Explores how the idea of an average value has been misapplied to medical phenomena, distorted understanding, and lead to flawed medical decisions. Through new insights into the science of complexity, traditional physiology is replaced with fractal physiology, in which variability is more indicative of health than is an average. The capricious nature of physiological systems is made conceptually manageable by smoothing over fluctuations and thinking in terms of averages. But these variations in such aspects as heart rate, breathing and walking are much more susceptible to the early influence of disease than are averages.

It may be useful to quote from the late Stephen Jay Gould’s book Full House on the errant nature of averages: “… our culture encodes a strong bias either to neglect or ignore variation. We tend to focus instead on measures of central tendency, and as a result we make some terrible mistakes, often with considerable practical import.” Dr West has quantified this observation and made it useful for the diagnosis of disease.