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Introduction

READERS WHO opened the *New York Times Magazine* on the morning of January 15, 1995, learned something surprising and sensational. Thousands of nude photographs, including those of prominent public figures such as George H. W. Bush, Bob Woodward, Meryl Streep, Hillary Rodham Clinton, and Diane Sawyer existed in the Smithsonian Archives, readily available for public viewing. Adding fuel to the fire, Ron Rosenbaum, the journalist who broke the story, claimed that the photos were part of a nefarious eugenics-inspired plot, research undertaken at the nation's universities that evoked "the specter of the Third Reich."¹

The nude photos that Rosenbaum discovered were taken decades earlier, when the pictured individuals were young adults attending college. For much of the twentieth century, a remarkable number of U.S. institutions of higher education mandated that their students undergo an annual physical exam, including a posture evaluation. By the mid-twentieth century, most schools had adopted camera photography to assess human posture, requiring students to pose nude or seminude for the pictures. What had become a ritual on nearly every college campus in the United States would come to an end by the early 1970s.

Written twenty years after the closure of these programs, Rosenbaum's piece sparked outrage among alumni across the nation, placing university administrators and lawyers on the defensive. Soon after the exposé, most of those named—and even unnamed—universities and colleges ordered their archivists to destroy institutional holdings related to the practice. Within a matter of months, decades of recorded history

had either been shredded beyond recognition or gone up in smoke. It was a decisive and, to many onlookers, triumphant end to an ostensibly dark chapter of U.S. history. Since then, most journalists and scholars have remained silent on the matter, seemingly content to lay an unsavory chapter of history to rest.²

Slouch revisits these events to gain a fuller and more nuanced perspective on the history of the posture sciences, of which posture photography was but a part. To get at this history requires close scrutiny of the ways in which culture and politics come to inform certain scientific endeavors and, in turn, how widely accepted scientific facts influence the social fabric of everyday life. It requires adopting a critical stance when faced with seemingly self-evident claims, such as Rosenbaum's portrayal of mid-century posture examinations as "bizarre," a "pseudoscience" even.³ If Rosenbaum was right, then how do we explain the fact that to this day, approximately \$1.25 billion is spent annually worldwide on posture-enhancing devices and fitness programs.⁴

It turns out that the scientific concern for human posture has a long and complicated history, attracting a wide array of professionals in medicine, education, and biology, as well as myriad health culturists and journalists. Indeed, for much of the twentieth century, Americans were told that they were living through a poor posture epidemic that, if left unchecked, would lead to widespread illness, disability, and even death.

The first recorded study to report a poor posture epidemic—dubbed the "Harvard Slouch" study—appeared in 1917.⁵ University physicians found that 80 percent of students exhibited significant bodily misalignments and worried that the future leaders of America would end up chronically ill or permanently disabled. In the decades to follow, the U.S. military, secondary schools, industrial workplaces, and public health agencies would conduct similar studies, each coming to the same conclusion: that slouching was rampant in America.

This was not the first time that scientists and other social commentators expressed an interest in human posture. Since the time of Plato, naturalists, theologians, and philosophers in the West have remarked on the uniqueness of human posture and bipedalism. To many early Christian thinkers, human uprightness was understood to be a sign of

divinity, an attribute that indicated proximity to angels, God, and the heavens. Enlightenment thinkers who saw the world through more secularized eyes believed that human posture was essential for rationality, right living, and self-discipline. Yet while anatomical erectness was important to the very definition of humanness, few scientists devoted their entire careers to studying it.⁶

This would change by the turn of the twentieth century, when poor posture became medicalized, in large part due to the new interest in the evolutionary sciences. After the publication of Darwin's *On the Origin of Species* (1859) and *The Descent of Man* (1871), human posture took on a new relevance. Prior to Darwin, it was widely accepted that the human brain—and thus human intellect—drove human evolution. The nineteenth-century ubiquity of skull collecting reflects the pre-Darwinian assumption that human cranial growth dictated all other advancements and development, including the acquisition of upright standing and bipedalism. Darwin, by contrast, believed that humans descended directly from simians through a gradual process of natural selection, and argued that upright human posture preceded the evolution of all other distinctive human characteristics.⁷

Darwin's posture-first theory of evolution created both intrigue and fear. If human intellect was no longer the prime mover that distinguished human and nonhuman animals, then it appeared that only a mere physical difference, located in the spine and feet, separated humankind from the apes. Human superiority seemed more fragile than ever. Though controversial, Darwin's explanation held an appeal, especially to those trained in anatomy and medicine. It was a Dutch physician-turned-paleoanthropologist, after all, who would become one of the most well-known scientists to offer material proof of Darwin's posture-first theory. In 1891, on the Indonesian island of Java, Eugène Dubois discovered human fossil remains that would come to be known to the scientific world as *Pithecanthropus erectus*, later redesignated *Homo erectus*.⁸

Applying the scientific study of nonliving fossil remains to current-day living populations of people—what would become the study of evolutionary medicine—early twentieth-century scientists began to

argue that the human body was poorly adapted to the modern industrialized world, an evolutionary weakness that resulted in musculoskeletal pain, prolapses, and chronic disease.⁹ While theories abounded as to why the human race seemed to be struggling with this most basic of species attributes, many agreed that the demands of modern, civilized life were to blame. From the introduction of mandatory schooling and assembly-line production to increasing urbanization and motorized travel, a large number of Americans appeared to be more sedentary than ever, hunched over workstations, slumped in school desks, and dependent on trains and cars for transport rather than their own two feet. Sedentariness did not mean leisure, but rather fixity. Contemporaries liked to use the example of a tailor: tailors labored with their hands but otherwise remained stationary, often fixed in a faulty, slumping posture.

Hence, unlike earlier eras when faulty posture was seen as low class, rude, or an indicator of a lack of civility, by the early twentieth century it became a quintessential marker of civility, albeit one that pointed to the negative consequences of too much civilization, or “overcivilization,” as contemporaries put it.¹⁰ Moving beyond manners and breeding, posture maintenance became a problem for anyone touched by modern industrialized life.

Such a dire outlook on the state of human health in the industrialized world led certain physicians and educators in the United States to create the American Posture League (APL) in 1914, an association that would grow in membership and public visibility well into the mid-twentieth century. The APL married the theoretical findings from evolutionary scientists to the practical tools of the then “new public health” movement. New public health proponents, medical historians have shown, privileged prevention over cure, and utilized top-down surveillance in order to track individuals who exhibited early-stage disease or disability. The shift in emphasis to preventive medicine made a lot of sense in the wake of the late nineteenth-century discovery that microscopic germs spread diseases such as tuberculosis and other contagious infections. In the absence of effective therapeutics such as antibiotics, many practitioners put their efforts into disease prevention since cures seemed so

elusive. These new public health systems created such a level of public fear, historian Nancy Tomes argues, that “germ panic” became commonplace within U.S. culture.¹¹

What is striking about the poor posture epidemic is that it gained legitimacy and public support without evidence of a contagion. The epidemic was thus defined more by lifestyle and individual behavior than germ transmission. While the germ theory brought about a reductionistic clarity concerning the spread of contagious disease, it did little to explain why certain individuals, when exposed to infectious microorganisms, would fall ill while others would not. The APL stood at the forefront of the post-germ theory medical effort that emphasized holistic health, insisting that postural health was necessary to the proper functioning of the musculoskeletal system and inner organs.¹² The scientists of the APL maintained that slumping shoulders and a protruding abdomen could indicate a wide variety of health conditions, ranging in severity from a deadly case of tuberculosis to scoliosis and generalized effects of old age.¹³

Slouch thus tracks an epidemic pathology that was defined as a disability rather than an acute disease. Unlike the majority of epidemics found in recorded history, the detection of a widespread problem of poor posture did not come about because of mass deaths. No one died due to slouching. And yet, posture experts argued, people who did not adequately attend to their own physique risked an early demise, for poor physical form made it more likely for infectious disease to take root. In short, postural defects begot disease, which could then result in lifelong disability. Though not a communicable disease itself, the slouching epidemic was built on the notion of social contagion, on the idea that deleterious norms, practices, and beliefs about bodily comportment could be passed from person to person if not corrected through proper measures.

In this context, the physical exam became paramount. And unlike height and weight measurements, posture assessments proved to be one of the quickest and least expensive tools in the new public health arsenal. With a trained gaze acutely attuned to even the slightest anatomical misalignment, health experts readily diagnosed extant and potential

disease states based on a simple and quick full-body view of the examinee. In many settings, the posture exam served as a litmus test to distinguish the able-bodied from the disabled.¹⁴

It is little wonder that one of the first reports of the poor posture epidemic would come from Harvard University. These students, after all, were inundated by the overcivilizing influences of modern society; they were white men with the social and economic capital to pursue book learning and an advanced education rather than engage in hard labor. Yet despite their many advantages, white middle- and upper-class Anglo-Saxon men at the time lived in fear of disabling weakness. The perceived threats were many. Women were making concrete political gains, earning the right to vote with the 1920 ratification of the Nineteenth Amendment. Immigrants and Black American men donned military uniforms during the Great War, leading to a victory for the Allied forces. Talk of white race suicide filled the lecture halls and the pages of the daily newspapers. The popularity of social Darwinism and eugenics fueled the white masculinity crisis of the early twentieth century.¹⁵

But white men of privilege were not alone in their fear of physical weakness and disability. Anxious to dispel the notion that theirs was the “weaker” sex, women physicians and physical educators encouraged college co-eds and school girls to take up physical fitness classes, where posture work and measurement became a mainstay. African American doctors fretted about widespread posture faults among poorer Black Americans, incorporating posture health examination and education into the National Negro Health Week program. Similarly, Jewish American physicians who assessed the posture of Eastern European garment workers insisted that industrialists provide laborers with “posture-right” chairs and workspaces.

The posture crusade, in other words, cut across racial and ethnic categorizations. Men and women of all races lived with the possible fate of acquiring a defective posture. In this respect, all of these groups shared a common goal of separating themselves from the ultimate other—namely, the disabled.¹⁶ Disability historian Michael Rembis notes that while scholars have written at length about the racism of the American

eugenics movement, they have paid far less attention to how the movement was also “infused with virulent ableism.” “Eugenics at heart,” he concludes, “was a politics of normalization . . . and optimization.”¹⁷

Normalization was central to the American anti-slouching campaign. The demand to stand straight carried immense moral and medical weight. Straightness signified health and youthful vitality, but also upright character and sexual chasteness. It is no accident that by the early 1940s in the United States, “straight” connoted heterosexuality, while “bent” signified homosexuality. Linguists George Lakoff and Mark Johnson contend that at the deepest levels of conception and understanding, the notion that “up is good” and “down is bad” shapes our language and the way humans make meaning out of the wider world around us. In other words, the inherent positive valuation of “up” is rooted in human bipedalism.¹⁸

Determining the degree to which the anti-slouching campaign was eugenic or neo-eugenic requires careful study. Posture scientists featured in this book did not speak in terms of Mendelian genetics, heredity, or controlling reproduction—the kind of “hard” eugenics associated with the American Eugenics Society and Nazi Germany, where forced sterilization and genocide, respectively, were used as methods of ridding society of “undesirable” traits and human beings. Rather, the posture crusade appealed more to a theory of “euthenics,” defined as “right living,” which is sometimes characterized as “soft” eugenics. Soft eugenics is often portrayed as unique to Latin American history, but the U.S. poor posture epidemic suggests otherwise.¹⁹

As *Slouch* demonstrates, the manufacture of posture panic served as a powerful motivator and a ready-made disciplinary tool, deployed for multiple political ends in the United States throughout the twentieth century. Arising at a time when the nation was attempting to become a global military and industrial power, posture surveillance was taken up by the U.S. Public Health Service, the military, and educational institutions as a way not only to colonize other peoples, but also to regulate “deviant” bodies and “abnormal” behavior internal to the nation.²⁰ Posture crusaders promised that their work would control disease and political unrest, maintain industrial supremacy, and promote physical, aesthetic,

and behavioral homogeneity. In this respect, the anti-slouching campaign reconceptualized centuries-old hygiene concerns regarding dress and exercise, making human posture an indicator of national strength, population health, and fitness.²¹

Of course, the intersection of race, class, age, and gender often determined the degree of poor posture's disabling effects. A middle- to upper-class white person with a postural abnormality would have a greater chance of securing an education and gainful employment than a non-white person. Still, even for the most well off, discrimination was a constant battle. The famous early twentieth-century writer and New York intellectual Randolph Bourne, whose spine was noticeably hunched and curved from a case of skeletal tuberculosis as a child, faced repeated marginalization and rejection in lodging and employment, and from potential love interests.²² Born with spina bifida forty years after Bourne's death in 1918, Riva Lehrer recounts being an object of scorn and unwanted stares as a teen with "a curved spine and very large orthopedic shoes" growing up in Cold War America. Or take Sunaura Taylor, who, born in 1982 with arthrogryposis, grew up being compared to animals. She writes, "I have been told I walk like a monkey, eat like a dog, have hands like a lobster, and generally resemble a chicken or penguin." A disability and animal rights activist, Taylor owns her animal identity, seeing it as integral to her humanity. And yet she also fully realizes that animal insults in a Westernized culture come from a long tradition of seeing nonhuman beasts—animals and humans who look like animals—as unworthy of care and rights, lacking full subjectivity and autonomy.²³

While today the outsized concern for poor posture may seem quaint—or worse, deeply ableist—it is important to recognize that noncommunicable epidemics are not simply a thing of the past. The so-called obesity epidemic shares many similarities with the poor posture epidemic of yesterday; in both cases there is a sense of urgency and fear, as if a communicable biological contagion were involved. Feelings of stigma and discrimination experienced by those with nonnormative bodies are also a shared commonality.²⁴

I make no claim about the realness of the epidemic or the degree to which poor posture was and is debilitating. Rather, as a cultural historian, I see past and present worries concerning poor posture as part of an enduring concern for so-called “diseases of civilization.”²⁵ Since the Enlightenment, if not earlier, the belief that civilized society causes sickness has served a variety of political and social ends, with the medical and the moral superimposed on each other. In most if not all cases, it is the “civilized” who identify, worry, and fall victim to such diseases, while they pin their hopes for a cure on fabled peoples and places supposedly untouched by civilization. During the heyday of European imperialism and colonization, the myth of the “noble savage” became part of political criticism and commentary, a critique of the problems that plagued civilized societies as they increasingly moved away from “nature” toward human artifice. The ills caused by growing urbanization during the nineteenth century led the American educated elite to posit that cities were the main culprits of disease and that more “primitive” living, ostensibly found in bucolic countrysides or among indigenous peoples, offered the path to health. Once monogenism and the evolutionary sciences became widely accepted by the turn of the twentieth century and all of humankind became biologically tethered to the deep past, true health seemed to exist only in early human origins. In this context, surviving populations of presumed “hunter-gatherers” became model organisms for research in evolutionary medicine and public health, much as it still is today.

I depict the experts who studied, researched, and wrote about the importance of human stance as posture scientists. This is a shorthand way to describe a vast professional network of physical educators, physical anthropologists, evolutionary scientists, efficiency engineers, commercial industrialists, physicians, and physical therapists. For the first half of the twentieth century, the APL served as the professional organization where individual work and research could be shared and promoted. But since there was no official journal for the APL, most members published in academic journals keyed to their own methods and disciplines of study. After the APL dissolved in 1944, human posture research became more specialized, and, in a certain sense, siloed.

The following account pulls together some of the disparate threads of this post–World War II history by looking at the ways in which the Kennedy administration and institutions of higher education supported human posture research as a means of fighting the Cold War by proxy.

Ultimately, what bound together the professionals whom I designate as posture scientists is a nascent commitment to evolutionary medicine, of which a comprehensive history has yet to be written. The marriage of the evolutionary sciences to a concern for diseases of civilization set the stage, I argue, for the existence of noninfectious epidemics, such as poor posture, and eventually obesity, ADHD, and diabetes, along with many others. I have taken the liberty of categorizing the widespread health concerns and interventions regarding poor posture as an epidemic, even though the historical actors featured in this book do not use that precise word. In their collection of data, use of statistics, and reliance on the language of health risk, posture scientists deployed tools of tracking and surveillance to make visible a problem that was epidemic in scale.

In addition, using the epidemic frame to explain the rather sudden and overwhelming twentieth-century concern about poor posture allows me to problematize, in a more obvious way, distinctions that are often made between real epidemics and not-real epidemics. In his 1992 field-defining essay, “Explaining Epidemics,” historian Charles Rosenberg maintains that “A defining component of epidemics is their episodic quality.” “A *true* epidemic is an event, not a trend,” he continues. “It elicits immediate and widespread response. It is highly visible.” Such a definition privileges acute and deadly health events but does not adequately capture chronicity, or diseases that evolutionary scientists insist are inherent to modern life because the human body was somehow not built for it.²⁶

Slouch thus opens with the “outbreak” of the poor posture epidemic, which began with the discovery of human fossil remains that, to many scientists, proved that upright posture predated human intellect. As soon as the physical record was revealed, scientists began to fret about the inherent anatomical weakness of the human upright stance, specifically the highly vulnerable abdominal cavity that, while responsible for

protecting vital organs, sagged under the constant weight of gravity and modern life, a problem from which humankind's quadrupedal ancestors did not suffer. These scientists thus discovered a population-wide problem that, unlike more acute disease states, had its initial occurrence in the far distant past, when early humans first adopted bipedalism as their primary mode of locomotion. With the help of medical doctors and physical educators who developed standardized measures and tests to determine normal from abnormal human posture, the epidemic became a statistical, objective, and visually proven fact. Along the way, photography became the preferred clinical tool to both evaluate and record posture, with hundreds of thousands of Americans stripping down to the flesh so that an examiner could get an accurate read. While at first the practice raised concerns about propriety and privacy, it soon became accepted convention, making it relatively easy for scientists to continue to demonstrate the existence of the epidemic.

The middle section of the book charts the spread of the poor posture epidemic, a process that, in the absence of a biological contagion, occurred largely by way of public health awareness campaigns and the commercial marketplace. A variety of stakeholders—schoolteachers, shoe companies, clothing manufacturers, public health officials, medical professionals, beauty culturists, and the popular press—worked to convince the public to engage in various poor posture detection and improvement initiatives, wellness programs that perpetuated disability stigma by encouraging the belief that health and ableness could be purchased through various consumer goods and sustained attention to one's physique. This was not simply a top-down process. Some of those who wanted to correct their posture faults wrote letters to orthopedic physicians and magazine advice columnists, looking for a cure. In the workplace, labor unions insisted on posture health awareness programs and agitated for the purchase of ergonomically sound seating systems.

The final chapters of the book focus on the demise of the poor posture epidemic, a slow process that would begin with the mid-century discovery of antibiotics but be quickly hastened with the countercultural revolutions of the 1960s. Throughout much of the twentieth century, scientists relied on both a steady supply of compliant university

students and military draftees who would pose nude (or almost nude) for the recording and compilation of posture health on a population-wide level. The tradition of performing large-scale physical fitness assessments in order to “weed out” disabled bodies arguably had its beginnings in the United States with the practice of slavery, and more specifically with the history of the slave auction block. Stripped naked, enslaved people endured dehumanizing and invasive physical assessment at the hands of enslavers who wished to determine the “soundness” of their potential human property.²⁷

Though not equivalent to the slave block, the posture assessments that became routine practice for much of the twentieth century in the United States did demand that a significant number of Americans stand unclothed in front of experts who had the power and tools not only to diagnose but also to make a permanent photographic record of the exam. It was only after the civil rights and women’s movements, as well as the anti-Vietnam War protests, that a majority of Americans repudiated the practice. Suspicions of the real intent behind such educational and scientific initiatives also animated the disability rights movement, activists who legally challenged the practice of employment- and school-based discrimination based on outward appearance and perceived ability. Ultimately, the largely unattainable standard of ableness set into motion by the poor posture epidemic would give way to late twentieth-century political and cultural movements that promoted and celebrated bodily and cognitive diversity.

While the history of the poor posture epidemic cuts across gender, race, and class, it is nonetheless driven by ideals of whiteness and ableness, by scientific racism as well as scientific ableism. Indeed, the very notion of diseases of civilization is a construct of the ruling class who, in creating the myth of the happy “noble savage” or healthy “hunter-gatherer,” put forth an origin story that places living indigenous peoples and their presumed special connection to the “natural” world in a time and place before white ablebodiness could become a reality. “Primitive” living thus becomes an evolutionary stage necessary to the perfectibility of the white body. This worldview is not only inaccurate. It is harmful, for it attempts to strip indigenous peoples of their own

agency by insisting on their immutability, treating them as biological organisms frozen in time.

This history is thus one that cannot be easily bound to one nation-state or place. Since the poor posture epidemic was rooted in the logic of settler colonialism and empire, it operated on a far more global scale, built on imaginaries that had real consequences for the colonized. For the purposes of this book, I have sought to explain how and why a wide range of U.S. middle-class professionals came to believe in the epidemic's existence, and yet I also trace how making the epidemic a reality rested on the ability and power of these same professionals to designate certain populations of people as "primitive" in the first place.

Similar to their professional peers of a hundred years ago, evolutionary scientists working today continue to express concerns about how the human body is inherently ill-equipped to meet the demands of the computer age, seeing the slouched, largely sedentary existence of those living in the industrialized world as a primary cause for disabling back pain. This has led certain researchers, whom I discuss in the book's epilogue, to conduct studies on the presumed pain-free, cardio-fit hunter-gatherers living today in the Americas and Africa. This kind of research has been taken up by many in the fitness and wellness industry, by Western entrepreneurs who then create commercial goods in the form of "paleo" diets, exercise, and, most important for this book, posture surveillance practices. What good posture means, if anything, to native peoples who are the object of current scientific researchers is a topic that I hope will be taken up in further studies.

What these modern-day research efforts demonstrate is that human posture is still believed to have predictive power concerning future health, despite the existence of compelling scientific studies that demonstrate otherwise. Take, for example, *New York Times* health columnist Jane Brody, who as recently as 2015 proclaimed: "Slouching is bad. It's bad not only for your physical health, but also for your emotional and social well-being." Or consider how, a year later, *Glamour* magazine advised its readers to turn off their "bitch switch" through posture improvement. "Good posture increases testosterone and . . . lower[s] stress," the magazine explained. "It's science, bitches. Try it!"²⁸ Far more

disconcerting are reports of Black Americans being excluded from juries because of bad posture. Meanwhile, Silicon Valley is busy creating new apps and biometric tools that can track an individual's sitting and standing posture at home and at work, adding yet another feature to our smart phones and Fitbits.²⁹

In some ways, then, the epidemic seems never to have fully resolved, or at least the fears that accompany failing human posture and its negative health effects have never died out. To be sure, talk of a slouching epidemic may have subsided, but many of the same posture-promoting practices and beliefs are still alive and well today, uncritically accepted as self-evident truths.

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