

SCIENCE

Cause and Effect, Logic, Observation and Reason

1. ESSENCE

- 4116 Experience is the universal mother of sciences.
Cervantes (1547-1616)
- 4117 Science is the knowledge of consequences,
and dependence of one fact upon another.
Thomas Hobbes (1588-1679)
- 4118 Logic is the art of convincing us of some truth.
La Bruyere (1645-1696)
- 4119 Science when well digested is nothing but good sense and
reason.
Leszczynski Stanislaus (1677-1766)
- 4120 Men love to wonder, and that is the seed of science.
Emerson (1803-1882)
- 4121 Science consists in grouping facts so that general laws or
conclusions may be drawn from them.
Charles Darwin (1809-1882)
- 4122 Science is organized knowledge.
Herbert Spencer (1820-1903)
- 4123 Science is simply common sense at its best, that is, rigidly
accurate in observation, and merciless to fallacy in logic.
Thomas Huxley (1825-1895)

2. OPPOSITES

- 4124 Science is the father of knowledge,
but opinion breeds ignorance.
Hippocrates (B.C. 460-370)
- 4125 The cause is hidden but the effect is evident,
Ovid (B.C. 43-18 A.D.)
- 4126 Everything in nature is a cause
from which there flows some effect.
Spinoza (1632-1677)
- 4127 Reason is progressive; instinct is complete;
swift instinct leaps; slow reason feebly climbs.
Young (1683-1765)

- 4128 Algebra is the metaphysics of arithmetic.
Sterne (1713-1768)
- 4129 Logic works; metaphysics contemplates.
Joubert (1754-1824)
- 4130 Grammar is the logic of speech,
even as logic is the grammar of reason.
Trench (1807-1886)
- 4131 Science has its nights and its dawns, because it gives the
intellectual world a life which has its regulated movements
and its progressive phases. It is with Truths, as with the
luminous rays: nothing of what is concealed is lost;
but also, nothing of what is discovered is absolutely new.
Albert Pike (1809-1891)
- 4132 All things are hidden, obscure and debatable
if the cause of the phenomena be unknown,
but everything is clear if this cause be known.
Louis Pasteur (1822-1895)
- 4133 Logical consequences are the scarecrows of fools
and the beacons of wise men.
Thomas Huxley (1825-1895)
- 4134 Science is facts; just as houses are made of stones, so is
science made of facts; but a pile of stones is not a house
and a collection of facts is not necessarily science.
Henri Poincare (1854-1912)
- 4135 Science is what you know, philosophy is what you don't know.
Bertrand Russell (1872-1970)
- 4136 All exact science is dominated by the idea of approximation.
Bertrand Russell (1872-1970)
- 4137 A few observations and much reasoning leads to error;
many observations and a little reasoning to truth.
Alexis Carrel (1873-1944)
- 4138 Every science begins as philosophy and ends as art.
Will Durant (1885-1981)
- 4139 Artists treat facts as stimuli for imagination,
whereas scientists use imagination to coordinate facts.
Arthur Koestler (1905-1983)

- 4140 He who proves things by experience increases his knowledge;
he who believes blindly increases his errors.

Chinese Proverb

3. INSIGHT

- 4141 Philosophy is the true mother of science.
Cicero (B.C. 106-43)
- 4142 When we return to the root, we gain the meaning;
When we pursue external objects, we lose the reason.
The moment we are enlightened within,
We go beyond the voidness of a world confronting us.
Seng-T'San (540?-606 A.D.)
- 4143 Reason is like an officer when the King appears;
The officer then loses his power and hides himself.
Reason is the shadow cast by God; God is the sun.
Jalal-Uddin Rumi (1207-1273)
- 4144 The men of experiment are like the ant; they only collect
and use. The reasoners resemble spiders, who make cobwebs
out of their own substance. But the bee takes a middle
course; it gathers its material from the flowers of the
garden and of the field, but transforms and digests it by a
power of its own.
Leonardo Da Vinci (1452-1519)
- 4145 Science has its being in a perpetual mental restlessness.
William Temple (1628-1699)
- 4146 We can only reason from what is; we can reason on
actualities, but not on possibilities.
Bolingbroke (1678-1751)
- 4147 Learning is the dictionary, but sense the grammar of science
Sterne (1713-1768)
- 4148 Logic and metaphysics make use of more tools than all the
rest of the sciences put together, and they do the least
work.
Colton (1780-1832)
- 4149 Art and science have their meeting point in method.
Bulwer-Lytton (1803-1873)
- 4150 Life is a perpetual instruction in cause and effect.
Emerson (1803-1882)

- 4151 The theory that can absorb the greatest number of facts, and persist in doing so, generation after generation, through all changes of opinion and detail, is the one that must rule all observation.
John Weiss (1818-1879)
- 4152 The work of science is to substitute facts for appearances and demonstrations for impressions.
John Ruskin (1819-1900)
- 4153 Reason creates science; sentiments and creeds shape history.
Gustave LeBon (1841-1931)
- 4154 Science, like life, feeds on its own decay. New facts burst old rules; then newly divined conceptions bind old and new together into a reconciling law.
William James (1842-1910)
- 4155 Every great advance in science has issued from a new audacity of imagination.
John Dewey (1859-1952)
- 4156 Science is nothing but developed perception, interpreted intent, common sense rounded out and minutely articulated.
George Santayana (1863-1952)
- 4157 Science is the tool of the Western mind and with it more doors can be opened than with bare hands. It is part and parcel of our knowledge and obscures our insight only when it holds that the understanding given by it is the only kind there is.
C. G. Jung (1875-1961)
- 4158 The process of scientific discovery is, in effect, a continual flight from wonder.
Einstein (1879-1955)
- 4159 Truth in science can be defined as the working hypothesis best suited to open the way to the next better one.
Konrad Lorenz (born 1903)
- 4160 Science is the refusal to believe on the basis of hope.
C. P. Snow (1905-1980)

4. POSITIVE

- 4161 The gods plant reason in mankind, of all good gifts the highest.
Sophocles (B.C. 495-406)

- 4162 Reason is the mistress and queen of all things.
Cicero (B.C. 106-43)
- 4163 Happy the man who has been able to learn the causes
of things.
Vergil (B.C. 70-19)
- 4164 Observation, not old age, brings wisdom.
Publilius Syrus (fl. B.C. 42)
- 4165 Nothing has such power to broaden the mind as the ability to
investigate systematically and truly all that comes under
thy observation in life.
Marcus Aurelius (121-180 A.D.)
- 4166 General observations drawn from particulars are the jewels
of knowledge, comprehending great store in a little room.
John Locke (1632-1704)
- 4167 Science is the great antidote to the poison of enthusiasm
and superstition.
Adam Smith (1723-1790)
- 4168 Science and art belong to the whole world,
and before them vanish the barriers of nationality.
Goethe (1749-1832)
- 4169 Science is a first-rate piece of furniture for a man's
upper chamber, if he has common sense on the ground floor.
Oliver Wendell Holmes (1809-1894)
- 4170 The most beautiful thing we can experience is the
mysterious. It is the source of all art and science.
He to whom this emotion is a stranger, who can no longer
pause to wonder and stand rapt in awe, is as good as dead;
his eyes are closed.
Einstein (1879-1955)
- 4171 The end of science is not to prove a theory,
but to improve mankind.
Manly P. Hall (born 1901)
- 4172 All science is concerned with the relationship of cause and
effect. Each scientific discovery increases man's ability
to predict the consequences of his actions and thus his
ability to control future events.
Laurence J. Peter (born 1919)

5. NEGATIVE

- 4173 How can finite grasp infinity?
Dryden (1631-1700)
- 4174 Reason is a very light rider, and easily shook off.
Swift (1667-1745)
- 4175 Who reasons wisely is not therefore wise;
His pride in reasoning, not in acting, lies.
Pope (1688-1744)
- 4176 Many are destined to reason wrongly; others, not to reason
at all; and others, to persecute those who do reason.
Voltaire (1694-1778)
- 4177 Science has been seriously retarded by the study of what is
not worth knowing, and what is not knowable.
Goethe (1749-1832)
- 4178 It is common error to infer that things which are
consecutive in order of time have necessarily the relation
of cause and effect.
Jacob Bigelow (1786-1879)
- 4179 The knowledge of the theory of logic has no tendency
whatever to make men good reasoners.
Macaulay (1800-1859)
- 4180 We are too much accustomed to attribute to a single cause
that which is the product of several, and the majority of
our controversies come from that.
Justus von Liebig (1803-1873)
- 4181 Here is the world, sound as a nut, perfect, not the smallest
piece of chaos left, never a stitch nor an end, nor a mark
of haste, or botching, or a second thought; but the theory
of the world is a thing of shreds and patches.
Emerson (1803-1882)
- 4182 Men are apt to mistake the strength of their feeling for the
strength of their argument. The heated mind resents the
chill touch and relentless scrutiny of logic.
William Gladstone (1809-1898)
- 4183 Science deals only with phenomena, and is but charlatanism
when it babbles about the powers or causes that produce
these, or what the things are, in essence, of which it gives
us merely the names.
Albert Pike (1809-1891)

- 4184 Science commits suicide when it adopts a creed.
Thomas Huxley (1825-1895)
- 4185 Science cannot solve the ultimate mystery of nature. And that is because, in the last analysis, we ourselves are part of nature and therefore part of the mystery that we are trying to solve.
Max Planck (1858-1947)

6. ADVICE

- 4186 Shun no toil to make yourself remarkable by some one talent. Yet do not devote yourself to one branch exclusively. Strive to get clear notions about all. Give up no science entirely, for all science is one.
Seneca (B.C. 3-65 A.D.)
- 4187 Although nature commences with reason and ends in experience it is necessary for us to do the opposite, that is to commence with experience and from this to proceed to investigate the reason.
Leonardo Da Vinci (1452-1519)
- 4188 Art and sciences are not cast in a mould, but are found and perfected by degrees, by often handling and polishing.
Montaigne (1533-1592)
- 4189 An idle reason lessens the weight of the good ones you gave before.
Swift (1667-1745)
- 4190 Sit down before fact as a little child, be prepared to give up every preconceived notion, follow humbly wherever and to whatever abysses Nature leads, or you shall learn nothing.
Thomas Huxley (1825-1895)
- 4191 Firstly, gradualness. About this most important condition of fruitful scientific work I can never speak without emotion. Gradualness, gradualness, gradualness.
Pavlov (1849-1936)
- 4192 True science teaches, above all, to doubt, and to be ignorant.
Miguel de Unamuno (1864-1936)
- 4193 There must be no barriers to freedom of inquiry. There is no place for dogma in science. The scientist is free, and must be free to ask any questions, to doubt any assertion, to seek for any evidence, to correct any errors.
J. Robert Oppenheimer (1904-1967)

7. POTPOURRI

8 of 9

- 4194 Rain falls, wind blows, plants bloom, leaves mature
and are blown away; these phenomena are all interrelated
with causes and conditions, are brought about by them,
and disappear as the causes and conditions change.
Buddha (B.C. 568-488)
- 4195 The science which teacheth arts and handicrafts
Is merely science for the gaining of a living;
But the science which teacheth deliverance from worldly
existence,
Is not that the true science?
Nagarjuna (c. 100-200 A.D.)
- 4196 He was in logic a great critic,
Profoundly skilled in analytic;
He could distinguish and divide
A hair 'twixt south and southwest side
On either which he would dispute,
Confute, change hands, and still confute.
Samuel Butler (1612-1680)
- 4197 One science only will one genius fit,
So vast is art, so narrow human wit.
Pope (1688-1744)
- 4198 Astronomy is one of the sublimest fields of human
investigation. The mind that grasps its facts and
principles receives something of the enlargement and
grandeur belonging to the science itself. It is a
quickenor of devotion.
Horace Mann (1796-1859)
- 4199 Every great scientific truth goes through three stages:
First, people say it conflicts with the Bible.
Next they say it had been discovered before.
Lastly, they say they always believed it.
Jean Louis Agassiz (1807-1883)
- 4200 My kingdom is as wide as the world, and my desire has no
limit. I go forward always, freeing spirits and weighing
worlds, without fear, without compassion, without love, and
without God. Men call me Science.
Gustave Flaubert (1821-1880)
- 4201 The great tragedy of Science: the slaying of a beautiful
hypothesis by an ugly fact.
Thomas Huxley (1825-1895)

- 4202 There is something fascinating about science. One gets such wholesome returns of conjectures out of such trifling investment of fact.
Mark Twain (1835-1910)
- 4203 Science is always wrong. It never solves a problem without creating ten more.
G. B. Shaw (1856-1950)
- 4204 Religions die when they are proved to be true. Science is the record of dead religions.
Oscar Wilde (1854-1900)
- 4205 A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it.
Max Planck (1858-1947)