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THE MYTH OF THE ACTUARY: LIFE INSURANCE AND FREDERICK L. HOFFMAN'S *RACE TRAITS AND TENDENCIES OF THE AMERICAN NEGRO*

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In May 1896, Frederick L. Hoffman, a statistician at the Prudential Life Insurance Company, published a 330-page article in the prestigious *Publications of the American Economic Association* intended to prove—with statistical reliability—that the American Negro was uninsurable. *Race Traits and Tendencies of the American Negro* was a compilation of statistics, eugenic theory, observation, and speculation, solicited by the Prudential in response to a wave of state legislation banning discrimination against African Americans.

Race Traits immediately became a key text in one of the central social preoccupations of the turn of the century: the supposed Negro Problem. Numerous turn-of-the-century tracts (including Hoffman's) stipulated that minority racial groups were not only biologically inferior but also barriers to progress. Hoffman, a German immigrant, was one of the leading statisticians of his time and also a strong proponent of racial hierarchy and white supremacy.[1] His application of mathematical tools to a social debate set a precedent for the use of statistics and actuarial science—two fields then in their infancies, which absorbed the biases and errors of their early participants. Though *Race Traits* was hailed by many as a work of genius, even in its own day critics attacked its racist premise and suppositions, noting that Hoffman's sources were problematical and his mathematical analysis flawed. Hoffman's work embedded racial ideologies within its approach to actuarial data, a legacy that remains with the field today.

Yet when we examine the life of Frederick Hoffman, we find a person of great statistical prowess who made enormous contributions to the field of public health, contributions that make his foundational work all the more troubling. A discerning, tireless worker, Hoffman later published with remarkable prescience on malaria, industrial mortality, lead poisoning, and cancer. It was Hoffman's work that first linked cancer to diet and tobacco use. Overall, he was a statistician prompted by humane motives. Hoffman helped found both the National Tuberculosis Association (later the American Lung Association) and the American Cancer Society.[2] How could a person of such significant accomplishment have authored work as fraught with bias as *Race Traits*?

Historian Nancy Stepan reminds us that, "The scientists who gave scientific racism its credibility and respectability were often first rate scientists struggling to understand what appeared to them to be deeply puzzling problems of biology and human society."[3] Hoffman received the distinct social, philosophical, and political mores of the society in which he lived; that he could and did transmit them in the writing of *Race Traits* goes without saying. Whether he was consciously racist when he authored his first major work is a matter for debate, but it is clear that he did not break from the predominant racial ideology of his time. A more useful line of inquiry is how and why the document became accepted as an important piece of scholarship in its day. What were the motives behind its publication, and what were the values that have come to inhere in the methods Hoffman developed with the piece?

Given the piece's historical importance, it is all the more pressing that we examine its influences, which are deeply embedded in the statistical methods Hoffman helped develop in this work and elsewhere. A critical look at *Race Traits* and the circumstances that surrounded its commission, author, and field proves useful in understanding the ways in which the social and political uses of statistical data can obscure wider understandings important to public health. At a time when the life insurance industry was expanding in both economic and social power, the publication of *Race Traits* helped counter a century-long struggle by African Americans to access the services and security provided by its policies. Prudential selected Hoffman to author this document because of his skills as a statistician and his racial outlook, and in writing it he served the insurance industry's purposes by harnessing social ideology to mathematical methods.

RACE TRAITS, ITS RECEPTION, AND ITS CRITICS

The *Journal of the American Economic Association* devoted two full issues to the publication of *Race Traits and Tendencies of the American Negro*. Hoffman peppered the text with demographic figures, morbidity and mortality tables, miscegenation rates, and incarceration trends. He used Gould's anthropological tables, the eleventh U.S. Census (1890), reports from the hospitals of the Freedmen's Bureau, and the measurements of soldiers collected during the Civil War. He created the largest compilation of data about the American

Negro then available in print, and he presented it all to the reader both as interpretation and as raw data.

The power of this encyclopedic tract was immediately clear. Its statistical heft awed supporters; numerous reviews praised the article as a "mine of statistical information" where "figures culled with evident care from the most trustworthy sources…are intelligently and impartially combined and discussed in a clear and attractive manner."[4] Professor W. F. Blackman of Yale wrote that Hoffman had found the definitive way to study the Negro Problem. "In dealing with this question we have had enough of assumption, prejudice, sentiment and timidity; what we need is exact research in accordance with the methods of anthropology and of statistics."[5]

The reception fulfilled Hoffman's hopes for the piece and the positive reviews confirmed that he had achieved exactly what he set out to do. "Only by means of a thorough analysis of all the data that make up the history of the colored race in this country can the true nature of the so-called 'Negro problem' be understood," pronounced Hoffman in the early pages of *Race Traits*. "Being of foreign birth, a German, I was fortunately free from a personal bias which might have made an impartial treatment on this subject difficult."[6] Yet despite its glowing reception, the statistician's work would prove to be neither as fact-based nor as neutral as its author claimed.

"The central fact deducible from the results of this investigation into the traits and tendencies of the colored population of this country," surmised Hoffman, "is plainly and emphatically the powerful influence of race in the struggle for life."[6] (p. 310) For him (as for many authors) the race question collapsed into a simple tautology: Negroes died because they were inferior, and they were inferior because they died. "It is not in the conditions of life, but in the race traits and tendencies that we find the causes of excessive mortality," he resolved, a statement that summarizes both the central tenet of his text and the piece's most glaring logical fallacy.[6] (p. 95)

Hoffman's narrative told a powerful story about African Americans. It was not, however, uncontested. Contemporary W.E.B. Du Bois summarized, "most of the conclusions drawn from these facts are of doubtful value, on account of the character of the material, the extent of the field, and the unscientific use of the statistical method."[7] Howard University mathematician Kelly Miller joined Du Bois in critiquing Hoffman's mishandling and misapplication of data. Perhaps no charge was more critical than Du Bois' observation that Hoffman had failed to stratify his findings. "The careful statistician will immediately see that, while all these different sets of figures give data interesting in themselves, they must be used with great care in comparison, because they relate to different classes of people and to widely different conditions of life," Du Bois warned. Stratifying by social or economic status would have shown that black mortality rates differed enormously based on environmental factors. Du Bois pointed out that the health outcomes of African Americans were entirely comparable to those of immigrant groups with similar economic resources. (In his review of *Race Traits*, Du Bois pointed out that at 32.61, the death rate of blacks in the United States was slightly lower than that of white citizens in Munich, Germany [32.80].)

Hoffman had made the mistake of aggregating his data, thereby obscuring any relationship between cause and effect other than the single commonality of race itself. Such failings indicated that Hoffman had not adhered to the scientific methods on which he prided himself, and on the basis of which his work claimed special credibility. On the grounds of his methods alone, the bulk of Hoffman's claims and conclusions could be easily toppled.

And yet they weren't. The voices of praise largely drowned out the criticisms made by Du Bois, Miller, and others. *Race Traits* remained the standard of excellence for statistical research into race and health for years.

PHILOSOPHIES OF THE INSURANCE INDUSTRY

Hoffman's statistical narrative in *Race Traits* made dramatic claims about the welfare, vitality, and social role of African Americans. As an economic issue, Hoffman's conclusions were simple as well as convenient for an actuary whose job was to prove the uninsurability of the group. Mathematically, actuarial tables may be quite accurate, but rating systems result from a fusion of predominant social beliefs and statistical endorsement. Political scientist Brian Glenn writes, "Insurers can rate risks in many different ways depending on the stories they tell about which characteristics are important and which are not." These stories often adhere to stereotypes and social cleavages "that may be irrelevant to predicting actual losses."[8] Irrelevant, but powerful in guiding company policy, since, as Glenn warns, "almost every aspect of the insurance industry is predicated on stories first, then numbers." "Risk narratives," as he terms them, form the groundwork that supports policy, but the conclusions based on this mélange of prevailing social prejudices and supposed common sense are contestable.

African Americans were indeed plagued by horrendous health outcomes at the turn of the century. Between 1890 and 1894, the overall mortality of blacks in southern cities was 1.6 times that of whites.[7] (p. 129) But they were not the only group for which mortality rates were chilling, or which could justifiably have been considered poor risks by the life insurance industry. Why, then, did insurers single out this group for rejection while accepting and even soliciting other groups with similar mortality at ordinary industrial rates?

The insurance industry, both literally and figuratively, banks on social anxieties and representations surrounding mortality, responsibility, power, and human worth. From its earliest days, success in the sale of insurance has gone hand in hand with skill in public relations, in particular the projection of a prosperous and progressive economic image—one that contrasted directly with popular representations of African Americans at the time when Hoffman wrote *Race Traits*. The ideology of race that was ascendant in the late 19th century asserted that heritable, racially defined traits defined economic status, and that blacks in the United States were predisposed to poverty and unhealthful living conditions. The theory failed to account for or even acknowledge the most obvious counterexamples: those men and women of African descent who had built up a reasonable standard of living and would seek to protect it, often by buying insurance. This mode of racial thinking did, however, easily join the preoccupations with evolution and advancement that were becoming the scientific ethos of the day. Moreover, the notion of progress infatuated business, which embraced advancement and improvement as guiding principles of marketing and corporate policy.

As a racial theory, however, biological predisposition to success or failure rested on a slippage between acquired traits and hereditary ones. It understood individuals' progress and decline as divinely prescribed fates, triggered by an innate susceptibility to either racial degeneration or advance. It was thought that whites—with their supposedly superior heritage—were able to harness their natural vitality and thrive in even mediocre circumstances. But blacks needed the best possible conditions just to prevent decline, and once deterioration had begun, it could not be reversed. The economic and social roots of the condition of African Americans in the late 19th century were written out of the discussion entirely, and their inferior status had become accepted as defining attributes of "the Negro." Thus, the biology of African Americans stood in the way of progress; as a race they were antithetical to the goals and rhetoric of commercial insurance.

It is impossible to openly discuss the exclusion of African Americans from 19th century commercial insurance without considering the influence of the era's pervasive white supremacism. The basic concept of white supremacy dominant at the time held that black lives were simply not commensurate with white, nor, for that matter, were they seen as equal to that of any other group, including the immigrants with whom 19th century African Americans shared many economic conditions. Prudential's claims that the insurance of black lives caused a drain on revenue were spurious. While the company expected financial losses, the anticipated drain was not due to differential mortality but rather to the reduction of sales to white customers assumed to be unwilling to patronize a company that considered black lives worth insuring. This calculus of social worth, financial value, public opinion, and corporate profit was one by which Prudential and other insurers had guided their strategies for a century. To sell insurance policies at equal rates or for equal benefits across racial lines would offend a predominant system of social beliefs about the worth of human lives. But at the same time, only a scientific, statistical explanation could be used in the age of progress to publicly explain Prudential's decision.

A HISTORY OF EXCLUSION

It could be said that the life insurance industry came full circle for African Americans, who were the first to be insured for the wrong reasons and the last to be insured for the right ones. During slavery, blacks could be insured as property for hefty sums. But popular sentiment held free (white) lives to be sacrosanct, and the prospect of associating a monetary value with them morally repugnant. The availability of slaves for sale provided an uncomfortable parallel of the reduction of life to dollars. The practice of insuring a life also defied a set of beliefs on risk and gambling. To lay down money against one's own life was to tempt fate. To have another do so was to tempt assassins.[9] Yet opposition to life policies remained confined to contracts on human lives, or to be more specific, white human lives. The crucial questions surrounding life insurance, then, began with whether the practice was appropriate for people, and evolved to a consideration of which people were worthy of the practice.

An insurance industry based on the sale of policies to free whites emerged during the mid-19th century, but insecurities persisted among would-be buyers, who remained concerned that the practice interfered with providence and offended the will of God. A strong social impetus, or, as Glenn might say, a convincing social narrative, was needed to attract customers to insurance. To sell policies, companies needed to allay moral anxiety and promote their product as a social good, a method for uplift. They did so by making adroit appeals to the moral responsibilities of the family breadwinner, conjuring images of upper-class widows and fatherless children through their advertising materials. The ads accurately targeted the ideological concerns of a hesitant public, and they also did much to establish an early and lasting stratification of the industry. The purchasers who insurers sought for life policies comprised not just the moral elite but the economic one as well.

Insurance companies achieved remarkable success at creating a market for life contracts, but regular policies proved beyond the means and even the knowledge of many of those who needed them most. No company existed that would write a contract for less than $1,000. This excluded the vast majority of African Americans and even most whites from the market, more so when we consider that most policies included clauses forbidding engagement in industrial work. Shut out of main-line life insurance, African Americans, immigrants, and workingmen created alternative structures, turning to an older and less formalized tradition of protection: cooperative and fraternal aid associations. Based on the principles of cooperation and reciprocity, such societies met the social and economic needs of their members by pooling small amounts of money and large quantities of social dedication. Focal points for organization seemed to exist in never-ending supply, including ethnicity, religion, neighborhood, gender, trade, and a bevy of other commonalities. African Americans quite naturally supported societies of their own. The tradition of black mutual aid societies was in fact just as long as that of the ones from which they were excluded, or possibly longer, as the need for support within black communities easily outstripped that of whites. This was true before emancipation and even more so after it.

Of the services that fraternal and cooperative aid associations provided, burial was the most important to those who would give their pennies. Eugene Genovese has pointed out that in all social classes, respect for the dead helps define respect for the living.[10] The threat of injury and death dogged working-class life, and funerary costs for any member of the family might bankrupt the entire household. The need for proper burial fueled the existence of aid organizations among blacks and whites alike, contributing much to the growth of such societies in the second half of the century. Ultimately, it would even help bring respectability to the socially delicate sale of main-line life insurance policies.

Insurance is a highly lucrative business, and in the latter 19th century it factored among the biggest, fastest-growing, and most aggressive corporate entities in existence. Between 1860 and 1870 alone, the number of policies active in New York State jumped from 50,000 to 650,000; by 1868 the sum of insurance throughout the nation exceeded the national debt.[11] Cutthroat business practices guided corporate policy. By the mid 1870s, the three largest companies—Metropolitan Life, the Equitable, and Mutual Life—had expanded into a corporate oligopoly that dominated sales in the cities of the northeast United States and maintained an impressive reputation worldwide. Smaller competitors and new ventures would have to carve out their own niches in the field.

In 1875, a young New Jersey-based company called the Prudential did just this, mimicking the success of mutual aid societies by focusing on the industrial working class. The insurer peddled what it called "industrial" policies at prices that ordinary workers could readily afford, sending agents door to door on payday to collect premiums of between three and ten cents for policies worth about $100.[12] Such tiny sums did little more than cover the cost of burial for the insured, but the importance of the rite allowed Prudential to sell policies to all comers—women and children as readily as men, white, immigrant, and black—a practice that increased commerce substantially. Industrial insurance dealt literally in nickels and dimes, but the sheer volume of sales turned a profit for Prudential, and inspired companies such as John Hancock and Mutual Life to develop industrial branches of their own before the year was out.

The polish, prestige, and in particular the financial reliability of the larger companies made them enormously attractive to the poorer sector. Working-class whites and immigrant groups bought into industrial policies in numbers that surprised even the directors of the companies, but the availability of the new policies had the most dramatic effect on black communities. A rising middle class of African Americans proved especially eager to invest in industrial insurance, having been subject even more than whites to the shortcomings of the mutual aid model.

Fraternals and cooperatives had proven financially vulnerable to lack of business expertise and the vicissitudes of the economy. Moreover, at its inception, industrial insurance maintained none of the restrictions of the fraternals. It extracted the single most important prerogative of the mutual aid societies (burial costs) for use in a business contract which, modeled on those available to the elite, contained only one condition: payment. With the availability of insurance reduced to a matter of revenue divorced from social standing, industrial policies represented the first insurance accessible to both African Americans and whites, an equality that lasted for approximately six years, from 1875 to 1881.

The relatively equal access of African Americans to main-line industrial policies came to a halt in 1881, when Prudential announced a decision to reduce life benefits to African Americans by a third, though they would continue to pay the same premiums. Citing elevated mortality rates among blacks, the company insisted that its decision was "equitable" and based "solely on the basis of facts." Some evidence suggests, however, that the prospect of black policyholders simply had not occurred to commercial insurers when they launched their industrial policies—at least not in the volumes with which African Americans applied for coverage—and the reduction of benefits was a response to an unanticipated and socially undesirable demand.

Prudential justified its decision with data on black mortality rates in several urban centers as well as its own records, but these data do not appear to have been accompanied by an investigation into the mortality of any other group. A memo from Prudential President John F. Dryden intoned, "Under adult policies the sum assured will be one-third less than now granted for the same weekly premium. . . these changes are made in consequence of the excessive mortality prevailing in the class above named; *they do not apply to other persons*."[13] (p. 137) [italics original] Though the data confirmed elevated risk for African Americans, it did nothing to address the possibility of corporate bias in the research chosen. By the end of the year, Mutual Life followed Prudential's example and also reduced benefits to black policy-holders.[12] (p. 338)

STATE REGULATION AND AN INDUSTRY'S RESPONSE

Mutual Life's speed in following Prudential's lead was in no way surprising, given the importance of marketplace and public relations advantages, however slight, to competition in this cutthroat industry. Commercial insurers had long been schooled in the art (and benefits) of clever maneuvering and business cunning. By the late 19th century they had become able and accustomed participants in battles over marketplace conditions, including who could be included and excluded from policies, and how. Insurers took the values of competitive survival to their logical extreme, confronting anyone and anything that seemed to challenge their access to profit: regulation, their claimants, and especially each other. Many of their acts were brazen, earning them notoriety and the publicity of scandal, but in spite or even because of their extreme bravado, cutthroat practices failed to damage sales, opening the way instead to even greater expansion of business.

In response to the growing mistrust of insurers, most states appointed insurance commissioners and attempted to pass regulatory state laws. But the alacrity with which companies maneuvered around regulation made its effect on their practices and sales minimal. Companies responded to regulatory threats with bribes and political gifts; insurance commissioners could be easily bought, their yearly audits rendered toothless. Some insurers went a step further and ran for office themselves. Dryden, president of Prudential and eventually Hoffman's ally and employer, conducted a successful campaign for the New Jersey state senate and retained his post in industry throughout his political career. It was not until the New York State legislature's "Armstrong Investigation" of 1905 that the industry's political power would finally be weakened.

Beginning in the 1880s, state legislatures began to pass a small wave of anti-discrimination legislation, targeted mainly toward the practices of industrial insurers. In 1884, the Massachusetts legislature passed a law forbidding the custom of providing fewer benefits to blacks who were paying the same premiums as whites. Similar laws were passed in Connecticut and Ohio in 1887 and 1889. Such laws were hardly characteristic of the post-Reconstruction era, but the flurry of statutes came in the context of a larger public push to regulate the industry. They were certainly affected by the ongoing lobbying efforts of African Americans and civil rights organizations attempting to put the Fourteenth Amendment's guarantee of "equal protection of the laws" into practice. Industry officials initially responded to them the way they did other regulatory laws, complaining vociferously about their anti-business features and emasculating them in court and practice wherever possible. When New York State introduced a bill, Leslie Ward, the vice president of Prudential, published a letter in a popular trade journal threatening to end sales to African Americans altogether should the legislation pass. State legislators disagreed. New York passed the measure in 1892, followed by Michigan in 1893. When Senator Stokes introduced the bill in New Jersey, Democratic Governor Werts vetoed it, filing among his reasons a letter from a Prudential actuary detailing the comparative mortality between blacks and whites.[14] Within a year, however, the statute reappeared and passed over the governor's veto.[15]

Prudential responded to the law with the barest form of compliance. In the tradition of commercial cunning, the insurer accepted the law but interpreted it as Leslie Ward had threatened a few years before: with a call for the cessation of all sales to African Americans. Faced with the social incommensurability of black and white lives, and convinced that equally insuring devalued lives would drive up the cost of doing business, Prudential had a vested interest in resisting the new legislation.[16] To insure blacks on the same basis as whites would be unacceptable, Ward claimed, on statistical grounds: "[W]e are quite sure that mortality, even amongst the best of colored lives, would not compare favorably with the mortality amongst whites."[13] (p. 209) And to make the point substantially clear, Prudential enlisted the services of Frederick L. Hoffman to demonstrate the "substantial grounds" on which their discrimination policy was based.

THE RISING CAREER OF A YOUNG ACTUARY

Frederick L. Hoffman boasted a recent publication that made him uniquely qualified for the task Prudential had in mind. Hoffman had published an article in the prestigious journal *Arena*, in which he displayed unusual actuarial talent and opinions on the Negro Problem conveniently well matched to those of Prudential. Using mortality tables gleaned from the U.S. Army and the Hampton Institute (the first chartered college for African and Native Americans), Hoffman presented hard numerical data he claimed would support the popular myth that African Americans faced extinction because of racial inferiority, and refute the equally popular fear that a spike in the black population might lead to Negro supremacy. Congenital poverty, reassured Hoffman, wrought by, "the gross immorality, early and excessive intercourse of the sexes" caused both unsanitary living conditions and an untenable and irreversible rate of venereal disease among blacks. In combination with a tuberculosis rate that was 50% higher than for whites—also the result of "general intemperance"—poverty and disease demonstrated the inferior vitality of the black race. The African American population, Hoffman concluded, would never surpass the white; indeed, it was doomed to dwindle and die out. "Something must be radically wrong in a constitution thus subject to decay," he remarked. "Even if he be placed on equal grounds [to the white] he still will exhibit what an eminent writer calls 'his race proclivity to disease and death'."[17] The article attracted considerable attention and much praise, and Hoffman was invited to become a regular contributor to the insurance trade journal the *Spectator*.[5] (p. 115)

The genius that made Hoffman's article such a success was not necessarily his use of data, but that he had collected numerical figures on the health and mortality of African Americans at all. In the post-bellum United States, institutions and scientific bodies were only beginning to hunger for numerical data. States that collected vital statistics did so on a limited basis. Of the southern states, only Alabama maintained a State Bureau of Vital Statistics, and no state registration area in the country recorded information on the births and deaths of blacks.[5] (p. 117) Experts based their statements about population and health on estimates and on the general observations of physicians. Even insurance ratings tables, said to be utilized with such mathematical care, were based on vital statistics imported from England, and had little to no relevance to the experience of American populations.[18]

Hoffman's efforts to collect and analyze data set him apart from most speakers on the topic of racial destiny, and—however spuriously—his national origin suggested arithmetical expertise, as Germany was the world seat of statistical development in the late 19th century. In fact, Hoffman had no formal scientific or statistical training. What he lacked in academic training and vocational accomplishment, however, he made up in determination and painstaking attention to detail. By 1894 he had amassed a library of more than 1,200 books that included statistics from the Treasury Department, reports on labor, internal commerce reports, and reports from every board of health in the United States. His personal library was so copious and became so well known that in later years the U.S. Bureau of Labor Statistics used it as a source of official data.[5] (p. 96)

Two months after the New Jersey legislature passed its anti-discrimination act, Prudential's head actuary invited Hoffman on an expenses-paid trip to Newark and New York City to discuss the statistical methods he employed in the *Arena* article. "I was horrified at their extravagance," Hoffman confided in a letter to his wife. But he added, "This interview will lead to a position. Wait and see."[5] (pp. 98–99) And it did. Four months later, Hoffman traveled back to New Jersey to begin his long career as a statistician with the firm.

Prudential assigned Hoffman to the actuarial branch, the department responsible for technical advice to the company. Employees of this division determined the basis on which the company issued policies, computing premiums, reserves, and other values to match profits with death rates and the cost of policies.[19] In a sense, actuaries oversaw the company's financial stability. Conflicts between the interests of corporate leaders and the confines of basic math, however, often resulted in friction between executives and actuarial staff. Actuaries found themselves particularly vulnerable to pressure from their employers to manipulate their calculations for the corporate good. Early meetings intent on founding a professional organization for collaborative work among actuaries stressed the need to do so "on so broad a basis as to be free from the sway and the suspicion of private and personal interests."[18] (p. 18) Professional actuaries saw as much as sensed the immense monetary interests dependent on their science, and even the most scrupulous among them would have needed to maintain a constant moral vigilance. By the 1890s, it had become standard for insurers to call upon their actuarial staff for statistical arguments, legitimate or otherwise, with which to defend company profits against legislation.

A combination of skill, financial reward, and ideological serendipity fueled the successes of Hoffman's early work at Prudential. Hoffman had long believed that poverty was congenital, and that those born into it could not be remedied by uplift programs.[1]

THE RISING IMPORTANCE OF A YOUNG ACTUARIAL FIELD

Within weeks of the publication of *Race Traits*, numerous societies called on Hoffman to speak and invited him to submit further writings. The 27-year-old Hoffman found himself an established and sought-after figure in the actuarial sciences. Prudential fast accommodated his new success and employed him in the company's seemingly endless legislative fights.[5] (p. 104) In 1901 the company created a new statistical department and appointed Hoffman as its head.

The position as head statistician conferred a great degree of freedom on Hoffman's career, enabling him to pursue work of his own choosing. Both his methods and his results became increasingly accurate as the years progressed. Hoffman had always been a punctilious worker, and the increase in rank and flexibility at the Prudential allowed him to engage in work whose outcomes could be more "free from the taint of prejudice." From the newly founded statistical department, Hoffman began his labors in earnest, particularly the work of redrafting the tables on which insurance industry rated the worth of lives.

In a sense, Hoffman's insistence on the use of medical statistics and more refined mathematical analysis was a call for more cooperation from those in other fields. He demanded a cross-pollination of information and skills that could lift insurance underwriting—and coincidentally the study of public health—into a scientific realm. As long as debates in these fields were conducted in abstract and ideological terms, the contender with the most social capital would hold sway. But when data could be used as the basis of discussion, those with the most convincing mathematical techniques would influence the results far more. This shift was particularly useful in helping the insurance industry transcend its low moral standing, but it quickly became indispensable in many other areas of public debate. It fueled a powerful demand for data, as well as the development of refined statistical methods, and the increasing influence of professional expertise in policy formation and social debate. The format of *Race Traits* was adopted as a standard model in many fields affected by this shift, despite the subordination of scientific methodology to ideological ends in Hoffman's work.

Though he was one of its most influential figures, Hoffman did not single-handedly change the art of actuarial work into a science. Throughout the 1890s, an increasing complexity of actuarial duties and a simultaneous rise in professional recognition were already making actuarial sciences a more dynamic field, one with widened applications and broadened responsibilities.[20] (p. 385) Advances in modern scientific method further propelled both the development and uses of statistical and actuarial skills. The popularization of the germ theory in the 1870s introduced bacteriology as an influential and, in particular, quantifiable discipline. New technologies made diagnostic criteria more accurate, quantifiable, and fair, raising the standards of medical ratings and thus improving the profit margins of the insurance companies that embraced them. At the close of the century, actuaries were making use of data gathered from the biochemical laboratories and x-ray machines of their own home offices, having in the patient charts of their companies' clients an undreamed-of trove of population statistics.

By the turn of the century, Prudential and other major companies had become leading contributors to the nation's vital statistics, and important official organizations often called on the industry for help. Metropolitan Life's statistical bureau, for instance, responded to thousands of questions each year from physicians and others seeking information on vital statistics and demographic research, including state legislatures and local authorities in need of data for birth and death registrations.[20] (p. 437) Hoffman, who was a powerful advocate of uniform recordkeeping, in particular of accidents, births, and deaths, was again suited to the task. Though Prudential remained his primary employer, Hoffman contributed studies and addresses to dozens of professional organizations and government bodies during his career, from the National Academy of Science to the Belgian National Cancer Congress.

CONCLUSION

Hoffman earned his eminence in the history of actuarial and public health. The outpouring of studies he conducted during his career contributed vastly to these fields, but as Du Bois and Miller demonstrated, the early work that brought him to prominence was heavily flawed. Brian Glenn reminds us that "almost every aspect of the insurance industry is predicated on stories first, then numbers." Insurance policies rely on a series of narratives about risk and responsibility, which can be used to open tremendous opportunities for entrepreneurial insurers. They do so by claiming mastery of the most credible (and therefore powerful) paradigm of modern social thought: science. "The myth of the actuary," writes Glenn, "is the idea that there is a reality in the world that can be captured by rational choice models and statistical analysis—and that insurance companies do this ethically, objectively, and 'correctly.'"[8] (p. 132)

Hoffman is an important figure because of the example he provides of the self-validating ideology of science and progress. The claims he made about his own methodology and the access it provided to complete knowledge—the promise that he could examine a series of numbers and know, infallibly, the truth—invoked the "myth of the actuary" as well as its underlying myth of progress. As a professional actuary, Hoffman's duties included the establishment of different monetary values for human lives, and the creation of tables whose use would facilitate corporate competition. In a very real sense, he stood at the intersection of two related discourses: progress and profit. In this sense, *Race Traits* represented a meeting of the social Darwinism of the marketplace with the social Darwinism of racial ideology. By allegedly demonstrating that inclusion of an "inferior" race dulled the company's competitive edge, his article reflected a confluence of the social and scientific influences of the late 19th century. Prudential's sponsorship of the project illuminates the relationship between racial ideology, corporate profit motives, and the ideology of profit, an overlap evident throughout the history of the industry.

Prudential and Hoffman aimed to turn the racial fantasy of the extinction hypothesis into hard scientific numbers that could be deployed for both short- and long-term ends. In the short term, they helped stop the progress of anti-discrimination legislation. The implicit long-term goal was maintenance of the racial status quo. More than proving the uninsurability of the American Negro, Hoffman's publication demonstrated the social and economic power of statistical methods, and the ease with which they could be mobilized to buttress the interests and practices of private industry and white supremacy.

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