

Fast science: A history of training theory and methods for elite runners through 1975.

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Abstract

This dissertation examines the history of the application of science to the training of elite runners through 1975. In particular, it details the changes that occurred in the ruling theories of training within the framework of what Thomas Kuhn, author of *The Structure of Scientific Revolutions* refers to as a “paradigm shift.” The quest for the origins of training began in ancient Greece where the earliest written histories of athletics were recorded. There, according to the sophist Philostratus, a rudimentary form of periodization (a process of structuring training into phases) was born. Examination of eighteenth and the bulk of nineteenth century training practices revealed little difference in the training of horses, fighting cocks, greyhounds, pugilists (boxers), and runners. In the lead up to WWI, training could be classified as “light,” where athletes stayed competitive with very little training. Athletic training between WWI and WWII was characterized by the advent of “moderate” training loads and the introduction of innovative training methods--fartlek and interval training. Arthur Lydiard’s recommendations of preliminary marathon training for distance runners (800- 10,000 meters) in the late 1950s, along with the training of Emil Zátopek, Peter Snell, and Jim Ryun, epitomized a transition from moderate to “heavy” training loads that occurred between 1945 and 1975. Meanwhile, other eminent coaches such as Payton Jordan of Stanford University and William Bowerman of the University of Oregon offered balance to the heavy volume training approach by emphasizing quality over quantity. Following WWII, in the battle for world ideological supremacy, the Soviet Union utilized sport as a political tool to demonstrate the superiority of its communist system. Integral to achieving the best sporting results was the application of “cutting edge” sport science and the advent of modern-day periodization. The first detailed English-language overview of Professor Lev Pavlovich Matveyev’s groundbreaking theory of periodization by Frank Dick of Great Britain in 1975 caused a major shift in the paradigm of planning an athlete’s training--so much so, that by the turn of the twenty-first century, periodization formed the foundation of most modern coaching theory and practice and the basis of every serious athlete’s training.

Department

Kinesiology and Health Education

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