

Henderson's Equation

By Jerome Lowenstein

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Dr. Alma H. Bond, Reviewer

From the first words of Lawrence J. Henderson's opening lecture, "It all begins with water," Aaron Weiss was riveted by the unconventional young professor's way of thinking. Henderson's quest for a greater understanding of the world had led him from the simple study of acid-base equilibrium to an examination of cosmic questions related to the "fit" between the properties of the most basic elements-hydrogen, carbon and oxygen-and how society, viewed as a regulated system, bears remarkable similarities to this fit. A systems theory advocate, Lawrence Henderson's studies and writings gave rise to the concepts of dynamic equilibrium and to the Gaia hypothesis, which views the earth as a vast unified organism. As his assistant, Aaron Weiss is witness to Henderson's development of these theories. Away from New York's Lower East Side for the first time, Aaron is forced to confront the differences between his own world, with its strong family ties and deep roots in Eastern European scholarship, and that of Dr. Henderson, a leader of the Harvard establishment and a Boston Brahmin. The story is set against the background of the powerful social and intellectual forces of the time: World War I, the rise of fascism, the Sacco-Vanzetti trial, and the growing anti-Semitism at Harvard and elsewhere, and is an admirable portrayal of the difficulties faced by young Jewish scholars of the day. "TYPE=PICT;ALT=More..."

"Henderson's Equation," by Jerome Lowenstein, is a sweet, highly original work of art. Fast-moving, captivating, and seemingly simply written, it is one of those rare books that can change lives forever. I will never again look at any aspect of nature as a unit differentiated from the rest of creation without sharing Henderson's conviction that everything in the universe, i.e. the periodic table, "growing excellent grapes and making a really fine wine (p. 44)," indeed, that life itself is governed by the same set of rules (p. 38). "In some obscure manner," Henderson states, "cosmic and biologic evolution are one."

The author is a physician whose deep interest in acid-base physiology and the nature of relationships between physicians and their patients make him uniquely qualified to understand Henderson's work and theories. The book is a perfect "fit" between the author and his subject. Written in a compelling manner that will enthrall physicians and medical researchers alike, it also can be read easily by intelligent laymen, who in painless fashion will gain a great deal of knowledge about medicine and history. The book aroused my curiosity enough to motivate me to spend many subsequent hours "googling" Henderson's life and work.

A biographical novel, "Henderson's Equation" in many ways reveals more about the character of Henderson than a straight biography. Henderson, it seems to me, is an unusual choice for the protagonist of a book: Less flamboyant than most biographical subjects, he simply went about the business of his life's work. As a man of multiple talents, he spent his professional life in

chemistry, biology, physiology, philosophy, and, eventually, sociology. Originally a chemist, he diverted his interests into physiology and biochemistry, and developed a holistic philosophy centering on “fitness,” in which the inorganic environment supplies elements that nourish physicochemical processes. Henderson summarized this philosophy in his most important book, “The Fitness of the Environment.” Much of his research centered on the body’s acid-base equilibrium, which was taken up by Aaron, who early on suspected that a similar balance exists in the kidney, which “by secreting hydrogen ions, might regenerate the bicarbonate buffer (p. 144).” Henderson, in a broad leap, extended his thinking to the concept of the dynamic equilibrium of society. Despite his many interests, there was a unity in his work (not surprisingly), in which he concluded that the entire evolutionary process, including the organism, the universe, and society, is one. Dr. Lowenstein obviously was fascinated by Henderson’s findings, which I suspect led him, like Aaron Weiss in “Henderson’s Equation,” into a study of the acid-base equilibrium, and his life’s work as a nephrologist. The book is beautifully written, and in many instances, Lowenstein’s simply written style is very moving. For example, “We stood wordlessly in the kitchen for what seemed a long time before I realized that I was crying (p. 30).”

If pressed to give any negative criticism of this delightful book I would have to say that as a psychoanalyst I would have liked more psychological insight into Aaron’s need for Henderson’s love and approval. From what mysterious depths did this need arise? Why was it so strong that it dominated his life? Perhaps it was a “narcissistic object choice,” in that Aaron loved what he wanted to become. Or was it purely a love of learning, and the usual admiration for a supportive mentor? Unlike Aaron, many of us have beloved mentors, but usually the relationship runs its course and we go on to other teachers, or outgrow the need for a pundit. A hint is given in the author’s in-depth portrayal of the old Italian man, DePodesta, the most fully realized character in the book. Did Aaron have an unconscious craving for a different kind of father, which Depodesta fulfilled? Aaron’s relationship to his own father seems satisfactory enough, if not endowed by the author with great profundity, and Aaron was not so deprived of paternal love as to warrant spending a lifetime searching for it. For this reason, I found myself slightly disappointed in the book’s ending, where I had hoped to the last word that deeper insight into the relationship between Aaron and Henderson would be revealed. The author himself apparently felt a similar lack, and ended the book with “...there was no consilience, no symmetry, and no single understanding of my relationship with Lawrence J. Henderson.” But Henderson himself says, “Do not attempt to give a rational explanation for a decision that arises from deep feelings.... The art of living is in great part the art of adapting oneself to the changing pattern of external circumstances (p. 150).” That Dr. Lowenstein did very well, in what appears to be a semi-autobiographical novel about Aaron Weiss and his all-consuming relationship with Lawrence J Henderson. Despite this possible shortcoming, “Henderson’s Equation” is highly recommended for medical personnel (to whom no doubt it will bring back many memories), laymen interested in painlessly gaining scientific knowledge, and to everyone who wants a good, totally absorbing read. I loved the book, and suspect that you will, too.

About the Author

Dr. Jerome Lowenstein’s rich career in academic medicine has been devoted to teaching, research and the care of patients. He is the author of *Acid and Basics*, Oxford University Press, and *The Midnight Meal and Other Essays About Doctors, Patients and Medicine*, University of Michigan Press. Dr. Lowenstein’s absorbing interest in acid-base physiology and the nature of

relationships between physicians and patients made Henderson an ideal subject for this intellectual leader in science and medicine. Dr. Lowenstein is publisher of the Bellevue Literary Press and Editor for Nonfiction of the Bellevue Literary Review.