Quantitative History

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History's Most Significant People

People love lists: the Ten Commandments, the Seven Deadly Sins, and the Four Beatles. But they are fascinated by *rankings*, which are lists organized according to some measure of value or merit. Who were the most important women in history? The best writers or most influential artists? Our least illustrious presidents? Who's bigger: John, Paul, George, or Ringo?

This is a book about measuring the "significance" of historical figures. We do not answer these questions as historians might, through a principled assessment of their individual achievements. Instead, we evaluate each person by aggregating the traces of millions of opinions in a rigorous and principled manner. We rank historical figures just as Google ranks web pages, by integrating a diverse set of measurements about their reputation into a single consensus value.

Significance is related to fame but measures something different. Forgotten U.S. president *Chester A. Arthur (1829–1886)* [499] is more historically significant than young pop singer *Justin Bieber (1994–)* [8633], even though he may have a less devoted following and lower contemporary name recognition. Significance is the result of social and cultural forces acting on the mass of an individual's achievement. We think you will be impressed by the extent to which our results capture what you think of as "historical significance." And our computational, data-centric analysis provides new ways to understand and interpret the past.

1.1 People as Memes

We will be interested in the concept of people as *memes*, simple ideas that reproduce when spread from mind to mind. Memes were introduced by *Richard Dawkins (1941–)* [1630] in his book *The Selfish Gene* [Dawkins, 1990]. He observed that ideas undergo the same processes of natural selection and modification as that of biological species, and hence can be studied using the same tools of evolutionary theory.

For example, the "teenaged pop star" meme that is *Justin Bieber (1994–)* [8633] reproduces every time someone reads his Wikipedia page, or he makes news for some performance or gossip-worthy transgression. It weakens whenever a newly grown-up fan removes his poster from the bedroom wall. The Bieber meme will continue to thrive until some future star comes to occupy his particular environmental niche.

Many historical figures reduce to small stories of who they are and why they are known. The meme of *Betsy Ross (1752–1836)* [2430] as the "woman who first sewed the American flag" is an excellent example. It does not really matter whether she actually did sew the first flag (the evidence isn't very strong here) but catching this meme is valuable as a cultural reference in American colonial history and the evolution of gender roles.

Thinking about historical figures as memes turns the processes of fame into a legitimate area of study. We can think of people as occupying niches in history, analogous to how species thrive in particular ecological systems. Sometimes cultural niches disappear, along with memories of all those who occupied them. Historical figures are always in danger of being displaced, whenever stronger but analogous memes rise up to replace them.

Our historical significance measures can be thought of as a quantitative tool to measure the strength of historical memes. We will use this tool to highlight the forces at work in building popular history.

1.2 Our 100

So we have a ranking for you. Figures 1.1 and 1.2 present our ranking of the 100 most significant historical figures according to our computational methods.

Rank	Name	Dates	Description
1	Jesus	(7 B.C.–A.D. 30)	Central figure of Christianity
2	Napoleon	(1769–1821)	Emperor of France (Battle of Waterloo)
3	Muhammad	(570–632)	Prophet and founder of Islam
4	William Shakespeare	(1564–1616)	English playwright (*Hamlet*)
5	Abraham Lincoln	(1809–1865)	16th U.S. president (U.S. Civil War)
6	George Washington	(1732–1799)	1st U.S. president (American Revolution)
7	Adolf Hitler	(1889–1945)	Fuehrer of Nazi Germany (World War II)
8	Aristotle	(384–322 B.C.)	Greek philosopher and polymath
9	Alexander the Great	(356–323 B.C.)	Greek king and conqueror of the known world
10	Thomas Jefferson	(1743–1826)	3rd U.S. president (Decl. of Independence)
11	Henry VIII	(1491–1547)	King of England (six wives)
12	Charles Darwin	(1809–1882)	Scientist (Theory of Evolution)
13	Elizabeth I	(1533–1603)	Queen of England (The Virgin Queen)
14	Karl Marx	(1818–1883)	Philosopher ("Communist Manifesto")
15	Julius Caesar	(100–44 B.C.)	Roman general and statesman ("Et tu, Brute?")
16	Queen Victoria	(1819–1901)	Queen of Britain (Victorian Era)
17	Martin Luther	(1483–1546)	Protestant Reformation (95 Theses)
18	Joseph Stalin	(1878–1953)	Premier of USSR (World War II)
19	Albert Einstein	(1879–1955)	Theoretical physicist (Relativity)
20	Christopher Columbus	(1451–1506)	Explorer, discoverer of the New World
21	Isaac Newton	(1643–1727)	Scientist (Theory of Gravity)
22	Charlemagne	(742–814)	First Holy Roman Emperor ("Father of Europe")
23	Theodore Roosevelt	(1858–1919)	26th U.S. President (Progressive Movement)
24	Wolfgang Amadeus Mozart	(1756–1791)	Austrian composer (*Don Giovanni*)
25	Plato	(427–347 B.C.)	Greek philosopher (*Republic*)
26	Louis XIV	(1638–1715)	King of France ("The Sun King")
27	Ludwig van Beethoven	(1770–1827)	German composer ("Ode to Joy")
28	Ulysses S. Grant	(1822–1885)	18th U.S. president and Civil War general
29	Leonardo da Vinci	(1452–1519)	Italian artist and polymath ("Mona Lisa")
30	Augustus	(63 B.C.–A.D. 14)	First Emperor of Rome (Pax Romana)
31	Carl Linnaeus	(1707–1778)	Swedish biologist (Father of Taxonomy)
32	Ronald Reagan	(1911–2004)	40th U.S. president (Conservative Revolution)
33	Charles Dickens	(1812–1870)	English novelist (*David Copperfield*)
34	Paul the Apostle	(A.D. 5–A.D. 67)	Christian apostle and missionary
35	Benjamin Franklin	(1706–1790)	Founding father/scientist (captured lightning)
36	George W. Bush	(1946–)	43rd U.S. president (Iraq War)
37	Winston Churchill	(1874–1965)	Prime minister of Britain (World War II)
38	Genghis Khan	(1162–1227)	Founder of the Mongol Empire
39	Charles I	(1600–1649)	King of England (English Civil War)
40	Thomas Edison	(1847–1931)	Inventor (light bulb, phonograph)
41	James I	(1566–1625)	King of England (King James Bible)
42	Friedrich Nietzsche	(1844–1900)	German philosopher ("God is dead")
43	Franklin D. Roosevelt	(1882–1945)	32nd U.S. President (New Deal, World War II)
44	Sigmund Freud	(1856–1939)	Neurologist and creator of psychoanalysis
45	Alexander Hamilton	(1755–1804)	U.S. Founding Father (National Bank)
46	Mohandas Karamchand Gandhi	(1869–1948)	Indian nationalist leader (Nonviolence)
47	Woodrow Wilson	(1856–1924)	28th U.S. president (World War I)
48	Johann Sebastian Bach	(1685–1750)	Classical composer (Well-Tempered Clavier)
49	Galileo Galilei	(1564–1642)	Italian physicist and astronomer
50	Oliver Cromwell	(1599–1658)	Lord Protector of England (English Civil War)

FIGURE 1.1. The 100 Most Historically Significant Figures (1–50).

Rank	Name	Dates	Description
51	James Madison	(1751–1836)	4th U.S. president (War of 1812)
52	Gautama Buddha	(563–483 B.C.)	Central figure of Buddhism
53	Mark Twain	(1835–1910)	American author (*Huckleberry Finn*)
54	Edgar Allan Poe	(1809–1849)	American author ("The Raven")
55	Joseph Smith	(1805–1844)	American religious leader (Mormonism)
56	Adam Smith	(1723–1790)	Economist (*The Wealth of Nations*)
57	David	(1040–970 B.C.)	Biblical King of Israel (Jerusalem)
58	George III	(1738–1820)	King of England (American Revolution)
59	Immanuel Kant	(1724–1804)	German philosopher (*Critique of Pure Reason*)
60	James Cook	(1728–1779)	Explorer and discoverer of Hawaii, Australia
61	John Adams	(1735–1826)	Founding Father and 2nd U.S. President
62	Richard Wagner	(1813–1883)	German composer (*Der Ring des Nibelungen*)
63	Pyotr Ilyich Tchaikovsky	(1840–1893)	Russian composer (*1812 Overture*)
64	Voltaire	(1694–1778)	French Enlightenment philosopher (*Candide*)
65	Saint Peter	(?–?)	Early Christian leader
66	Andrew Jackson	(1767–1845)	7th U.S. president ("Old Hickory")
67	Constantine the Great	(272–337)	Emperor of Rome (First Christian emperor)
68	Socrates	(469–399 B.C.)	Greek philosopher and teacher (Hemlock)
69	Elvis Presley	(1935–1977)	The "king of rock and roll"
70	William the Conqueror	(1027–1087)	King of England (Norman Conquest)
71	John F. Kennedy	(1917–1963)	35th U.S. president (Cuban Missile Crisis)
72	Augustine of Hippo	(354–430)	Early Christian theologian ("The City of God")
73	Vincent van Gogh	(1853–1890)	Post-impressionist painter ("Starry Night")
74	Nicolaus Copernicus	(1473–1543)	Astronomer (Heliocentric cosmology)
75	Vladimir Lenin	(1870–1924)	Soviet revolutionary and Premier of USSR
76	Robert E. Lee	(1807–1870)	Confederate General (U.S. Civil War)
77	Oscar Wilde	(1854–1900)	Irish author and poet (*Dorian Gray*)
78	Charles II	(1630–1685)	King of England (Post-Cromwell)
79	Cicero	(106–43 B.C.)	Roman statesman and orator (*On the Republic*)
80	Jean-Jacques Rousseau	(1712–1778)	Philosopher (*On the Social Contract*)
81	Francis Bacon	(1561–1626)	English scientist (Scientific method)
82	Richard Nixon	(1913–1994)	37th U.S. president (Watergate)
83	Louis XVI	(1754–1793)	King of France (executed in French Revolution)
84	Charles V	(1500–1558)	Holy Roman Emperor (Counter-Reformation)
85	King Arthur	(?–?)	Mythical 6th-century King of Britain
86	Michelangelo	(1475–1564)	Italian sculptor and Renaissance man (David)
87	Philip II	(1527–1598)	King of Spain (Spanish Armada)
88	Johann Wolfgang von Goethe	(1749–1832)	German writer and polymath (*Faust*)
89	Ali	(598–661)	Early Caliph and a central figure of Sufism
90	Thomas Aquinas	(1225–1274)	Italian theologian ("Summa theologiae")
91	Pope John Paul II	(1920–2005)	20th-century Polish Pope (Solidarity)
92	René Descartes	(1596–1650)	French philosopher ("I think, therefore I am")
93	Nikola Tesla	(1856–1943)	Inventor (alternating current)
94	Harry S. Truman	(1884–1972)	33rd U.S. president (Korean War)
95	Joan of Arc	(1412–1431)	French military leader and saint
96	Dante Alighieri	(1265–1321)	Italian poet (*Divine Comedy*)
97	Otto von Bismarck	(1815–1898)	1st chancellor and unifier of modern Germany
98	Grover Cleveland	(1837–1908)	22nd and 24th U.S. president
99	John Calvin	(1509–1564)	French Protestant theologian (Calvinism)
100	John Locke	(1632–1704)	English Enlightenment philosopher (Tabula rasa)

FIGURE 1.2. The 100 Most Historically Significant Figures (51–100).

Please study our rankings for a while. We are confident that you will have at least a nodding familiarity with most of these people. Grade yourself on how many of our choices you have heard of: knowing 70 is a C, 80 earns

a B, and 90 will get you on an A. We are pretty sure we have a lot of A students/readers out there, but if you're not yet one of them, consider this book your opportunity to meet some new people.[1]

We don't expect you will agree with everyone chosen for the top 100, or exactly where they are placed. But we trust you will agree that most selections are reasonable: a mix of famous people including the major pillars of Western civilization. A quarter of them are philosophers or major religious figures, plus eight scientists/inventors, thirteen giants in literature and music, and three of the greatest artists of all time.

The success of our ranking methods is best established by the banality of our results. You should be reassured by your familiarity with our top 100, instead of being startled by our claims: say, if we promoted *Francis Scott Key (1777–1843)* [1050] as a critical historical figure. Our methods summarize the knowledge of all the authors and readers of the English-language Wikipedia, to order historical figures consistent with the general views of this community. By definition, you should see the names here that you expect to see.

1.3 Other People's Rankings

Historical judgment is subjective. Scholars continue to argue about the causes of wars and other great events. Political and cultural biases come into play, and the past is always being reinterpreted. There is no replacement for the critical process of highly trained scholars to the workings of the humanities and social sciences. And yet, we can learn important things about the past by studying its traces using computational methods.

We are by no means the first people to publish rankings of the most significant people in history. Over the course of this project, we have uncovered more than three dozen published rankings of the (typically) top 100 people in one historical domain or another. But we believe that we are the first to do so using a rigorous statistical methodology, which avoids some of the vagaries of individual human opinion. To better understand the strengths and limitations of our algorithmic methods, we will compare our rankings to two prominent published rankings of historical figures.

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[1] Short descriptions of each member of our top 100 appear in Appendix C, in case you want to become more familiar with someone.

1.3.1 MICHAEL HART'S *THE 100*

The 100 [Hart, 1992] is probably the best known ranking of historic figures by influence. It has sold more than half a million copies since the first edition in 1978. I (Steve) owned one of those copies back in high school, which no doubt stimulated my interest in both history and ranking.

Hart himself is a curious character, with graduate degrees in physics, astronomy, law, and computer science. His writings embrace a variety of controversial topics, pegging *Edward de Vere (1550–1604)* [1603] as the author of *William Shakespeare's (1564–1616)* [4] plays and supporting racial/ethnic separation both in the United States and abroad. Still, his biographies in *The 100* make informed and stimulating reading. We will study his rankings from the revised 1992 edition of the book.

Hart's top 100 and our own share many historical figures in common. What is more enlightening is to study where our rankings sharply differ. We start by identifying the ten people in his 100 who are ranked lowest by our methods.

Bottom of the Hart 100

Us	Hart	Person	Dates	Description
47910	82	Gregory Goodwin Pincus	(1903–1967)	American biologist (oral contraceptive pill)
7233	37	William T. G. Morton	(1819–1868)	Dentist and pioneer of anesthesia
6950	7	Cai Lun	(A.D. 50–121)	Chinese inventor (paper)
5746	96	Menes	(?–?)	First pharaoh of ancient Egypt
5663	61	Nikolaus Otto	(1832–1891)	German inventor (internal combustion engine)
4724	85	Emperor Wen of Sui	(541–604)	Founder of China's Sui Dynasty
3005	47	Louis Daguerre	(1787–1851)	French inventor of photography
2751	83	Mani	(216–276)	Prophet and the founder of Manichaeism
2732	71	Wilhelm Röntgen	(1845–1923)	German physicist (X-rays)
1835	92	Mencius	(372–289 B.C.)	Chinese thinker (Confucianism)

The least significant member of Hart's list is *Gregory Goodwin Pincus (1903–1967)* [47910], who is promoted as the father of the oral contraceptive pill. The Pill has indeed changed the world, but we think he has honored the wrong man (or, in particular, woman) here. *Carl Djerassi (1923–)* [47277] was the scientist who developed the compound (Norethirsterone) that became the first practical oral contraceptive. *Margaret Sanger (1879–1966)* [2672] was the activist who established Planned Parenthood, and was responsible for the funding that Pincus used to validate Djerassi's compound. We rank Sanger as a far more significant figure than Pincus.

Hart's rankings glorify technological achievement, but his heart lies with the underdog. We would contest his choice of the seminal figure in several other areas as well:

- Hart credits *Nikolaus Otto (1832–1891)* [5663], inventor of the four-stroke internal combustion engine, as the pioneer of the automobile. But we more highly rank *Gottlieb Daimler (1834–1900)* [1461] and *Karl Benz (1844–1929)* [840], who actually built the first cars.
- Hart credits *Louis Daguerre (1787–1851)* [3005] as the pioneer of photography, but he was just one of several inventors with diverse chemical processes for recording images, like his rival *William Fox Talbot (1800–1877)* [2650]. Our choice for the real father of photography was *George Eastman (1854–1932)* [1584], whose invention of roll film and the Eastman Kodak camera led the way to the modern photographic era.
- Hart recognizes *Menes* [5746], the first pharaoh of the first dynasty. Legend credits him with uniting Upper and Lower Egypt, but there is little evidence of his existence in the historical record. Instead, we identify *Ramesses II (1302–1213 B.C.)* [293] as the most significant pharaoh, who ruled Egypt for 66 years during its time of greatest power.

Hart omitted several of our top 100 from his rankings who prove to be much stronger vessels. We are happy to find room for *Abraham Lincoln (1809–1865)* [5], *Henry VIII (1491–1547)* [11], and *Wolfgang Amadeus Mozart (1756–1791)* [24] ahead of anesthesia pioneer *William T. G. Morton (1819–1868)* [7233] or *Werner Heisenberg (1901–1976)* [1659], a great scientist but one who doesn't crack our rankings of the top five modern physicists.

Missing from the Hart 100

Us	Hart	Person	Dates	Description
4		William Shakespeare	(1564–1616)	English playwright (*Hamlet*)
5		Abraham Lincoln	(1809–1865)	16th U.S. president (U.S. Civil War)
11		Henry VIII	(1491–1547)	King of England (six wives)
16		Queen Victoria	(1819–1901)	Queen of Britain (Victorian Era)
23		Theodore Roosevelt	(1858–1919)	26th U.S. President (Progressive Movement)
24		Wolfgang Amadeus Mozart	(1756–1791)	Austrian composer (*Don Giovanni*)
26		Louis XIV	(1638–1715)	King of France ("The Sun King")
28		Ulysses S. Grant	(1822–1885)	18th U.S. president and Civil War general
29		Leonardo da Vinci	(1452–1519)	Italian artist and polymath ("Mona Lisa")
31		Carl Linnaeus	(1707–1778)	Swedish biologist (Father of Taxonomy)

1.3.2 *LIFE* MAGAZINE'S 100 MOST INFLUENTIAL FIGURES OF THE MILLENNIUM

The year 2000 provoked many backward glances at mankind's achievements over the past one thousand years, particularly a popular ranking from *Life* Magazine (2000). They neglect figures from ancient times and the early Middle Ages, but we only have twenty-ish figures from these periods ourselves, leaving enough shared people for a reasonable comparison with our rankings.

The relative order of *Life*'s rankings correlate better with ours (0.54) than Hart's rankings did (0.31), so we respect their choices more. Still, there are revealing differences.

Life managed to find room for the "Four-Minute Miler" *Roger Bannister (1929–)* [11095], Chinese landscape painter *Fan Kuan (1020–1030)* [35313], and medieval music theorist *Guido of Arezzo (991–1033)* [6215]. All were at the expense of *George Washington (1732–1799)* [6], *Joseph Stalin (1878–1953)* [18], *Winston Churchill (1874–1965)* [37], and others in our top 100.

Bottom of the *Life* 100

Us	Life	Person	Dates	Description
35313	59	Fan Kuan	(1020–1030)	Chinese landscape painter
14490	67	Cao Xueqin	(1715–1763)	Chinese classical writer
11095	92	Roger Bannister	(1929–)	English athlete (four-minute mile)
7177	65	Hiram Stevens Maxim	(1840–1916)	American inventor (Maxim gun)
6215	62	Guido of Arezzo	(991–1033)	Medieval music theorist
3774	99	Kwame Nkrumah	(1909–1972)	Founding leader of Ghana
3302	72	Simone de Beauvoir	(1908–1986)	French existentialist philosopher
3005	79	Louis Daguerre	(1787–1851)	French inventor of photography
2799	96	Jacques Cousteau	(1910–1997)	French oceanographic explorer
2061	45	Zhu Xi	(1130–1200)	Chinese Confucian scholar

Missing from the *Life* 100

Us	Life	Person	Dates	Description
6		George Washington	(1732–1799)	1st U.S. president (American Revolution)
11		Henry VIII	(1491–1547)	King of England (six wives)
18		Joseph Stalin	(1878–1953)	Premier of USSR (World War II)
23		Theodore Roosevelt	(1858–1919)	26th U.S. president (Progressive Movement)
24		Wolfgang Amadeus Mozart	(1756–1791)	Austrian composer (*Don Giovanni*)
28		Ulysses S. Grant	(1822–1885)	18th U.S. president and Civil War general
32		Ronald Reagan	(1911–2004)	40th U.S. president (Conservative Revolution)
33		Charles Dickens	(1812–1870)	English novelist (*David Copperfield*)
35		Benjamin Franklin	(1706–1790)	Founding father/scientist (captured lightning)
36		George W. Bush	(1946–)	43rd U.S. president (Iraq War)