can slowly but certainly measure the limits of chromosome control” (Cooley and Woods 1920: 82).

Cooley, reiterating his earlier argument regarding the contrasts between the perspectives of the eugenicists and the social scientists, each refusing to accept the premises of the other, nevertheless offered a means towards reconciliation, “by agreeing upon the parallel and coordinate nature of the two life-processes, each party endeavoring to get the general point of the view of the other, and then proceeding to investigate the large class of questions in which they are both involved.” He was not, however, sanguine about the likelihood of this ever occurring, “because habits of thought are not likely to be changed by argument” (Cooley and Woods 1920: 82).

Woods accepted Cooley’s “idea that a social group may be regarded and studied as if it were a biological organism,” but countered that “this idea does not prevent us from measuring the differences between individuals who compose the group and attempting to devise means of studying the various reactions of the group or the individual.” However, he rejected Cooley’s belief in the relative plasticity of human nature in contrast to the lower animals, citing his “Laws of Diminishing Environmental Influence” as an authority. Finally, the change in habits of thought Cooley recommended Woods saw unlikely to be had through argument, “which in the past has been too much the method of the sociologist,” but only “by measurements and by inductive science which has only recently become the method of the biologist, the psychologist and the philosopher of history” (Cooley and Woods 1920: 83).

Social conification

In 1921, Woods presented a paper at the Second International Congress of Eugenics on his study of New England families. Here Woods found evidence for his theory that “social conification”—the notion that belonging to a particular social group allows members to the opportunity to achieve and advance in society, intermarry, and thereby bring about a stratified social structure, in the form of a cone—“must in civilized societies be a normal process, ... the forces of aristogenesis sprouting up against and through the forces of democracy” (Woods 1923a: 319).²⁵ This social stratification, “in conjunction with

the increasingly uneven distribution of wealth prove that social conification does take place” (320). Further, this process “is hastened and intensified from the correlation that exists between social status and intellectual achievement.” To Woods’ mind, “it is not without interest to see how many persons show high intellectual attainments in a group of [Massachusetts] families selected solely for wealth and social position since 1821.” It thus “appears unescapable [sic] that no matter how much we may contemplate environmental forces, making for equality and democracy, here the real result has been in the opposite direction, namely, class differentiation and conification, due presumably to the accumulating forces of assortive [sic] mating, heredity, and the possibilities of transmitted wealth” (321).²⁶

This is true not merely in the American case, but as well holds true in general, as Woods demonstrated in the case of European royalty. The aristocratic class, “social or intellectual,” occupies the top of the cone, while at the broad base is the “proletariat,” the middle or laboring classes. At the very bottom of the cone are those regarded more as social detritus, “paupers, criminals and mental defectives,” their numbers smaller than those of the laboring classes, thus giving the cone “a small curved base pointing downward.” This situation is not, however, static, as those with superior traits continue to rise, while the middle class may become worse off (Woods 1928b: 121-122).

If heredity be strong it should make the upper social classes inherently superior in intelligence. It leads to a belief in the biological importance of aristocracy, the value of good stock over poor stock and the strength of leadership. ... By conification I mean that the upper social strata tend to become very much removed from the lower. The superior classes also become numerically fewer and fewer in percentage comparison with the total population, though not necessarily fewer in actual numbers. The “social cone” becomes more and more attenuated and pointed. During this process an actual mental evolution takes place within the upper portion of the cone. This mental evolution is inevitable and continues until something happens to make the cone break or crumble at the top. (Woods 1928c: 387)

Conification is not a mere statistical anomaly. It is rather “a general law of historical change” (Woods 1928c: 388).

Physiognomy

Lastly, Woods found in physiognomy, the notion that facial characteristics are an indication of character or

revival, or during a period of war, the group may be said to solidify. If a different process is to be described and some people, figuratively speaking, climb on the shoulders of others, the individuals form what may well be represented by the word conification” (Woods 1923a: 312).

²⁵ As the eugenicist Albert Edward Wiggam, who had served as president of the Association for the Study of Human Heredity, concluded, “It is this phenomenon of ‘conification’ which has, no doubt, been a large element in enabling the old New England families to contribute several times their proportionate share of able men and women as compared with any other region of the United States” (Wiggam 1924: 201).

²⁶ “If all the persons of a social group come together closely, in a mental or spiritual way, as for instance in a time of religious

ethnicity, another tool by which to measure hereditary greatness. As he summed up his findings, replete with photographs, tables, and charts,

it seems safe to say that here in the size of the nose is one point where a beginning may be made for a future science of physiognomy. The majority of great men have large or long noses, the remainder nearly always have noses of at least average size. Although many mediocre or inferior people have large or long noses, men of measurable intellectual superiority do (statistically) have noses somewhat larger or longer than the average size. The exception only proves the rule. Only very rarely do we find a great man with a distinctly small or short nose.

Furthermore, each supposedly higher and higher intellectual group is found to be associated with greater and greater nose-measurement. (Woods 1921b: 318)

6. Alternative Inheritance

We opened this paper by noting the pluralistic nature of eugenics during the Progressive Era. A pivotal debate within the field of eugenics revolved around contrasting theories of heredity. In this context, James Field, in his influential 1911 survey “The Progress of Eugenics,” delineated Mendelism and biometry as two fundamentally distinct and competing frameworks for understanding inheritance and evolutionary processes. The Mendelian school emphasized discrete, unit-based hereditary factors (later identified as genes) and focused on traits that followed clear patterns of inheritance. This school was championed by Davenport in the United States. Mendelians argued that many human traits—including those related to intelligence, morality, and mental illness—were inherited in a straightforward, often recessive or dominant, manner. In contrast, the biometric school, led by the English biostatistician Karl Pearson, emphasized statistical approaches to heredity and the continuous variation of traits. Biometricians focused on the quantitative analysis of traits such as height, intelligence, and other measurable characteristics, using tools like correlation and regression. They viewed heredity as the result of many small, cumulative factors rather than discrete units. Woods aligned himself with the Mendelian view that traits are inherited through discrete genetic units, though he did so with critical consideration.

Heredity Woods defined as “the sum total of what is present in the single fertilized germ cell,” and not mere “resemblance between offspring and parents” (Woods 1911a: 194).²⁷ Reiterating his views

as expressed in his 1910 paper, that each organism “expects to develop and live under conditions which are essentially similar to those which surrounded its immediate ancestors at each stage of *their* career,” and so any alteration in the *expected* environment would result in a diminution of any accrued modification, he proposed that, in treating the problem of relative influence, each “must be treated separately and in the light of specially contrived experiment or by specially devised analysis of statistics already in existence” (p. 196).

Studies of the contrasting character traits of children and their parents, far from seeming to belie the influence of heredity, in fact, according to Woods, “when rightly understood form perhaps the strongest argument in favor of mental inheritance,” that is, “the belief in the essentially predetermined nature of such differences as commonly exist between man and man,” and as a result, “bring the whole question of family and individual vicissitudes with the scope and understanding of the germ-cell theory” (Woods 1912a: 26; 1912b: 5).

Woods offered application of the principle of “alternative inheritance” as a refinement of Mendelian heredity theory, an approach consistent with the notion of “segregation of the germplasm” (Woods 1912a: 26).²⁸ As he defined the principle,

Alternative heredity is exemplified when any two contrasted qualities are present in a stock, either as outward body manifestations or as inward germ-cell determinants, and these qualities are passed onward from generation to generation without neutralising each other, or, in other words, without mutually destroying the contrast. Qualities black and white, good and bad, are in the parentage and in stock. The offspring must be made up and entirely compounded out of either black or white or good or bad, one or the other, this is the “alternative” (Woods 1912b: 5-6)

This he saw as confirming his belief “that human traits would be found in the main to be non-blending,—not an absolute election or exclusion of a large or important trait, but what is better expressed as a rough alternative inheritance,” a “principle” familiar to those whose genealogies “include in the records *all* members of a group of close relatives – all the sons and daughters, all the uncles and aunts, and all of the ancestors for two or three generations” (Woods 1912a: 27; emphasis in original). His own studies appeared to him to confirm that traits are

alternative in descent—high intellectual qualities, which might be called genius, alternating with lesser mentality or mediocrity,

²⁷ Woods later elaborated on the meaning he attached to the term: “The word ‘heredity’ should be understood to signify all that is contained in the original fertilized cell (zygote) from which all the subsequent cells are, by cell-division, produced. If the chromosomes are found to be the sole intracellular agencies controlling the normal development of the body, then the word ‘heredity’ may be considered as synonymous with chromosomes, and to say a man has a good heredity is to say he has good chromosomes. If, as is more probable, other portions of the cell enter somewhat into the matter,

though to a limited extent, then the word ‘heredity’ is almost, though not quite, an equivalent of the word chromosomes” (Woods 1919e: 427).

²⁸ The theory of “alternate inheritance” (“alternate heredity”) was not original with Woods, having appeared in Adelbert von Chamisso’s *De animalibus quibusdam e classe vermium Linnaeana in circumnavigatione terrae* ... (1819), James Wills’ *Lives of Illustrious and Distinguished Irishmen* (1839: 42, 239), and J. H. Wythe’s *The Physiology of the Soul* (1889: 296-297). Woods’ contribution lay in applying it to the study of mental and moral traits (Woods 1908: 690).

or perhaps with mental deficiencies of a marked nature, distinct moral elevation alternating in the same way with ordinary or average types, or very often with notorious moral deficiencies. Marked types of brutality and debauchery show little tendency to lose themselves by blending, as they are passed on through the generations. It is very easy to see that such traits as licentiousness, treacherousness, cruelty, chastity, benevolence, and honesty, if not absolute unit characters, nevertheless hold themselves together more or less as a unit; and the facts of distribution on the pedigree charts are only to be explained if we suppose considerable germ-plasm segregation to take place. (Woods 1912a: 27)

The principle of alternative heredity “shows that processes are at work during the maturation of the human gametes which lead towards segregation and gametic purity, and consequently one is stimulated to further research, to analysis of the complex into its elements, and to the hope of finding simpler factors or units” (Woods 1912a: 28).

Later, Woods examined the application of the principle to the study of mental and moral traits:

Let the great mass be placed in the middle or common grade, and then watch the appearance and reappearance of either one of the types belonging to the extreme ends of the scale, either the rare superior or the rare inferior. If these types are traced through long pedigrees of human beings by studying intensively families where most of the brothers and sisters and uncles and aunts can be traced and accounted for, the phenomenon of alternative inheritance can be seen to have a universal value. (Woods 1912b: 6)

In the case of European royalty, Woods offered evidence from his own work “to prove how frequently a peculiar or exceptional mentality shows its presence in one member of the family while its absence is found in the very close of kin” (Woods 1912b: 7).

While Woods regarded the principle of alternative heredity as compatible with Mendelian theory, he was compelled to acknowledge that, despite his efforts to identify clear instances of Mendelian dominance and recessiveness in the alternate inheritance of psychological traits, such patterns were not evident in the data at his disposal. Still, Woods continued in a hopeful tone, it remains likely that more refined analyses and categorizations—beyond the preliminary groupings he had thus far employed—may reveal discrete unit characters that exhibit dominant or recessive inheritance. Evidence suggests, he held, that mental qualities tend to be organized into a single unit, and certain specific moral types into another, and that the “germ-cells were trying with more or less success to segregate these units” so that that each reproductive cell gets only one set of hereditary factors (1912b: 15). In the end, and despite its current limitations, Woods was confident enough to conclude that the “principle of alternative heredity in human mentality is at least a valuable consideration, because it is something which environment cannot,

we must think, tend to cause, but rather would tend to obliterate had environment a power to do so” (15-16).

7. Eugenics and Race

The goal of the eugenics movement

Woods’ 1912 paper to the First International Eugenics Conference,²⁹ “Some Interrelations between Eugenics and Historical Research,” began with a statement of his considered goal of the eugenics movement, in which the focus must be placed squarely on heredity:

The eugenics movement, in order to justify itself in the eyes of the body politic, must first of all emphasize heredity; but it must do more than that. It is incumbent on the advocates of eugenics to prove that the desired betterments in the social organism cannot be looked for as a consequence of environment; for, if they can, then why take up a new remedy? Every research in anthropology and history, which shows that nature is stronger than nurture, adds that much to the eugenist’s capital. (Woods 1912c: 246-247)

While admitting that, “as far as any one individual is concerned, both the inborn or gametic forces and all the other subsequent influences are hopelessly intertwined” – the constitution of the individual, black or white, is “the compound resultant of all the forces acting on the production of pigment, ... the result of all internal causes acting in response to all outward stimuli.” Yet, “the pigmentation differences between white and negro, say in the United States to-day, or at any one place or time, are obviously a matter of germ plasm. We scarcely realize that, without the least doubt, we in this instance at once separate the relative value of heredity and environment.” Such differences as there are “are due *almost* entirely to heredity and for practical purposes, this covers the ground” (Woods 1912c: 247; emphasis in original).

Woods rejected the notion of the “plasticity of human nature,” noting that changes over the generations “seem due to the dropping out of whole characters through failure to transmit, so that the percentage in each generation becomes gradually less. It does not seem due to gradual accumulative moulding power of society as a whole.” It appears to have been the case that “the worst types have left fewer adult descendants, probably because of strong and wide-reaching correlations between normal health and all that passes under the term morality.” Ruling dynasties rise and fall. “The survivors are descended from the morally superior, on the average.” Such persons, as well, are “those who, on the whole, are superior intellectually, so that history does afford evidence with regard to changes in racial characters of a very optimistic sort” (Woods 1912c: 250-251). In the end, Woods concluded, “Heredity makes the backbone of history and the body of history, but changes in the environment may alter the complexion somewhat” (253).

²⁹ *Problems in Eugenics* (1912). A summary of the papers presented may be found in Schuster (1912).

In 1914 Woods published "The Racial Origins of Successful Americans." This study presented lists of the most frequent surnames "drawn from the World Almanac for 1914," in New York City, Philadelphia, Boston, and Chicago, and the number in each city selected for inclusion in the 1912-1913 edition of *Who's Who in America*, purported to serve as representative of their social distinctiveness. Those whose surnames suggested Anglo-Saxon lineage he concluded were well over-represented in the sample, while those whose surnames suggested continental European heritage were conspicuously absent. From this he inferred,

that all the stocks that have come into America in recent years since 1830 have been very inferior to those already here in the seventeenth and eighteenth centuries; and in general they have been getting worse and worse. There have been a few notable exceptions, but broadly speaking all our very capable men of the present day have been engendered from the Anglo-Saxon element already here before the beginning of the nineteenth century. (Woods 1914: 402)

The idea of America as a "melting pot" Woods declared without merit, "in the biological sense, i.e., that there is any genuine mingling of blood sufficient to overcome the natural tendency that all species and varieties have to grow apart and become more dissimilar in course of time." Should there have been racial mingling, "there would have already been a decline in natural ability, but the tendency of like to mate with like, the natural tendency of the most successful to mate among themselves, works in the opposite direction." The quality of a nation's leaders is so important "that it behooves patriots, sociologists and philosophers to take all these questions into account and consider more carefully the genesis and significance of that small fraction of one per cent. which represents the intellectual crust" (Woods 1914: 402).

Madison Grant, then chairman of the New York Zoological Society, published in 1916 *The Passing of the Great Race, or the Racial Basis of European History*, purporting to show that the Nordic race, the ideal, was in danger of disappearing, a consequence of, among other things, intermarriage with those of "inferior" races. Woods in his review of the second edition declared the book "admirable," and an interesting and valuable pioneer attempt at an interpretation of history in terms of race." The book "will do much to widen the rapidly expanding interest in eugenics and help to disseminate the ever-growing conviction among scientific men of the supreme importance of heredity" (Woods 1918a: 419, 420). Specifically, Woods offered, first, that the book "is supported by the facts of history," arguing that "if we start with an extreme 'hereditarian' hypothesis as to the special value of the Nordic race, we do write a good ethnological and anthropological history of European and Asiatic culture. The broad panoramic changes are systematically and reasonably explained by such an hypothesis." Second, the author acknowledges "the importance of inborn native mental differences," substantiated by "a mass of carefully finished statistical research on the problem of human heredity

which tends to support the whole theory of race as against environment." If indeed it should be the case that "adult human differences within a single family and within a single class are largely the result of pre-formed differences in the chromosomes of the primary germ cells, then there is at least a good hypothesis that the same is true for racial differences" (419).

Woods did, however, offer a point of disagreement. He took issue with Grant's conclusion as to the inevitability of racial decline, arguing that Grant had not considered the influence of "internal forces silently and continuously working towards the improvement, not of the whole race, but of a part of it." These "tendencies or correlations" include "assortative mating (i.e., tendency of like to mate with like), general truth as far as results at present indicate of desirable traits within an individual to be correlated with other desirable traits, general tendency of long-lived people with a tough resistance to leave more offspring than the average, besides other recently discovered correlations bringing an encouraging outlook" (Woods 1918a: 420).

Woods revisited the book following the publication of the fourth edition of 1921, reviewing some of the reviews pro and con. His conclusion: "There can be no question that the Nordic race is and has been a superior one. Whether it is passing or not is a question. Perhaps future research may make it possible to forecast these racial and historical problems" (Woods 1923b: 95).

Race even played a role in conflict. From Woods' earlier studies of European royalty, he concluded that "European history during the last six or eight centuries illustrate very clearly the racial element in the production of anarchy." The Boston Police Strike of 1919 ended when "[t]he 'aristocracy' joined hands like a flash and took control for law and order," seemingly evidence "that all the Nordic peoples have an instinctive horror of anything other than well-organized government." Shay's rebellion (Massachusetts, 1786-1787) and the protest march to Washington, DC, of the Army of the Commonwealth in Christ (Coxey's Army, 1894) amounted to little. Likewise, Walter Tyler's peasant revolt of 1381 and Jack Cade's rebellion of 1450 against the English government were (according to Woods) quickly put down. Woods took solace in these examples: "We in the United States have nothing to fear from internal upheaval as long as the stock remains the same or as long as the Nordic element remains in a reasonably pure condition and in a substantial percentage of the whole population" (Woods 1925: 539).

Morality and Fertility

Woods had identified in his studies of European royalty a correlation between morality and net fertility. He later concluded that this may hold true for all classes of society, with some unexpected benefit: a declining birth rate among the upper classes of American society may allow for "internal forces of selection and survival" that tend in the direction of "improvement in the quality of the group." While acknowledging that "the birth rate among America's biologically best has of late rapidly declined," this change has provided an opportunity for a "new differentiation," one "based

on the parental instinct.” More explicitly, “those who are more desirous of children will have more children, and the parental instinct itself will become an element of selective value.” Therefore, “as far as heredity is concerned, we have now a new force working towards improved racial morality and towards the elimination of selfishness” (Woods 1918b: 331-332).

Yet, Woods was not quite ready to forego those eugenic policies in vogue at the time. While convinced that “the future is not necessarily so dark as some people suppose,” nonetheless, his proposal was not to be construed as “a suggestion that active eugenic propaganda is not needed or that governmental and legislative control may not greatly aid in the improvement of the American people” (Woods 1918b: 332).

Race and anarchic tendencies

To Woods, there was emerging “a slowly growing mass of statistical proof that important mental and moral qualities are correlated.” The latest research in fact seemed to confirm “the view that the correlation of superior qualities is probably a general principle of nature” (Woods 1919a: 84).

The Bolshevik Revolution would provide Woods with a chance to revisit the question of the influence of nature on racial temperament. The revolutionary anarchist Mikhail Bakunin, an early promoter of the philosophy of anarchism and acknowledged leader of the anarchist movement, Russian by birth, traveled throughout Europe from the mid 1840s advocating revolution; Bakunin and fellow Russian Peter Kropotkin, himself a product of the Russian aristocracy, gained worldwide recognition as the leading proponents of anarchism, finding followers throughout Europe and the United States by the late nineteenth century. Many others associated with revolutionary anarchism also claimed Russian ancestry. Nowhere did the revolutionary agitation of the anarchists have greater impact than in Russia, especially following the defeat in the Russo-Japanese War of 1905. The success of the Bolsheviks following the 1917 revolution and the social and political convulsion that followed caught the interest of Woods, who pondered whether there was something inherent in the Russian/Slavic race that predisposed it to anarchy. While acknowledging that race is “neither identical with language nor with nationality,” he accepted the anthropological conclusions that the Anglo-Teutonic (Nordic) race was distinct from the Slavic, Latin, and Mediterranean races, the former characterized as comprised of peoples “tall, blonde, dolichocephalic, enterprising, and masterful, with capacity for organization and practical thought.” He took for granted that “the Russian peasant is different racially from the Dane or the Englishman of the same social class,” while undertaking to determine whether there may be a difference in the histories of Russia and the Nordic countries with respect to anarchistic tendencies (Woods 1919b: 188).

Russia indeed, as detailed in *The Influence of Monarchs*, had been witness to recurring periods of “intrigues, uprisings, and disorders,” while England, by contrast, at least from the mid-fifteenth century to the beginning of the nineteenth, witnessed “no periods in which the word anarchy is used by historians as

applicable to a description of the condition of national affairs, or to a characterization of the spirit of the times.” Scotland has as well been unburdened with anarchy (although not free from “[c]ivil wars, border raids, plots, conspiracies, turmoil, and unsettled conditions”), while Sweden, Denmark, and Prussia have shown no evidence of having experienced such a state. From this Woods concluded “that Nordic races have not been appealed to by anarchistic temptations,” while for Russia, “there is something inherent in the temperament of the Slav causing him to yield much more easily than his Nordic neighbor to the temptations of mob violence.” His fervent hope, then, was that nature would prove to be “stronger than nurture,” and so “Bolshevism will find itself delimited on the Anglo-Saxon frontiers” (Woods 1919b: 188-190).

8. Conclusion

Frederick Adams Woods was in his time quite a famous and influential figure in the scientific community, his opinion on scientific matters, specifically about the impact of heredity on moral behavior and mental development, sought even by those in the popular press. Yet today he has been largely forgotten, his name absent from recent works on the history of eugenics and illiberal reformers.

While it is evident from the above that Woods was an extreme biological determinist, his approach was intended to promote the hereditarian perspective from an objective, scientific standpoint. This allowed him to be more quantitative than Galton. Indeed, Galton's legacy ultimately became contending terrain. American Progressive Era scholars accepted hereditarianism, but they challenged each other on two distinct and crucial grounds: the relative importance of heredity and environment, and the “scientific status” of eugenics as a discipline. Woods took an extreme position in both connections, and this makes him a figure deserving of rescue from oblivion. First, Woods opted for an extreme version of biological determinism which left virtually no room from external influences. Not surprisingly, then, his name disappeared from the eugenics literature of the 1930s, as Frederick Osborn and his “environmental eugenics” came to dominate the scene. Second, Woods proposed historiometry as an approach that would allow eugenics to achieve the authority (and impermeability) of modern science; the concept of historiometry made history not just a science but an “exact science.” As he emphatically put it in his contribution to the First International Eugenics Congress,

I believe that the science of historiometry will prove that heredity is everywhere the chief force in determining the fates of nations. Heredity makes the backbone of history and the body of history, but changes in the environment may alter the complexion somewhat. All these questions can be measured and weighed if we make the problems into problems of differences. The mine of historical information is almost unworked. It is high time that the human record, so ancient in its beginnings, should be used to contribute to that most modern of sciences the improvement of the human breed. (Woods 1912c: 253)

Third, Woods tried to deviate from the classic Mendelian scheme, advancing the notion of “alternative inheritance”—the idea that traits are passed down through generations in a way that isn’t strictly dominant or recessive, and involves the segregation of germ-plasm. In this way, he sought to transcend the divisions that characterized the eugenics of that period. “The general rough principle of alternate inheritance in human heredity,” he affirmed, “leads... to the hope that a further study of this question may bring out certain ‘unit characters,’ more or less marked, so that here in the end there may be harmony between the two unfriendly schools, the Mendelian and the Biometrical” (Woods 1908: 783).

Woods is remembered today not as a eugenicist or a proponent of the primacy of heredity over the environment, but as a pioneer in historical method, i.e., his formulation of the method of historiometry.

Sebastian Ottinger and Nico Voigtländer (2022), in their desire to extend the work of Woods, actually referred to him as a historian “who coded rulers’ cognitive capability based on reference works and state-specific historical accounts.” Woods’ desire “to assess rulers’ ability independent of the performance of their states ... nonetheless raises endogeneity concerns,” which they resolve by accounting “for cognitive ruler ability with the ‘coefficient of inbreeding’ of rulers” (97). They sought, however, to avoid what they perceived as Woods’ Social Darwinist beliefs. While “Woods’ (1913) hypothesis was that moral and intellectual ability is inheritable, so that kin marriage among successful dynasties would produce *better* rulers,” such a hypothesis “introduces a bias *against* our findings,” and further, “the negative effects of inbreeding on fitness were not accepted in biology until the second half of the 20th century” (98n4).³⁰

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³⁰ The authors referenced the work of biologist Sydney Asdell (1948) who demonstrated the invalidity of Woods’ Social Darwinism (Ottinger and Voigtländer 2025: 98n4).

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