A Heart-Beat Is Amplified and Then Resonates In History

Some years have been joyous, others terrifying. The trying ones are witness to terrible happenings, whether natural or contrived by man. During the congenial years, in contrast, humans are not evicted from their homes, farm lands not plundered, plagues are confined to Sunday prophesy, and most civilians die peacefully of old age. Sometimes, however, historians cannot decide whether a particular year is good or bad until viewed centuries hence.

The momentous years are crowded with meaningful events that impinge, without permission, upon the lives of the many. The effects of some, such as the 1914 through 1918 interval, are immediately apparent and their date of onset, are precisely known. Other social convulsions, such as the onset of the industrial revolution, cannot be assigned to one particular day or one special location. It is not as though an 18th Century English worker whispers to his fellow toiler, "When we finish our labors this evening, Nathaniel, let's stop off at the local tavern for a glass of ale to celebrate the morrow's onset of the Industrial Revolution."

Historians agree: some years witness startling happenings while others experience little more than the continued progressions and regressions of ongoing socioeconomic trends. But then there are years, truly peaceful intervals, with little apparent drama or turmoil; and yet, hidden somewhere in the historic fabric of those allegedly quiet years may have been an event which was recognizably epochal – but only when examined by historians centuries hence.

Consider, for example, the relatively tranquil year of 1816. James Madison of Virginia was in his second term as president; Charles Darwin was a seven year old Shropshire lad pondering whether to become a physician, a naturalist or a clergyman. John Keats, a 21 year old London medical student debated with himself whether to seek a life as a physician or complete a poem called Endymion. And the Rhode Island Medical Society was but four years old.

A 35 year old physician, Rene Theophile-Hyacinthe Laennec, practicing his clinical craft at the Necker Hospital in Paris, worries deeply about a new patient who may – or may not – be suffering from early heart disease. Physical examination, in those days, was rarely undertaken since contact with one's patient was considered unseemly. And if, on rare occasions listening to a physiologically troubled heart was required, the physician placed a silk kerchief upon the skin of the patient's chest and then placed his ear upon the silk to discern the sounds – normal or abnormal – of the patient's heart. But because of this patient's obesity, Laennec refrains from listening to his patient's heart in the usual manner. But then remembering his hobby at a flautist (and the remarkable transmissibility of sound through tubular wood), he rolls up a piece of heavy paper allowing him hear the patient's heart sounds with greater clarity. And for the next decade he improves upon the instrument – he calls it a stethoscope – and correlates the many abnormal cardiac sounds with sundry underlying organic diseases. A new science has been born.

The single, rigid wooden tube has since been supplanted by a binaural instrument equipped with flexible rubber tubing. This fundamental diagnostic tool was the first of a succession of portable instruments employed to examine the body and its orifices. These tools as well as those equipped to measure temperature and blood pressure, collectively transformed diagnostic medicine from the art of observing the patient from afar, to a more dynamic process of intruding, usually painlessly, into the inner dynamics of the body's organs so as to infer the physical nature of the underlying pathological process. Laennec's inaugural instrument gave credence to the new concept of inner illness as organic malfunction culminating in structural changes of a distinctive character; that these singular organic changes may then be recognizable; and further, that a physician might discern the *nature* of these pathological changes by meticulous physical examination – augmented now with instruments such as the stethoscope.

Medicine now entered a new and more diagnostically assertive domain: the identification of specific diseases by tell-tale diagnostic signs revealed by instruments. The 20th Century would then bring to medicine imaging technics exploiting the use of X-rays, electrophysiological diagnostic tools such as the EKG machine, and the biochemistry laboratory to analyze the patient's body fluids such as serum and urine. But all of these elegant, revelatory instruments required a beginning – and that beginning was Laennec's simple wooden tube. The crude, intuitive art of medicine was then transformed into a more exacting science.

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