

Our Founding Fathers were a product of the Enlightenment, the European movement promoting reason and the new sciences over belief systems. From the 17th century on, the "scientific method" locked horns with "tradition," "belief," and "unquestioned authority." The scientific revolution depended upon observation, experimentation, and repeatability in experimental findings. This scientific revolution happened only in Western Europe, which benefitted from a long history of knowledge acquired by Ancient Greece and Rome.

Fortunately for us, the first presidents were thinkers and believed that knowledge could progress. President Washington, not college educated, nonetheless followed the new sciences. Smallpox had decimated the Native American population, and was still a scourge that could have wiped out the American army during the Revolutionary War. Washington ordered the entire Continental Army inoculated, and after defeating the British, inoculation gained acceptance by most Americans.

Thomas Jefferson was an amateur scientist himself. From his student years at the College of William and Mary in Williamsburg, Virginia, he had always shown a keen interest in the work of Isaac Newton, John Locke, and Francis Bacon, for whom the future president would profess great admiration.

He kept daily records of his observations: rainfall, temperature, arrival of seasons, observations of birds and insects, and experiments with plants and animals. When he authorized the cross-country exploration of the Lewis and Clark expedition, he alerted them to recent findings of prehistoric creatures in Virginia and wanted reports of any other such found in the unknown territories.

During the 19th century, scientific knowledge grew, particularly in the mechanical sciences. However, science had not made much of a dent in the educational system. The majority of people relied on long held beliefs, particularly in medicine. Bleeding, leeching, cupping, and an endless variety of quack remedies (mostly alcoholic or using opiates), dominated public medicine.

Despite Louis Pasteur's discovery of germs and infection, doctors continued to treat patients with unwashed hands, and then wondered why so many died. We shudder to remember the horrible deaths of Lincoln and Garfield, both of whom might have survived their assassinations, had the doctors not been so dirty, putting unwashed fingers into wounds, probing for bullets.

President Theodore Roosevelt, well-educated and a supporter of science, prohibited the sale of adulterated or misbranded livestock and ensured that livestock were slaughtered and processed under sanitary conditions. Then Congress, under his urging, passed the Pure Food and Drug Act that prohibited the sale of misbranded or adulterated food and drugs in interstate commerce. This laid the foundation of the country's first consumer protection agency (FDA).

Science is not always perfect, however. Woodrow Wilson, a Princeton man before his Presidency, was suckered into several pseudo sciences popular in his time. He was a great believer in racial theories (inferiority of all "non-white" races), which justified his bigotry, and in a popular, unproven pseudoscience of the time, Eugenics, that not only identified human defects, but advocated cleansing the gene pool through "selective breeding" and forced sterilization of those deemed "unfit." Hitler admired Wilson and took his terrible policies to even worse extremes, leading to genocide.

Pseudoscience and politics merged in Communist Russia, with the belief that acquired traits could be inherited. Russian scientist Lysenko obliged with strange experiments cutting off rats' tails and lying that their offspring would be tail-less.

President Franklin Delano Roosevelt was clever enough to recognize the potential of nuclear power. Roosevelt surrounded himself with the brightest people available, trusting Einstein's physics and his warning that the Nazis were working on a mega-weapon using atomic power. Roosevelt also supported the medical research into Polio and inoculation against childhood diseases.

Political party affiliation did not determine the support for science by American presidents, culminating in the presidency of Richard Nixon, who created the EPA and the environmental movement. Republican presidents who followed him began to resist

scientific data on climate change, that smoking caused cancer, and valued money over public health.

Today, we have a president who broadcasts conspiracy theories, denies climate science, and promotes dubious drugs, despite medical warnings. No, Clorox will not cleanse your lungs. He gets F-minus in science and failure in leadership.

682 words

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