

HONORABLE MENTIONS AND INTERESTING MISSES

While this book was being written, many friends and associates of the author suggested the names of various historical figures who they felt might reasonably be included in the main section of the book.

Quite a few of those suggestions were adopted; others, for one reason or another, were rejected. Below are the names of a hundred interesting figures who, the author finally concluded, do *not* belong among the 100 most influential persons in history—although, undoubtedly, strong arguments can be made on behalf of a considerable number of these persons.

On the succeeding pages are brief articles about ten of those figures, indicating the author's reasons for omitting them from the top hundred. It should not be assumed that the author thinks that those ten (in some order) would be numbers 101-110 if the main list were extended, or that the persons named below would be numbers 101-200.

Abraham	Louis de Broglie
Aesop	Nicolas Sadi Carnot
Howard H. Aiken	Cheops (Khufu)
Susan B. Anthony	Winston Churchill
St. Thomas Aquinas	Karl von Clausewitz
Archimedes	Rudolf Clausius
Aristarchus of Samos	Marie Curie
Richard Arkwright	Gottlieb Daimler
Neil Armstrong	Dante Alighieri
Charles Babbage	King David
Antoine Henri Becquerel	Democritus
Jeremy Bentham	Mary Baker Eddy
Otto von Bismark	Robert C. W. Ettinger
Niels Bohr	George Fox

Benjamin Franklin
 Frederick the Great
 Betty Friedan
 Galen
 Mohandas K. Gandhi
 Karl Friedrich Gauss
 Hammurabi
 Georg Wilhelm Friedrich
 Hegel
 Henry VIII
 Henry the Navigator
 Theodor Herzl
 Hippocrates
 Thomas Hobbes
 James Hutton
 Ikhnaton
 Isaiah
 Joan of Arc
 Immanuel Kant
 Kemal Ataturk
 John Maynard Keynes
 Har Gobind Khorana
 Martin Luther King, Jr.
 Alfred C. Kinsey
 Gustav Robert Kirchhoff
 Kublai Khan
 Gottfried Wilhelm von
 Leibniz
 Etienne Lenoir
 Leonardo da Vinci
 Abraham Lincoln
 Liu Pang (Han Kao Tsu)
 Louis XIV
 James Madison
 Ferdinand Magellan
 The Virgin Mary
 Meijo Tenno
 (Emperor Mutsuhito)

Dmitri Mendeleev
 Montesquieu
 Maria Montessori
 Samuel Morse
 Wolfgang Amadeus Mozart
 Muawiya I
 Gerard K. O'Neill
 Blaise Pascal
 Ivan Pavlov
 Pablo Picasso
 Marco Polo
 Ptolemy (Claudius
 Ptolemaeus)
 Pythagoras
 Ronald Reagan
 Rembrandt
 Franklin Delano Roosevelt
 Sankara
 Erwin Schrodinger
 William B. Shockley
 Joseph Smith
 Socrates
 Sophocles
 Sun Yat-sen
 William Henry Fox Talbot
 Tamurlane
 Edward Teller
 Henry David Thoreau
 Charles H. Townes
 Harry S. Truman
 Alessandro Volta
 Selman A. Waksman
 James D. Watson &
 Francis Crick
 Robert A. Watson-Watt
 Mary Wollstonecraft
 Frank Lloyd Wright
 Boris Yeltsin
 Vladimir Zworykin

ST. THOMAS AQUINAS

c. 1225 - 1274

The Italian philosopher Thomas Aquinas is famous for his theological writings, and particularly for his *Summa Theologica*, which is perhaps the most authoritative statement of Catholic theological doctrines ever produced.

It is safe to say that no one has ever worked out a complete system of philosophy in such detail and with such careful consideration as Aquinas did. The reader, even if he disagrees with Aquinas's assumptions or conclusions, can hardly fail to be impressed by the overpowering intellect of the man. However, a considerable part of Aquinas's writings concern abstract and metaphysical questions that most persons do not find of great practical importance. He discussed ethical questions also; however, his writings, though they systematized earlier Catholic beliefs, did not represent a great change in ethical ideas or in political outlook. Nor does it seem likely that many persons have been converted to Catholicism or Christianity by reading Aquinas's works. Therefore, no matter how clever or correct Aquinas's speculations may have been, I doubt that they have had much influence upon human behavior or upon the course of history. It is for that reason that he has been omitted from the main list in this book.

ARCHIMEDES

287 B.C. - 212 B.C.

Archimedes is generally acknowledged to be one of the most brilliant mathematicians and scientists of the ancient world. He is sometimes credited with having discovered both the principle of the lever and the concept of specific gravity.

In fact, however, the lever had been known and used for many centuries before Archimedes. He seems to have been the first to explicitly state the formula describing the effect of the lever, but Egyptian engineers had made frequent and capable use of levers long before Archimedes.

The concept of the density (weight per unit volume) of an object, as opposed to the total weight of the object, had likewise been known before Archimedes. In the famous story of Archimedes and the crown (the story that ends with him jumping out of his bath and running through the streets shouting "Eureka"), what Archimedes had discovered was not a new concept, but rather an ingenious application of a known concept to a specific problem.

As a mathematician, Archimedes was undoubtedly outstanding. In fact, he came quite close to formulating integral calculus—more than eighteen centuries before Isaac Newton succeeded in doing so. Unfortunately, a convenient system of mathematical notation was lacking in Archimedes' day. Equally unfortunately, none of his immediate successors was a truly first-rate mathematician. As a result, Archimedes' brilliant mathematical insights turned out to have far less effect than they might have had. It therefore appears that although Archimedes' talents were indeed remarkable, his actual influence was not great enough to warrant including him among the first hundred names in this book.

CHARLES BABBAGE

1792 - 1871

The English inventor Charles Babbage worked out the principles behind the general-purpose digital computer a full century before the development of the large modern electronic calculating machines. A machine he designed, which he called the "analytical engine," was capable in principle of doing everything that modern calculators can do (though not nearly as quickly, since the analytical engine was not

designed to operate electrically). Unfortunately, because nineteenth-century technology was not sufficiently advanced, Babbage was not able to complete the construction of the analytical engine, despite the expenditure of a large amount of time and money. After his death, his extremely ingenious ideas were nearly forgotten.

In 1937, however, Babbage's writings came to the attention of Howard H. Aiken, a graduate student at Harvard University. Aiken, who had himself been trying to design a computing machine, was greatly stimulated by Babbage's ideas. With the collaboration of IBM, Aiken was able to construct the *Mark I*, the first large general-purpose computer. In 1946, two years after the *Mark I* went into operation, another group of engineers and inventors completed the *ENIAC*, the first *electronic* calculating machine. Since then, advances in computer technology have been extremely rapid.

Since calculating machines have had such a great impact on the world already, and are likely to prove even more important in the future, I was tempted to include Charles Babbage in the main section of this book. After careful consideration, however, I concluded that Babbage's contribution to the development of computers was not significantly greater than that of Aiken, or than that of John Mauchly and J. P. Eckert (who were the leading figures in the design of the *ENIAC*). For that matter, at least three of Babbage's predecessors—Blaise Pascal, Gottfried Leibniz, and Joseph Marie Jacquard—made contributions that seem to have been comparable in importance to Babbage's. Pascal, a French scientist, mathematician, and philosopher, invented a mechanical adding machine back in 1642. In 1671, Gottfried Wilhelm von Leibniz, philosopher and mathematician, devised a machine that could add, subtract, multiply, and divide. Leibniz was also the first to point out the importance of the binary system, a system of notation that is extensively employed in modern computing machines. Jacquard was a Frenchman who, in the early nineteenth century, invented a device that employed punched cards to control the operation of a loom. The Jacquard loom, which was very successful commercially, had a significant influence on Babbage's thinking. It may also have influenced Herman Hollerith, an American who, in the late nineteenth century, adapted punched cards for use in Census Bureau tabulations.

The principal credit for the development of the modern computer must, therefore, be divided among several men. Though each of

the men mentioned here made a significant contribution, no one of them stands out clearly above the others. Neither Babbage, therefore, nor any of the others, seems quite worthy of inclusion in the main section of this book.

CHEOPS

fl. 26th c. B.C.

The Egyptian king Khufu (Cheops is the Greek form of his name) is best remembered for his construction of the Great Pyramid at Giza, which was apparently built to be his tomb. His exact dates of birth and death are unknown, but it is believed that he flourished during the twenty-sixth century B.C. We know that his capital was at Memphis, in Egypt, and that he had a long reign, but little else is known of his life.

It seems safe to say that the Great Pyramid is both the most celebrated and the most remarkable structure ever built by human beings. Even in ancient times it was regarded as one of the Seven Wonders of the World. Although the other six structures have long since fallen into ruin, the Great Pyramid remains, a striking memorial to the king who built it.

The perfection of its construction, as well as its sheer size, are awe-inspiring. Although the top thirty feet of the Great Pyramid have been destroyed, it still stands 450 feet high—about the height of a thirty-five-story building! Roughly 2,300,000 blocks of stone, averaging about two and one-half tons apiece, were used in its construction. Because the Great Pyramid contains a set of internal chambers and passages, the stones used in building it had to be of varying sizes, adding to the complexity of the construction task.

Just how the ancient Egyptians, working some forty-six centuries ago, without any modern equipment or machinery, were able to construct this vast monument is unclear. Certainly, it required careful planning and superb administrative ability to successfully marshal the resources of the country for this gigantic task. If we accept the common

estimate that it took twenty years to build the Great Pyramid, then we find that an average of more than 300 stone blocks were put in place each day. Clearly, in order to quarry that number of blocks, to transport them to the site of the pyramid, to cut them to the exact shape desired, and to accurately place them was an enormous task. A whole fleet of boats must have been needed to transport the blocks, and a well-planned supply system was needed to feed the army of workers engaged in the project.

The Great Pyramid has already endured for over 4,500 years, and will probably still be standing long after every building constructed by modern engineers has crumbled to dust. It is virtually indestructible; not even a direct hit by an atomic bomb would obliterate it! Of course, it is slowly being worn away. However, at the present rate of erosion it will probably last for over a million years.

It therefore seems plain that Cheops, a man who has truly left his mark on the world, has achieved an enduring fame, perhaps more so than any other person who has yet lived. (Will men like Napoleon or Alexander the Great be remembered at all, even ten thousand years from now?) But fame is very different from influence, and while Cheops probably had a great effect upon the lives of his contemporary Egyptians, he does not appear to have had much influence either upon foreign nations or succeeding ages.

MARIE CURIE

1867 - 1934

Marie Curie (original name: Maria Sklodowska) is much more famous than many of the scientists whom I have included in the first hundred persons on my list. It seems to me, however, that her great fame is based not so much upon the importance of the scientific work she did as upon the fact that a woman did it. Her career demonstrated, in the clearest possible fashion, that a female was capable of high-quality scientific research. For this reason she has become

very celebrated, so much so that many persons have the impression that she was the person who discovered radioactivity. In fact, however, radioactivity was discovered by Antoine Henri Becquerel. There is no question whatsoever of Becquerel's priority, for it was not until after Marie Curie had read an account of Becquerel's discovery that she (and her husband, Pierre, who was an equally talented scientist) commenced their investigations of the subject.

Marie Curie's most celebrated actual accomplishment was the discovery and isolation of the chemical element radium. Prior to that, she had discovered another radioactive element, which she named "polonium" after her native land, Poland. These are admirable achievements, but are not of major importance in scientific theory.

In 1903, Marie Curie, Pierre Curie, and Antoine Henri Becquerel were jointly awarded the Nobel Prize in physics. In 1911, Marie Curie was awarded another Nobel Prize, this one in chemistry, making her the first person to win two Nobel Prizes.

It is interesting to note that Marie Curie had young children at the time that her most important scientific research was accomplished. Her eldest daughter, Irene, also became a highly successful scientist. Irene married another talented scientist, Jean Frédéric Joliot, and the two of them, working together, discovered *artificial* radioactivity. For this discovery (which might be considered a "descendant" of the discovery of natural radioactivity!) the Joliot-Curies shared a Nobel Prize in 1935. Marie Curie's second daughter, Ève, became a noted musician and author. Quite a family!

Madame Curie died in 1934 of leukemia, quite probably caused by repeated exposure to radioactive materials.

BENJAMIN FRANKLIN

1706 - 1790

I think it fair to say that Benjamin Franklin was the most versatile genius in all of history, with notable accomplishments in an even wider

range of fields than the renowned Leonardo da Vinci. It is astonishing, but true, that Franklin had highly successful careers in at least four quite separate areas of human endeavor: business, science, literature, and politics.

Franklin's business career was a classic rags-to-riches story. His family in Boston had not been well-to-do, and as a young man in Philadelphia, he was virtually penniless. By his early forties, however, Franklin had become a prosperous man through his printing shop, his newspaper, and his other business activities. Meanwhile, in his spare time, he studied science and taught himself four foreign languages!

As a scientist, Franklin is best known for the basic research he performed concerning electricity and lighting. However, he also devised several highly useful inventions, including the Franklin stove, bifocal lenses, and the lightning rod. The latter two inventions are widely used even today.

Franklin's first literary efforts were as a successful journalist. Soon he was publishing *Poor Richard's Almanac*, in which he demonstrated his unusual talent for turning a clever phrase. (Few writers have left behind so many well-remembered sayings.) In later years, he composed his autobiography, one of the most famous ever written, and one still widely read and enjoyed.

In politics, Franklin was successful as an administrator (he was a postmaster general for the colonies, and under him the postal service showed a profit!); as a legislator (he was re-elected repeatedly to the Pennsylvania legislature); and as a diplomat (he was a very popular and successful ambassador to France during a crucial period in American history). In addition, he was one of the signers of the American Declaration of Independence, and later served as a member of the Constitutional Convention.

Overlapping all these fields, to some extent, was Franklin's fifth "career" as a public-spirited promoter and organizer. For example, he was one of the founders of the first hospital in Philadelphia. He helped to organize the first fire company in the colonies, and he pushed successfully for the formation of a municipal police department. He organized a circulating library (the colonies' first) and a scientific society (still another first!).

Like all of us, Franklin had troubles and grievous disappointments. Nevertheless, his life stands out as a remarkable example—perhaps the most striking in history—of one well-spent. Blessed with

good health for most of his eighty-four years, Franklin had a long, exciting, useful, varied, and generally happy sojourn on earth.

In view of the foregoing, it was very tempting to include Franklin in the main section of this book. However, no one of his contributions seems nearly important enough for him to be considered one of the hundred most influential persons in history; nor in my opinion, do all of his achievements combined.

MOHANDAS GANDHI

1869 - 1948

Mohandas K. Gandhi was the outstanding leader of the movement for an independent India, and for that reason alone several people have suggested that he be included in the main section of this book. It should be remembered, though, that Indian independence from England was bound to come sooner or later; in fact, given the strength of the historical forces tending toward decolonization, we can today see that Indian independence would surely have been achieved within a few years of 1947 even had Gandhi never lived.

It is true that Gandhi's technique of nonviolent civil disobedience was ultimately successful in persuading the British to leave India. It has been suggested, however, that India might have gained independence sooner if the Indians had adopted more forceful methods instead. Since it is hard to decide whether on the whole Gandhi speeded up or delayed Indian independence, we might reasonably conclude that the net effect of his actions was (at least in that respect) rather small. It might also be pointed out that Gandhi was *not* the founder of the movement for Indian independence (the Indian National Congress had been founded as early as 1885), nor was he the main political leader at the time independence was finally achieved.

Still, it might be maintained that Gandhi's principal importance

lies in his advocacy of nonviolence. (His ideas, of course, were not entirely original: Gandhi specifically said that they were derived in part from his readings of Thoreau, Tolstoy, and the New Testament, as well as from various Hindu writings.) There is little doubt that Gandhi's policies, if universally adopted, would transform the world. Unfortunately, they have not been generally accepted, even in India.

It is true that in 1954-55 his techniques were used in an attempt to persuade the Portuguese to relinquish control of Goa. However, the campaign did not succeed in its goal, and a few years later, the Indian government launched an armed invasion. In addition, in the last forty years, India has fought three wars with Pakistan and a border war with China. Other countries have been equally reluctant to adopt Gandhi's techniques. In the roughly eighty years since he introduced those techniques, the world has seen the two bloodiest wars in all history.

Must we therefore conclude that as a philosopher Gandhi was basically a failure? At the present time, it certainly seems that way; however, it is worth remembering that forty years after Jesus died an intelligent, well-informed Roman would doubtless have concluded that Jesus of Nazareth was a "failure"—if, indeed, he had heard of Jesus at all! Nor could anyone in 450 B.C. have predicted how influential Confucius would turn out to be. Still, judging from what has occurred so far, Gandhi seems entitled only to an honorable mention in this book.

ABRAHAM LINCOLN

1809 - 1865

Abraham Lincoln, the sixteenth president of the United States, is one of the most famous and most admirable political leaders that this country—or any country—has ever produced. Why, then, has he not been included on my list? Was not the freeing of some 3,500,000 slaves a major accomplishment?

Indeed it was. However, in retrospect we can see that the forces—

throughout the world—working toward the abolition of slavery were irresistible. Many countries had abolished slavery even before Lincoln took office, and within sixty-five years of his death, most other countries did so. The most that Lincoln can be credited with accomplishing is having hastened the process in one country.

Still, it might be asserted that Lincoln's chief accomplishment was in holding the United States together in the face of the secession of the southern states, and for that alone he deserves a place on this list.

But it was the election of Lincoln that touched off the secession of the southern states. Nor is it clear that the North would have failed to win the Civil War if someone other than Lincoln had been President. After all, the North started the war with a great advantage in population, and an even greater one in industrial production.

Even if the North had not prosecuted the Civil War to a successful conclusion, the overall course of history might not have been greatly altered. The bonds of language, religion, culture, and trade between the North and the South were very great, and it seems probable that they would eventually have reunited. If the period of disunity had lasted for twenty years—or even for fifty years—it would still be a minor incident in world history. (It should also be remembered that, even without the South, the United States would now be the fourth most populous nation on earth and the leading industrial power.)

Does this mean that Lincoln was an unimportant figure? Not at all! His career profoundly influenced several million people for a generation. However, that still does not make him as important as a man such as Mahavira, whose influence has continued for many centuries.

FERDINAND MAGELLAN

c. 1480 - 1521

The Portuguese explorer Ferdinand Magellan is celebrated as the leader of the first expedition to circumnavigate the earth.

His expedition was perhaps the most outstanding voyage of exploration in all human history. The complete trip took just under three years. Of the five small, clumsy, leaky vessels with which Magellan started out, only one returned to Europe safely; and of the 265 men who started the voyage, only eighteen came back alive! Magellan himself was one of those who died during the voyage (although not until after he had led the expedition over the most difficult part of the trip). But in the end, the expedition was successful, and it proved beyond any dispute that the earth was round.

It is quite plain that the success of the expedition was principally due to Magellan's leadership and to his iron determination. Much of the crew wished to turn back after a few months; indeed, Magellan had to suppress a mutiny in order to continue onward. His combination of skill and perseverance entitle him to be considered the greatest of all navigators and explorers.

The actual influence of his achievement, however, was comparatively small. Educated Europeans already knew quite well that the earth was round. Nor did the route Magellan traveled become an important trade route. Unlike the voyage of Vasco da Gama, Magellan's trip did not have a major influence on either Europe or the East. Therefore, although his feat has rightly brought him undying fame, it does not make him one of the hundred most influential persons in history.

LEONARDO DA VINCI

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Leonardo da Vinci was born in 1452 near Florence, Italy, and died in 1519. The intervening centuries have not tarnished his reputation as perhaps the most brilliant universal genius that ever lived. If this were a list of *outstanding* persons, Leonardo would definitely be included among the first fifty names. However, his talent and reputation seem greatly in excess of his actual influence upon history.

In his notebooks, Leonardo left behind sketches of many modern inventions, such as airplanes and submarines. While these notebooks attest to his brilliance and originality, they had virtually no influence upon the development of science. In the first place, Leonardo did not actually build models of those inventions. In the second place, although the ideas were very clever, it does not appear that the inventions would actually have worked. It is one thing to think of the *idea* of a submarine or airplane; it is another and very much harder thing to work out a precise, detailed, practical design and to construct a model which actually works. The great inventors are not those men who had brilliant ideas but failed to follow up on them; rather, they are those persons—like Thomas Edison, James Watt, or the Wright brothers—who had the mechanical aptitude and the patience to work out the details and to overcome the difficulties so as to construct something which was actually functional. Leonardo did not do that.

Furthermore, even had his sketches included every detail necessary to make his inventions work, it still would have made little difference, for the inventions were buried in his notebooks, and these were not published until centuries after his death. By the time the notebooks (whose text, incidentally, is in mirror writing) were published, the ideas behind his inventions had already been independently discovered by others. We conclude that as a scientist and inventor, Leonardo was without significant influence.

His eligibility for this list, therefore, depends primarily upon his artistic achievements. Leonardo was a first-rate artist, though no more outstanding than such men as Rembrandt, Raphael, Van Gogh, or El Greco. With regard to his effect on later artistic developments, he was far less influential than either Picasso or Michelangelo.

Leonardo had a regrettable habit of starting ambitious projects and never completing them. As a result, his output of completed paintings was very much smaller than that of the other men just mentioned. By frequently shifting to a new project before completing an old one, Leonardo succeeded in frittering away a considerable portion of his extraordinary talents. Although it may seem odd to refer to the man who painted the Mona Lisa as an underachiever, that seems to be the conclusion of most persons who have carefully studied his career.

It is possible that Leonardo da Vinci was the most talented person who ever lived, but his enduring accomplishments were comparatively few. Although a renowned architect, he does not seem to have ever

designed a building that was actually constructed. Nor does a single sculpture made by him survive today. All that remains of his prodigious talents are a considerable number of drawings, a few magnificent paintings (fewer than twenty survive), and a set of notebooks which make twentieth-century readers marvel at his genius, but which had little if any influence upon science or invention. Talented as he was, Leonardo was not one of the hundred most influential persons who have ever lived.



Leonardo da Vinci (self-portrait).