

The Body Electric: How Strange Machines Built the Modern American. *By Carolyn Thomas de la Pena*. New York: New York University Press, 2003. xvi + 328 pp. Illustrations, bibliography, notes, index. Cloth, \$35.00. ISBN 0-8147-1953-8.

Reviewed by Karen Halttunen

“Quacks and quackery,” “medical instruments and apparatus,” “electrotherapeutics”: the designated subject categories for this book fail to do it justice. *The Body Electric: How Strange Machines Built the Modern American* is a fascinating study of “the relationship between technology, energy, and the body in modern American culture” (p. xi). Since the mid-nineteenth century, Carolyn Thomas de la Pena demonstrates, Americans have used an inventive range of machines and technological devices in an effort to restore vitality, cure disease, and build stronger, more vigorous bodies. To dismiss as mere “quackery” such outmoded technologies as early weight-lifting machines, electric belts, and radium water jars is to reject out of hand their historical significance, in service to the same Whiggish narrative of medical science that informed the American Medical Association’s opposition to these therapeutic practices. The guiding insight of this study is that “when we allow a technology intimate entry into our bodies, we become, on some level, complicit in the culture that technology represents” (p. xii). The body technologies she explores served to domesticate frightening new forms of energy in a rapidly industrializing society, mediating between the growing fear of machines and an expanding sense of their ultimate promise, and propelling the human body itself into the modern era.

The Body Electric focuses on three areas of body technologies that emerged over three overlapping time periods, between 1850 and 1950, and promised three different modes of revitalization. First, the muscle-building machines of the mid- to late-nineteenth century promised to “unblock” energy already present in the body. The first mass-marketed American machine to link technology with physical health was the Health Lift, designed by Bostonian David Butler in 1870, which targeted tired businessmen suffering from neurasthenia. The overwhelming sense of physical depletion that characterized that epidemic ailment was widely attributed to Kelvin’s second law of

thermodynamics, “the universal tendency in nature to the dissipation of mechanical energy” (p. 27). Proper muscle-building, according to Butler and his followers, would offset entropy by tapping the body’s energy reserves and diffusing them, not only to the working muscle, but also throughout the body. This theory influenced other fitness entrepreneurs, such as Dudley Allen Sargent, first director of physical education at Harvard, who built a graduated weight-training system that emphasized symmetrical development and precise measurements of muscle strength, and Gustav Zander, who installed his equipment in spas and health resorts throughout the country in the early twentieth century. The design of Zander’s machines, Thomas de la Pena argues, “placed the user in the heart of a machine’s intense power,” thus affording tired businessmen “a chance to defuse fears of industrialization through their own bodies” (p. 84).

Whereas early muscle-building machines offered to “unblock” the body’s stored energy, the electric invigorators sold between 1870 and 1930 promised to “transfer” energy into the body from an outside source. Based on the theory that the human body was itself an electric machine, and disease the manifestation of some disturbance in its electric forces, both licensed physicians and irregular therapists began regularly administering electric treatments for a panoply of human ailments, including paralysis, headaches, constipation, chronic fatigue, and sexual dysfunction. The faith in therapeutic electricity grew as electrification was transforming the nation’s cities and, more gradually, its homes, and as “electric fantasies” (p. 99) of infinite power, beauty, and progress pervaded popular culture. Electric belts and batteries, ozone generators, and violet-ray machines flooded the market, at prices that made electric therapy more economically accessible than earlier weight-training technologies. One of these devices was the I-ON-A-CO, designed by real-estate developer Henry Gaylord Wilshire in 1925; it was a horse-collar-like device, available in street-front therapy centers, that purported to cure disease by electrically magnetizing the body’s iron. Electric fitness therapies, Thomas de la Pena argues, promised to allow “the body to rightfully claim the industrial energy it deserved,” and thus “become a superior being” (p. 120). Electricity-induced superiority included invigorated sexual performance, through special belts and attachments designed to electrify the male genitals. For American men fearful that

masturbation had destroyed their potency, and daunted by the new sexual demands being made by the New Woman, the new electric devices held out hope of renewed manhood.

The most radical solution to the perceived problem of human entropy was, however, offered by the radioactive elixirs marketed between 1910 and the late 1930s, which promised actually to “create” new energy within the body. Soon after the discovery of the new element in 1902, Americans became enamored of radium’s promise of inexhaustible energy. That promise was actively promoted by an electrical engineer named William Hammer, who traveled throughout the country promoting radium therapy to physicians and offering entertaining lectures filled with radium tricks to a public seized by “RadioMania” (p. 180). However fascinated Americans were by test-tube radium, they were drawn more powerfully to radium ingested into the human body to enhance its physical and mental potential. In the 1920s, radium water jars—with names like Vitalizer, Revigator, and Vigoradium—appeared on the market, along with a bottled radium drink called Radithor, which offered “the first permanent solution to the nineteenth-century’s ‘neurasthenic’ paradigm” (p. 206). Only with the “fallout” nightmares of the postwar period did the medical promise of radium begin to lose its glow.

The Body Electric is a well-written, strikingly clear and well-organized, and highly engaging work of scholarship, based on impressive research in business and advertising collections, the archives of the American Medical Association, and the mass media. Thomas de la Pena isn’t fully persuasive in arguing that health technologies like the Pulvermacher Electro-Galvanic Belt or the Revigator enjoyed wide followings, though she does cite sales statistics where possible. Perhaps her best case for the impact of these therapies is their morphed survival into various modern forms, most obviously in present-day weight-training machines, but no less persuasively in the ongoing popularity of technologically powered superheroes like Spiderman, who owed his powers to a bite by a radioactive spider. Whatever weight is given to her argument for the quantitative dimensions of these therapeutic enthusiasms, her assertion of their enduring influence is compelling. *The Body Electric* makes an important contribution to a subject area not included on the copyright page: the history of the body. And it makes a good case for

future studies of the machine–body relationship that would extend the focus of previous work in this area to consider factory mechanization and workers.

Karen Halttunen is professor of history at the University of California, Davis. She is the author of Confidence Men and Painted Women: A Study of Middle-Class Culture in America, 1830–1870 (1982) and Murder Most Foul: The Killer in the American Gothic Imagination (1998).