

# *Rationality, Rhetoric, Skepticism & Logic*



*Over 825 Selected Quotations for the Ideological  
Skeptic*

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# Foreword

These quotations come from a wide variety of sources, primarily previous collections I have authored or coauthored, most particularly, *Selected Quotations for the Ideological Skeptic* (Editorial Research Service, 1992). *Be Reasonable: Selected Quotations for Inquiring Minds*, by Laird Wilcox and John George (Prometheus, 1994), and *The Degeneration of Belief*, by Laird Wilcox (Editorial Research Service, 1999). Other sources include my own notes, quotations sent to me by friends, internet searching, and the reading of a very large number of books.

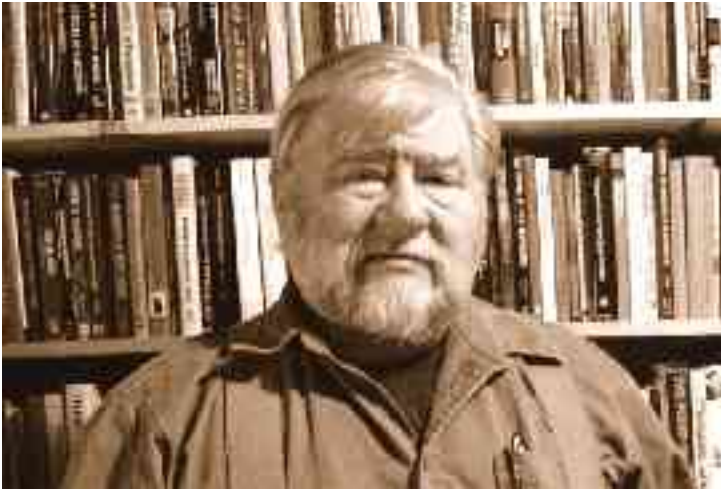
It's important to bear in mind that quotations are, almost by definition, statements removed from their original context, i.e., brief statements taken from an often vastly larger work. Even in cases where the quotation is brief, to the point and matter-of-fact, the larger work may frame it in a particular way that might get lost or muted when considered apart from it. In addition, people are often inconsistent. A person may say one thing in a particular work and then say something quite the opposite in another, or sometimes even the same work.

Another factor to consider is state of mind. I have heard writers say, "I knew what I was thinking when I wrote that," implying that it was somehow different from what the statement appears to mean now when read by others, perhaps of a different persuasion. People are often inconsistent in their beliefs and double standards often appear in their writings. For example, a person may defend freedom of expression and write glowing statements in its behalf, and then advocate denying that same freedom when it is claimed by a hated person or group. Politicians are particularly prone to this distressing behavior.

Having said all of this, nevertheless the vast majority of quotations in this volume do, in fact, mean what they appear to say in plain language. However, it's important to realize that there may be cases in which the author or others may dispute this. My advice is this: if you are going to use a quote from this volume in an important way, i.e., in an academic thesis or dissertation or in work for publication, it may be to your advantage to go to the original source and determine its suitability and/or accuracy for yourself.

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# Rationality, Rhetoric, Skepticism & Logic

~A~

1. Reason itself is fallible, and this fallibility must find a place in our logic. NICOLA ABBAGNANO (1901-1990).
2. The first key to wisdom is this -- constant and frequent questioning...for by doubting we are led to question and by questioning we arrive at the truth. PETER ABELARD (1099-1142), *Sic et non*, c. 1120.
3. A common mistake that people make when trying to design something completely foolproof is to underestimate the ingenuity of complete fools. DOUGLAS ADAMS (1952-2001).
4. The most misleading assumptions are the ones you don't even know you're making. DOUGLAS ADAMS (1952-2001), *Last Chance to See*, 1990.
5. I find that a great part of the information I have was acquired by looking up something and finding something else on the way. FRANKLIN P. ADAMS (1881-1960).
6. Facts are stubborn things; whatever may be our wishes, our inclinations, or the dictates of our passions, they cannot alter the state of facts and evidence. JOHN QUINCY ADAMS (1767-1848), U. S. President.

7. This shuffling trick of misstating the question, and setting up a man of straw to make a pompous demonstration of knocking him down... JOHN QUINCY ADAMS (1767-1848), U. S. President, *Diary*, 12 February 1841.
8. Genius is the talent for seeing things straight. It is seeing things in a straight line without any bend or break or aberration of sight, seeing them as they are, without any warping of vision. MAUDE ADAMS (1872-1953).
9. Men moving only in an official circle are apt to become merely official – not to say arbitrary – in their ideas, and are apter and apter with each passing day to forget that they only hold power in a representative capacity. WILLIAM ADAMS.
10. A man is quickly convinced of the truth of religion, who finds it not against his interests that it should be true. JOSEPH ADDISON (1672-1719), *The Spectator*, 23 August 1712.
11. The *truth* is often a terrible weapon of aggression. It is possible to lie, and even murder with the truth. ALFRED ADLER (1870-1937).
12. We acknowledge but one motive – to follow the truth as we know it whithersoever it may lead us; but in our heart of hearts we are well assured that the truth which has made us free, will in the long run make us glad also. MORTIMER ADLER, *The Adler Archives*.
13. Beware lest you lose the substance by grasping at the shadow. AESOP (620-560 B.C.), *Fables*.
14. Truth lies within a little and certain compass, but error is immense. JAMES AGEE (1909-1955).
15. Experiences accompanied by strong emotion may leave an unshakable belief in whatever explanation appealed to the individual at that time. J. E. ALCOCK, “The Belief Engine,” *Skeptical Inquirer* 19, 1995.
16. We can switch this critical thinking unit on and off. ... We may switch it off entirely if dealing with religious or other transcendental matters. J. E. ALCOCK, “The Belief Engine,” *Skeptical Inquirer* 19, 1995.
17. The *ad hominem* attack often takes the form of discounting a proposition by attributing prejudice or bias to its supporters. But what motivates us to believe as we do, say what we say, is one thing. The truth or falsity, validity or invalidity, of what we say is another. It is possible to be prejudiced but right. ROBERT W. ALLEN and LORNE GREENE, *The Propaganda Game*, 1966.
18. To reason analogically is to reason that because two or more things or types of things are alike in one or more respects..., they will therefore be found alike in some other respect(s) -- and consequent resemblance. ROBERT W. ALLEN and LORNE GREENE, *The Propaganda Game*, 1966.
19. I have always felt that a person’s intelligence is directly reflected by the number of conflicting points of view he can entertain simultaneously on the same topic. LISA ALTHER.
20. A lively, disinterested, persistent liking for truth is extraordinarily rare. Action and faith enslave thought, both of the in order not to be troubled or inconvenienced by reflection, criticism or doubt. HENRI FREDERIC AMIEL (1821-1881), *Journal*, 1849-1972.
21. Faith is a certitude without proofs...a sentiment, for it is a hope; it is an instinct, for it precedes all outward instruction. HENRI FREDERIC AMIEL (1821-1881), *Journal*, 1873.

22. Philosophy means, first, doubt; and afterwards the consciousness of what knowledge means, the consciousness of uncertainty and of ignorance, the consciousness of limit, shade, degree, possibility. The ordinary man doubts nothing and suspects nothing. HENRI FREDERIC AMIEL (1821-1881), *Journal*.
23. An error is the more dangerous the more truth it contains. HENRI FREDERIC AMIEL (1821-1881), *Journal*.
24. The man who insists upon seeing with perfect clearness before he decides, never decides. Accept life, and you must accept regret. HENRI FREDERIC AMIEL (1821-1881), *Journal*.
25. The philosopher aspires to explain away all mysteries, to dissolve them into light. Mystery, on the other hand, is demanded and pursued by the religious instinct; mystery constitutes the essence of worship. HENRY FREDERIC AMIEL (1821-1881), *Journal*.
26. In matters controversial / My perception's rather fine / I always see both points of view / The one that's wrong and mine. ANONYMOUS.
27. The ideology of science has very peculiar and diverse effects. On the one hand, it serves to identify a group of people who are themselves important and significant because they can manipulated the scientific culture. On the other, it casts out of the charmed circle those who are hopelessly incapable of understanding it. DAVID E. APTER, *Ideology and Discontent*, 1964.
28. Clichés, stock phrases, adherence to conventional, standardized codes of expression and conduct have the socially recognized function of protecting us against reality, that is, against the claim on our thinking attention that all events and facts make by virtue of their existence. HANNAH ARENDT (1906-1975), *The Life of the Mind*, 1978.
29. Nothing, it appears to me is of greater value in a man than the power of judgment; and the man who has it may be compared to a chest filled with books, for he is the son of nature and the father of art. PIETRO ARETINO (1492-1556).
30. How many a dispute could have been deflated into a single paragraph if the disputants had dared to define their terms. ARISTOTLE (384-322 B.C.).
31. If you would understand anything, observe its beginning and its development. ARISTOTLE (384-322 B.C.).
32. [A two-sided message] as a form of speech is satisfying, because the significance of the contrasted ideas is easily felt, especially when they are thus put side by side, and also because it has the effect of a logical argument; it is by putting two opposing conclusions side by side that you prove one of them false. ARISTOTLE (384-322 B.C.), *Rhetoric*.
33. Some men are just as sure of the truth of their opinions as others are of what they know. ARISTOTLE (384-322 B.C.), *Nichomachean Ethics*, 340 B.C.
34. Some of the great controversies would cease in a moment, if one or other of the disputants took care to make out precisely, and in few words, what he understands by the terms which are the subject of dispute. ANTOICE ARNAULD (1612-1694), *The Art of Thinking*.
35. It is almost impossible to exaggerate the proneness of the human mind to take miracles as evidence, and to seek for miracles as evidence. MATTHEW ARNOLD (1822-1888), *Literature and Dogma*, 1873.

36. The mass of mankind will never have any ardent zeal for seeing things as they are; very inadequate ideas will always satisfy them. On these inadequate ideas repose, and must repose, the general practice of the world. That is as much as saying that whoever sets himself to see things as they are will find himself one of a very small circle; but it is only by this small circle resolutely doing its own work that adequate ideas will ever get currency at all. MATTHEW ARNOLD (1822-1888), *The Function of Criticism*.
37. A subtle thought that is in error may yet give rise to fruitful inquiry that can establish truths of great value. ASAAC ASIMOV (1920-1992).
38. People everywhere enjoy believing things that they know are not true. It spares them the ordeal of thinking for themselves and taking responsibility for what they know. BROOKS ATKINSON (1894-1984), *Once Around The Sun*, 1951.
39. Faith is to believe what you do not yet see; the reward of this faith is to see what you believe. SAINT AUGUSTINE (340-430 A.D.), *Sermons*.
40. If any man can convince me and bring home to me that I do not think or act aright, gladly will I change; for I search after truth, by which man never yet was harmed. MARCUS AURELIUS, *Meditations*.
41. 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.), *Meditations*.
42. Accustom yourself to give careful attention to what others are saying, and try your best to enter into the mind of the speaker. MARCUS AURELIUS (121-180 A.D.), *Meditations*.
43. I dreamt a line that would make a motto for sober philosophy: Neither a be-all nor an end-all be. J. L. AUSTIN (1916-1960), *Philosophical Papers*, 1961.
44. It is particularly incumbent on those who never change their opinion, to be secure of judging properly at first. JANE AUSTIN (1775-1817), *Pride and Prejudice*, 1813.
45. The fact that people have religious experiences is interesting from the psychological point of view, but it does not in any way imply that there is such a thing as religious knowledge.... Unless he can formulate his "knowledge" in propositions that are empirically verifiable, we may be sure he is deceiving himself. A. J. AYER (1910-1989), *Language, Truth and Logic*, 1936.
46. The criterion which we use to test the genuineness of apparent statements of fact is the criterion of verifiability. We say that a sentence is factually significant to any given person, if, and only if, he knows how to verify the proposition which it purports to express. – that is, if he knows what observations would lead him, under certain conditions, to accept the proposition as being true, or reject it as being false. A. J. AYER (1910-1989), *Language, Truth and Logic*, 1936.
47. Sentences which simply express moral judgments do not say anything. They are pure expressions of feeling and as such do not come under the category of truth and falsehood. A. J. AYER (1910-1989), *Language, Truth and Logic*, 1936.
48. There never comes a point where a theory can be said to be true. The most that one can claim for any theory is that it has shared the successes of all its rivals and that it has passed at least one test which they have failed. A. J. AYER (1910-1989).
49. [Metaphysics is] an elaborate, diabolical invention for mystifying what was clear, and confounding what was intelligible. WILLIAM E. AYTOUN (1813-1865).



## ~B~

50. If a man begin with certainties, he shall end in doubt, but if he will be content to begin with doubts, he shall end in certainties. SIR FRANCIS BACON (1561-1626), *The Advancement of Learning*, 1605.
51. Histories make men wise; poetry, witty; the mathematics, subtle; nature philosophy, deep; ....logic and rhetoric, able to contend. SIR FRANCIS BACON (1561-1626), *Of Studies*.
52. The general root of superstition is that men observe when things hit, and not when they miss, and commit to memory the one, and pass over the other. SIR FRANCIS BACON (1561-1626).
53. Human nature is of its own nature prone to abstractions and gives a substance and reality to things which are fleeting. SIR FRANCIS BACON (1561-1626), *Novum Organum*, 1620.
54. For what a man would like to be true, that he more readily believes. SIR FRANCIS BACON (1561-1626), *Novum Organum*, 1620.
55. The human understanding supposes a greater degree of order and equality in things than it really finds; and although many things in nature be sui generis and most irregular, will yet invest parallels and conjugates and relatives where no such thing is. SIR FRANCIS BACON (1561-1626), *Novum Organum*, 1620.
56. There are in fact four very significant stumbling-blocks in the way of grasping the truth, which hinder every man however learned, and scarcely allow anyone to win a clear title to wisdom, namely, the example of weak and unworthy authority, longstanding custom, the feeling of the ignorant crowd, and the hiding of our own ignorance while making a display of our apparent knowledge. ROGER BACON (1220-1292), *Opus Majus*, 1266-67.
57. There are things that cannot be made objectively true by consensus. This is exactly what “objective” means... [Subjective truths] of course have objective consequences...but they are not themselves made objectively true by consensus. F. G. BAILEY, *The Tactical Uses Of Passions*, 1983.
58. All religions, with their gods, demigods, prophets, messiahs and saints, are the product of the fancy and credulity of men who have not yet reached the full development and complete possession of their intellectual powers. MIKHAIL A. BAKUNIN (1814-1876), *God and the State*, 1871.
59. Weary the path that does not challenge. Doubt is an incentive to truth and patient inquiry leadeth the way. HOSEA BALLOU (1771-1852).
60. Wisdom may be the prototype of an area of cognitive functioning in which older adults, because of their age, have an opportunity to hold something akin to a world record. P. B. BALTES & J. SMITH, in *Wisdom* (R. J. Sternberg), 1990.
61. Most people have a deep belief in cause-and-effect. If something happens (an effect), we assume that something -- usually someone -- must be responsible (a cause). Moreover, we would rather not locate that cause within ourselves, particularly if this means holding ourselves responsible for something unpleasant... DAVID P. BARASH, *Beloved Enemies: Our Need for Opponents*, 1994.

62. **Ad Baculum argument (appeal to force):** Strictly speaking, an ad baculum argument is any argument that fallaciously employs a threat as though it were a logical reason for believing a conclusion. STEPHEN F. BARKER, *The Elements of Logic*, 1965.
63. **Ad Misericordiam argument (appeal to pity):** Any argument whose premises, rather than containing evidence having a direct bearing on the conclusion instead gives why acceptance of the conclusion would prevent someone's misery. STEPHEN F. BARKER, *The Elements of Logic*, 1965.
64. **Ad Verecundiam argument (appeal to authority):** Any arguments whose premises, rather than containing evidence having a direct bearing on the conclusion, instead give evidence that some supposed authority advocates the conclusion. Such arguments are often, but not always, fallacious. STEPHEN F. BARKER, *The Elements of Logic*, 1965.
65. **To be objective is to tend toward viewing an event, act, idea, and so forth, apart from self-bias or needs of self... To be subjective is to be unable to separate oneself or one's feeling from things and happenings.** HAROLD BARRETT, *Speaking In America*, 1993.
66. **We all experience subjective pressures; we have our tastes and make our personal choices. But it's the narcissistic extremes that we need to recognize, the bent toward viewing all phenomena as they affect the self. A persistent narcissistic perspective precludes the use of a reliable gauge of measurement. It's an orientation based on the premises of self-meaning...** HAROLD BARRETT, *Speaking In America*, 1993.
67. **For whether in the laboratory or outside of it nothing is ever observed except in a setting of past experience and present interests.** FREDERICK C. BARTLETT (1886-1969), *The Mind At Work And Play*, 1951.
68. **Take as your motto this thought from Huxley: "God give me strength to face a fact though it slay me."** BERNARD BARUCH (1870-1965), *A Philosophy For Our Time*, 1954.
69. **For the educated, the authority of science rested on the strictness of its method, for the mass, it rested on its powers of explanation.** JACQUES BARZUN, *Science: The Glorious Experiment*, 1964.
70. **Many who have learned to demand proof are not yet sophisticated enough to know what proof it, to know that all facts, however raw and harsh, are not relevant facts, and that all specific examples are not cases in point.** BARNET BASKERVILLE, "The Illusion of Proof," *Western Speech* 25, 1961.
71. **It is pure illusion to think than an opinion which passes down from century to century, from generation to generation, may not be entirely false.** PIERRE BAYLE (1647-1706), *Thoughts on the Comet*, 1682.
72. **Begging The Question: A form of deductive argument in which the conclusion is already assumed as a premise. Such an argument is also said to be circular. A special kind of circular argument is that in which a question-begging definition is proposed in order to make the conclusion true by definition.** MONROE C. BEARDSLEY, *Thinking Straight*, 1966.
73. **Black-or-White Fallacy: An unsound form of argument in which it is held that there is no difference, or no notable difference, between two things, because the difference is one of continuous degree, and therefore the difference is the sum of many small and trivial differences.** MONROE C. BEARDSLEY, *Thinking Straight*, 1966.
74. **Post Hoc, Ergo Propter Hoc: A form of hasty generalization, in which it is inferred that because one event followed another, it must be the effect of the other.** MONROE C. BEARDSLEY, *Thinking Straight*, 1966.

75. There are two histories: the actual series of events that once occurred; and the idea series that we affirm and hold in memory. The first is absolute and unchanged – it was what it was whatever we do or say about it; the second is relative, always changing in response to the increase or refinement of knowledge. CARL BECKER (1873-1945), “What Is Evidence? The Relativist View,” *The Historian As Detective: Essays on Evidence* (Robin W. Winks, ed), 1969.
76. Whatever is almost true is quite false and among the most dangerous of errors. HENRY WARD BEECHER (1813-1887).
77. That truth which our age has forgotten more than any previous age ever did -- the rare knowledge that proof is of various kinds. Proof is not of one sort only. It is multiple in character. The very word “proof” takes on a different savor according to the matter toward which it is directed. HILAIRE BELLOC (1870-1950), 1933.
78. A great deal of intelligence can be invested in ignorance when the need for illusion is deep. SAUL BELLOW.
79. Rationalizing is the procedure whereby one justifies a position on the basis of a reason that he offers instead of a frank appraisal of his real reason or reasons. In rationalizing, one must first of all ignore principles of logic which he might otherwise recognize. But the results of adopting clear facts and relating them logically yields conclusions he does not relish. So he supplants then with propositions more palatable to him. JOHN B. BENNETT, *Rational Thinking*, 1980.
80. The fallacy of special pleading occurs when someone, because of subjective limitations produced by his own personal concerns or by deliberate intent, presents only one side of a case, the one favorable to him. JOHN B. BENNETT, *Rational Thinking*, 1980.
81. [M]any power social beliefs are based less on the capacity to prove or disprove the belief than on the side benefits that follow from the belief. W. LANCE BENNETT, *News: The Politics of Illusion*, 1983.
82. Oversimplification is now a common term of reproach in academic discussions; everyone is against oversimplification. But there is no parallel term nearly as frequently used to describe the opposite phenomenon, which surely occurs as often, if not more so. BENNET M. BERGER, *Authors of Their Own Lives*, 1990.
83. There do not exist things made, but only things in the making, not states that remain fixed, but only states in the process of change. HENRI BERGSON (1859-1941), *The Creative Mind*, 1946.
84. Truth is the cry of all, but the game of few. GEORGE BERKELEY (1685-1753), *Siris*.
85. He who says there is no such thing as an honest man, you may be sure is himself a knave. GEORGE BERKELEY (1685-1753). *Maxims Concerning Patriotism*.
86. Rational, that is to say, conforms to the necessity of things. ISIAH BERLIN (1909-1997), *Two Concepts of Liberty*, 1958.
87. It is a characteristic of science that the full explanations are often seized in their essence by the percipient scientist long in advance of any possible proof. JOHN DESMOND BERNAL (1901-1971), *The Origin of Life*, 1967.

88. Men who have excessive faith in their theories are not only ill-prepared for making discoveries; they also make poor observations. CLAUDE BERNARD (1813-1878), *Introduction to the Study of Experimental Medicine*, 1865.
89. A fact is in itself nothing. It is valuable only for the idea attached to it, or for the proof which it furnishes. CLAUDE BERNARD (1813-1878), *An Introduction to the Study of Experimental Medicine*, 1865.
90. If an idea presents itself to us, we must not reject it simply because it does not agree with the logical deductions of a reigning theory. CLAUDE BERNARD (1813-1878), *An Introduction to the Study of Experimental Medicine*, 1865.
91. In science the important thing is to modify and change one's ideas as science advances. CLAUDE BERNARD (1813-1878), *An Introduction to the Study of Experimental Medicine*, 1865.
92. In order to get at the truth, conflicting arguments and expressions must be allowed. There can be no freedom without choice, no sound choice without knowledge." DAVID K. BERNINGHAUSEN, *Arrogance of the Censor*, 1982.
93. I had an immense advantage...inasmuch as I had no fixed ideas from long established practice to control and bias my mind, and did not suffer from the general belief that whatever is, is right. SIR HENRY BESSEMER (1813-1898).
94. The crying need of today is to detach ourselves. And all you require is a sense of elegance: to regard the general situation with a modicum of skepticism. UGO BETTI (1892-1953), *The Fugitive*, 1953.
95. Contrary to the ancient myth, wisdom does not burst forth fully developed like Athena out of Zeus' head; it is built up, small step by small step, from most irrational beginnings. BRUNO BETTELHEIM (1903-1990), *The Uses Of Enchantment*, 1978.
96. Cultivate an intellectual habit of subordinating one's opinions and wishes to objective evidence and a reverence for things as they really are. WILLIAM I. B. BEVERIDGE (1879-1963), *The Art of Scientific Investigation*, 1950.
97. Hypothesis is a tool that can cause trouble if not used properly. We must be ready to abandon our hypothesis as soon as it is shown to be inconsistent with the facts. WILLIAM I. B. BEVERIDGE (1879-1963), *The Art of Scientific Investigation*, 1950.
98. Faith is the substance of things hoped for, the evidence of things not seen. BIBLE, *Hebrews 11:1*.
99. Bigot, n. One who is obstinately and zealously attached to an opinion that you do not entertain. AMBROSE BIERCE (1842-1914), *The Devil's Dictionary*, 1881-1914.
100. Faith, n. Belief without evidence in what is told by one who speaks without knowledge, of things without parallel. AMBROSE BIERCE (1842-1914), *The Devil's Dictionary*, 1906.
101. A historian stands in a fiduciary position towards his readers, and if he withholds from them important facts likely to influence their judgment, he is guilty of fraud. AUGUSTINE BIRRELL (1850-1933), *Obiter Dicta*, 1884.
102. A good writer of history is a guy who is suspicious. Suspicion marks the real difference between the man who wants to write honest history and the one who'd rather write a good story. JIM BISHOP (1907-1987), *New York Times*, 5 February 1955.

103. [To be reasonable] demands a sustained effort to suppress bias and, in striving for impartiality and objectivity, to pay a decent respect to the opinions of others. To act reasonably is to be willing to reason and thereby to submit to impersonal judgment. MAX BLACK, in *Reason* (R. F. Deardon, et al.), 1972.
104. A man will be acting reasonably to the extent that he tries to form a clear view of the end to be achieved and its probably value to him, assembles the best information about available means, their probably efficacy and the price of failure, and in the light of all this chooses the course of action most strongly recommended by reason. MAX BLACK, in *Reason* (R. F. Deardon, et. al.), 1972.
105. The truth about any matter of importance is seldom simple. Yet most people would like the truth to be simple and will readily accept any short formula which seems to express the truth. The result is that much thinking is controlled by slogans or catchwords, accepted without examination. MAX BLACK, *Critical Thinking*, 1946.
106. The kind of thinking about thinking which it is the aim of logic to cultivate is a special kind – systematic, persistent, and, above all, *critical*. MAX BLACK, *Critical Thinking*, 1946.
107. The logician searches for *principles* of reasoning. One of the ideals pursued by the logician is that of objectivity: he wants to certify chains of reasoning as “right” or “good” because they do *in fact* invariably yield truths and not falsehoods. MAX BLACK, *Critical Thinking*, 1946.
108. There is no direct relationship between the truth and the validity of a conclusion. A valid argument may have true premises and true conclusions; or false premises and false conclusion; or even false premises and true conclusion. A valid argument cannot, however, have all its premises true and its conclusions false. MAX BLACK, *Critical Thinking*, 1946.
109. The man who never alters his opinions is like standing water, and breeds reptiles of the mind. WILLIAM BLAKE (1757-1827), *The Marriage of Heaven and Hell*, 1790.
110. Religions are not revealed: they are evolved. If a religion were revealed by God, that religion would be perfect in whole and in part, and would be as perfect at the first moment of its revelation as after ten thousand years of practice. There has never been a religion that fulfills those conditions. ROBERT BLATCHFORD (1851-1943), *God and My Neighbor*, 1903.
111. Enough research will tend to support your hypothesis. ARTHUR BLOCK, *Murphey’s Law*, 1977.
112. There are two threats to reason: the opinion that one knows the truth about the most important things, and the opinion that there is no important truth about them. ALAN BLOOM (1930-1992), *Giants and Dwarfs: Essays 1960-1990*, 1990.
113. Every sentence I utter must be understood not as an affirmation, but as a question. NIELS BOHR (1885-1962), *New York Times Book Review*, 20 October 1957.
114. I have observed that the world has suffered far less from ignorance than from pretensions to knowledge. It is not skeptics or explorers but fanatics and ideologues who menace decency and progress. No agnostic ever burned anyone at the state or tortured a pagan, a heretic, or an unbeliever. DANIEL BOORSTIN (1914-2004), *Living Philosophies*, 1989.
115. While elements of knowledge are somehow and have a necessary relationship to one another, opinions are discrete and may be contradictory. A person may have two opinions which actually contradict each

other, yet he finds that both opinions are strongly held. DANIEL BOORSTIN (1914-2004), *Democracy and Its Discontents: Reflections on Everyday America*, 1974.

116. *Opinions tend to be epiphenomenal.* While knowledge tends to be phenomenal, concerning facts that are directly perceptible to the senses, opinions tend to be derivative and secondary. While knowledge is *of* this or that, opinions are *about* this or that. DANIEL BOORSTIN (1914-2004), *Democracy and Its Discontents: Reflections On Everyday America*, 1974.
117. Knowledge builds on knowledge. But one opinion may or may not add on to another. While knowledge grows, opinions oscillate. DANIEL BOORSTIN (1914-2004), *Democracy and Its Discontents: Reflections on Everyday America*, 1974.
118. When any society loses its capacity to debate its ends and means rationally, it ceases to be a society of men at all and becomes instead a mob, a pack, or a herd of creatures rather less noble than most animals. WAYNE C. BOOTH, *Now Don't Try To Reason With Me*, 1970.
119. Many highly intelligent people are poor thinkers. Many people of average intelligence are skilled thinkers. The power of a car is separate from the way the car is driven. EDWARD de BONO.
120. There is no alchemy of probabilities that will change ignorance into knowledge. Expectations must be founded upon cogent rather than insufficient reasons. EDWIN G. BORING (1896-1968), *The Logic of the Normal Law of Error in Mental Measurement*, 1920.
121. Nature does not seem to care very much whether our ideas are true or not, as long as we get on through life safely enough. And it is surprising on what an enormous amount of error we can get along comfortably. RANDOLPH BOURNE (1886-1918), *Youth and Life*, 1913.
122. The ironist is the great intellectual democrat, in whose presence and before whose law all ideas and attitudes stand equal. In his world there is no privileged caste, no aristocracy of sentiments to be revered, or segregated systems of interests to be tabooed. Nothing human is alien to the ironist. RANDOLPH BOURNE (1886-1918), *Youth and Life*, 1913.
123. Metaphysics is the finding of bad reasons for what we believe upon instinct; but to find these reasons is no less an instinct. FRANCIS H. BRADLEY (1846-1924), *Appearance and Reality*, 1893.
124. Faith is the commitment of one's consciousness to beliefs for which one has no sensory evidence or proof. When a man rejects reason as his standard of judgment, only one alternative standard remains: his feelings. A mystic is a man who treats his feelings as tools of cognition. A mystic equates feelings with knowledge. NATHANIEL BRANDEN, *Psychology of Self-Esteem*, 1969.
125. The sole result of the mystic projection of "another" reality is that it incapacitates man psychologically for this one. NATHANIEL BRANDEN, *Psychology of Self-Esteem*, 1969.
126. Man masters nature not by force but by understanding. That is why science has succeeded where magic failed: because it has looked for no spell to cast on nature. JACOB BRONOWSKI, "The Creative Mind," *Science and Human Values*, 1956.
127. About the age of three...a child begins to show the ability to put together a narrative in coherent fashion and especially the capacity to recognize narratives, to judge their well-formedness. Children quickly become virtual Aristotelians, insisting upon any storytellers observation of the "rules," upon proper beginnings, middles, and particularly ends. PETER BROOKS, *Reading For The Plot: Design and Intention In Narrative*, 1984.

128. Avoid rigid, non-process orientations. Problems are often created when we assume that things are either one extreme or the other, either black or white. WILLIAM D. BROOKS, *Speech Communication*, 1971.
129. It is impossible to know everything about anything...we do not “take in” all of the information available in the process of perception. Our interests, experiential history, psychological needs, physical capacities, and physical efficiencies operate to select and filter our information. The picture we get, then, is a partial one, and there is always some error in any perception or cognition. No matter how we describe the world, there will be some distortion. WILLIAM D. BROOKS, *Speech Communication*, 1971.
130. The mortalest enemy unto knowledge, and that which hath done the greatest execution unto truth, has been a preemptory adhesion unto authority, and especially of our belief upon the dictates of antiquities. SIR THOMAS BROWN (1605-1682).
131. [T]he either-or fallacy ... and dichotomous thinking general, damages reasoning by overly restricting our vision. ... Rigid, dichotomous thinking limits the range of your decisions and options. Even worse, it overly simplifies complex situations. As a consequence, dichotomous thinkers are high-risk candidates for confusion. M. NEIL BROWNE & STUART M. KELLEY, *Asking The Right Questions: A Guide to Critical Thinking*, 1998.
132. When asked for an explanation, it’s frequently tempting to hide our ignorance by labeling or name what occurred. Then we assume that because we know the name, we know the cause. ... Be especially alert for this error when people allege that they have discovered a cause for the behavior yet all they have provided is a different name for the behavior. M. NEIL BROWNE & STUART M. KELLEY, *Asking the Right Questions: A Guide to Critical Thinking*, 1998.
133. Falsification is crucial to us for one overwhelming reason. Man, we know, is infinitely capable of belief. Surprising that he has not been described as *Homo Credens*. JEROME SEYMOUR BRUNER, *Actual Minds, Possible Worlds*, 1966.
134. The shrewd guess, the fertile hypothesis, the courageous leap to a tentative conclusion – these are the most valuable coin of the thinker at work. JEROME SEYMOUR BRUNER, *The Process of Education*, 1960.
135. The elegant rationality of science and the metaphoric non-rationality of art operate with deeply different grammars; perhaps they even represent a profound complementarity. JEROME SEYMOUR BRUNER, *On Knowing: Essays For The Left Hand*, 1962.
136. To most people nothing is more troublesome than the effort of thinking. JAMES BRYCE (1838-1926), *Studies in History and Jurisprudence*, 1901.
137. Science eschews the personal. Although it is commonplace to ascribe this tendency to some fundamental coldness on the part of scientists, in fact it is really one of the great intellectual triumphs of the 20<sup>th</sup> century that scientists have learned to discount the experiences of individuals when searching for cause and effect in the natural world. STEPHEN BUDIANSKY, “The Meat Of The Matter,” *Washington Post Book World*, 22 April 1984.
138. The best teacher is the one who suggests rather than dogmatizes, and inspires his listener with the wish to teach himself. BULWER.
139. For those who do not think, it is best to rearrange their prejudices once in a while. LUTHER BURBANK (1849-1926).

140. If you would not have affliction visit you twice, listen at once to what it teaches. JAMES BURGH (1714-1775).
141. He that struggles with us strengthens our nerves, and sharpens our skill. Our antagonist is our helper. EDMOND BURKE (1729-1797), *Reflections on the Revolution in France*, 1790.
142. Superstition is the religion of feeble minds. EDMOND BURKE (1729-1797), *Reflections on the Revolution in France*, 1790.
143. When we observe nature we see what we want to see, according to what we believe we know about it at the time. Nature is disordered, powerful and chaotic, and through fear of the chase we impose system on it. We abhor complexity, and seek to simplify things whenever we can by whatever means we have at hand. JAMES BURKE, *The Day The Universe Changes*, 1985.
144. Was some pow're the giftie gie us / To see ourselves as others see us! / It would frae many a blunder frae us, / And foolish notion. ROBERT BURNES (1756-1796).
145. It is always easier to believe than to deny. Our minds are naturally affirmative. JOHN BURROUGHS (1835-1902), *The Way of All Flesh*, 1903.
146. As compared with impulsive commitment to the first idea which dawns, that is, with intuitive action, reasoning is patient, exploratory of other possibilities, and deliberative. EDWIN ARTHUR BURTT (1892-1989), *Right Thinking*, 1946.
147. Creatures capable of reasoning often trust their intuitive method even in problems where some critical evaluation of suggestions would seem to be possible, and find satisfaction in doing so. We tend naturally to accept whatever directly satisfies us, and to avoid replacing it by something that is not so appealing...an emotionally attractive idea is directly satisfying just on that account. EDWIN ARTHUR BURTT (1892-1989), *Right Thinking*, 1946.
148. Once beliefs have been adopted by an individual or community, many forces operate to give the continued sway, even though they may be erroneous, and even though occurrences are frequent which might be expected to throw doubt upon them... A belief once adopted is not merely a contemplative affair, it is an established habit, providing ready guidance for action on the objects with which the belief is concerned. EDWIN ARTHUR BURTT (1892-1989), *Right Thinking*, 1946.
149. Science has a simple faith, which transcends utility. It is the faith that it is the privilege of man to learn to understand, and that this is his mission. VANNEVAR BUSH (1890-1974), *Science is Not Enough*, 1967.
150. Knowledge for the sake of understanding, not merely to prevail -- *that* is the essence of our being. None can define its limits, or set its ultimate boundaries. VANNEVAR BUSH (1890-1974), *Science is Not Enough*, 1967.
151. The credibility, or the certain truth of a matter, of fact does not immediately prove anything concerning the wisdom or goodness of it. JOSEPH BUTLER (1692-1752), *The Analogy of Religion* 1736.
152. There is one thing certain, namely, that we can have nothing certain; therefore it is not certain that we can have nothing certain. SAMUEL BUTLER (1835-1902), *Notebooks*, 1912.
153. ...the Erewhonians are a meek people, easily led by the nose, and quick to offer up common sense at the shrine of logic. SAMUEL BUTLER (1835-1902).



154. Whatever Skeptic could inquire for, For every why he had a wherefore. SAMUEL BUTLER (1835-1902), *Hudibras*.



155. The purely rational human being, whose thought and behavior are the crystallization of absolute reason, is a fictional character who can never exist in the real world. DANIEL B. CAINE, *Within Reason: Rationality and Human Behavior*, 1999.

156. Logical reasoning...seems dependent on the rules of reliable sequencing to create statements where one thing entails another. Our sophisticated projection abilities are very sequential: a chess master, for example, tends to see each board configuration, not just after the next move but a half dozen moves ahead, as one of several alternative scenarios. WILLIAM H. CALVIN, "The Trilogy of Homo Seriatim," in *Speculations: The Reality Club* (John Brockman, ed.), 1990.

157. Why should it be that whenever men have looked for something solid on which to found their lives, they have chosen not the facts win which the world abounds but the myths of an immemorial imagination? JOSEPH CAMPBELL (1904-1987), *The Masks of God: primitive Mythology*, 1987.

158. We are not certain, we are never certain. If we were we could reach some conclusions, and we could, at least, make others take us seriously. ALBERT CAMUS (1913-1960), *The Fall*, 1956.

159. Argumentation is an appeal to the understanding for the purpose of influencing belief. Conviction results in part from logical reasoning. Logic, the process of distinguishing between good and bad reasoning, tests the thinking process to determine if the inferences drawn from evidence conform to the established rules of reasoning. G. G. CAPP and T. R. CAPP, *Principles of Argumentation and Debate*, 1965.

160. You cannot become a truly effective advocate unless you know all sides of your subject thoroughly, opposing arguments as well as your own. G. R. CAPP and T. R. CAPP, *Principles of Argumentation and Debate*, 1965.

161. Analogy is reasoning based on the assumption that if two things are alike in several important know respects, they will probably be alike in all other respects not known or expected. ... As such, analogy does not lead to a conclusion regarding a specific case, but rather to a resemblance of relationships between the compared objects. ... Even when similarities appear to exist, the conclusions from analogy cannot offer absolute proof, for there may be only apparent similarity. G. R. CAPP and T. R. CAPP, *Principles of Argumentation and Debate*, 1965.

162. Often a liberal antidote of experience supplies a sovereign cure for a paralyzing abstraction built upon a theory. BENJAMIN N. CARDOZO (1870-1938), *The Paradoxes of Legal Science*, 1928.

163. I grow daily to honor facts more and more, and theory less and less. THOMAS CARLYLE (1795-1881), *Letter to Emerson*, 29 April 1836.

164. I will call metaphysical all those propositions which claim to represent knowledge about something which is over or beyond all experience.... Metaphysicians cannot avoid making their propositions non-verifiable, because if they make them verifiable, the decision about the truth or falsehood of their doctrines would depend upon experience and therefore belong to the region of empirical science. R. CARNAP (1891-1970), *Philosophy and Logical Syntax*, 1935.

165. It used to be said that the facts speak for themselves. This is, of course, untrue. The facts speak only when the historian calls on them; it is he who decides to which facts to give the floor, and in what order or context. E. H. CARR (1892-1982), *What Is History*, 1961.
166. A few observations and much reasoning lead to error; many observations and a little reasoning to truth. ALEXIS CARREL (1873-1944).
167. The background linguistic system (in other words, the grammar) of each language is not merely a reproducing instrument for voicing ideas but rather is itself the shaper of ideas. ... We cut nature up, organize it into concepts, ascribe significances as we do, largely because we are parties to an agreement to organize it in this way... JOHN B. CARROLL (ed), *Language: Thought and Reality*, 1964.
168. "When I use a word," Humpty Dumpty said in a rather scornful tone, "it means just what I chose it to mean -- neither more nor less." "The question is," said Alice, "whether you can make words mean so many different things." "The question is," said Humpty Dumpty, "which is to be master -- that's all." LEWIS CARROLL (1832-1898), *Through the Looking Glass*, 1872.
169. Each theory becomes a Procrustean bed on which the empirical facts are stretched to fit a preconceived pattern. ERNST CASSIRER (1874-1945), *An Essay On Man*, 1944.
170. Man lives in a symbolic universe... He has so enveloped himself in linguistic forms...that he cannot see or know anything except by the interpretations of this artificial medium. ERNST CASSIRER (1874-1945), *An Essay On Man*, 1944.
171. Religion claims to be in possession of an absolute truth; but its history is a history of errors and heresies. It gives us the promise and prospect of a transcendent world -- far beyond the limits of our human experience -- and it remains human, all too human. ERNST CASSIRER (1874-1945), *An Essay on Man*, 1944.
172. The evidence for generalizations, no matter what type, takes the form of an argument from observed instances. Such an argument is never more than probable, that is, never certain. ALBURY CASTELL, *College Logic*, 1935.
173. A man is not necessarily intelligent because he has plenty of ideas, any more than he is a good general because he has plenty of soldiers. NICHOLAS SEBASTIEN CHAMFORT (1741-1794), 1805
174. Error is the discipline through which we advance. WILLIAM ELLERY CHANNING (1780-1842), *The Present Age*.
175. The final delusion is the belief that one has lost all delusions. MAURICE CHAPELAIN (1905-1992), *Main Courante*, 1957.
176. A good semantic discipline gives the power to separate mental machinery from tangible events; makes us conscious of abstracting; prevents us from peopling the universe with nonexistent things. STUART CHASE (1888-1985), *The Tyranny of Words*, 1938.
177. Chantecler, the cock in Rostand's famous play, observed that after he crowed the sun came up. Therefore, he reasoned, his crowing caused the sun to rise. This illustrates perfectly what logicians call the *post hoc* fallacy. When one event precedes another event in time, the first is assumed to be the cause of the second. STUART CHASE (1888-1985), *Guides to Straight Thinking*, 1956.
178. *Ad Verecundiam* means "appeal to revered authority." It is listed among the classic fallacies and its simplicity is deceptive. Quoting authorities is of course entirely legitimate, and only when pushed too

- far, when a Big Name freezes mental activity, does it become a fallacy. It is not so much that one thinks wrongly, as that one ceases to think at all. STUART CHASE (1888-1985), *Guides to Straight Thinking*, 1956.
179. In the logical fallacy, *circulus in probando*, or arguing in a circle, what looks like proof, or a valid conclusion, turns out, on closer inspection, to be saying the same thing. The conclusion is neatly inserted into the premises, and the argument boils down to: "It must be true because it says so itself." STUART CHASE (1888-1985), *Guides to Straight Thinking*, 1956.
180. There a belief amongst laymen that science purports to represent a system of absolute truth, which is furthermore wholly independent of language; that the world behaves in such and such a way according to "blind immutable laws" – forgetting that such laws are man-made and expressed in human language. Scientific laws are not sets of rules that nature must obey. ... they are rules which we ourselves must accept, if we are to communicate with one another in scientific discussion. COLIN CHERRY, *On Human Communication*, 1957.
181. It is assumed that the skeptic has no bias; whereas he has a very obvious bias in favor of skepticism. GILBERT KEITH CHESTERTON (1874-1936), *All Things Considered*.
182. It is very good for a man to talk about what he does not understand; as long as he understands that he does not understand it. GILBERT KEITH CHESTERTON (1874-1936), *A Handful of Authors*.
183. The moment you step into a world of facts, you step into a world of limits. You can free things from alien or accidental laws, but not from the laws of their own nature. GILBERT KEITH CHESTERTON (1874-1936), *Orthodoxy*, 1959.
184. Men occasionally stumble on the truth, but most of them pick themselves up and hurry off as if nothing had happened. WINSTON CHURCHILL (1874-1965).
185. The first law is that the historical shall never dare to set down what is false; the second, that he shall never dare to conceal the truth; the third, that there shall be no suspicion in his work of either favoritism or prejudice. MARCUS TULLIUS CICERO (106-43 B.C.), *De Oratore*.
186. I am not disposed to approve the practice traditionally ascribed to the Pythagoreans, who, when questioned as to the grounds of any assertion that they had advanced in debate, are said to have been accustomed to reply, 'He himself said so'...'he himself' being Pythagoras. MARCUS TULLIUS CICERO (106-43 B.C.), *De Natura Deorum*.
187. The search after truth is peculiar to man. MARCUS TULLIUS CICERO (106-43 B.C.), *De Officiis*.
188. Wise men are instructed by reason; men of understanding, by experience; the most ignorant, by necessity; and beasts, by nature. MARCUS TULLIUS CICERO (106-43 B.C.), *Ad Atticum*.
189. The causes of events are always more interesting than the events themselves, MARCUS TULLIUS CICERO (106-43 B.C.), *Ad Atticum*.
190. Even the skeptic, in love with his doubts, turns out to be a fanatic of skepticism. E. M. CIORAN, *A Short History of Decay* (1911-1995), 1949.
191. The greatest tragedy in mankind's entire history may be the hijacking of morality by religion. ARTHUR C. CLARKE, "Credo," in *Living Philosophies* (Clifton Fadiman, ed), 1991.

192. It is wrong, everywhere, and for anyone, to believe anything upon insufficient evidence. WILLIAM K. CLIFFORD (1845-1879), *The Ethics of Belief*, 1877.
193. The goodness and greatness of a man do not justify us in accepting a belief upon the warrant of his authority, unless there are reasonable grounds for supposing that he knew the truth of what he was saying. WILLIAM K. CLIFFORD (1845-1879), *The Ethics Of Belief*, 1877.
194. We have no right to believe a thing true because everybody says so unless there are good grounds for believing that some one person at least has the means of knowing what is true, and is speaking the truth so far as he knows it. However many nations and generations of men are brought into the witness-box they cannot testify to anything which they do not know. WILLIAM K. CLIFFORD (1845-1879), *The Ethics of Belief*, 1877.
195. Every time we let ourselves believe for unworthy reasons, we weaken our powers of self-control, of doubting, of judicially and fairly weighing evidence. We all suffer severely enough from the maintenance and support of false beliefs and the fatally wrong action which they lead to. WILLIAM K. CLIFFORD (1845-1879), *The Ethics of Belief*, 1877.
196. If a man, holding a belief which he was taught in childhood or persuaded of afterwards, keeps down and pushes away doubts which arise about it in his mind, purposely avoids the reading of books and the company of men that call into question or discuss it, and regards as impious those questions which cannot easily be asked without disturbing it – the life of that man is one long sin against mankind. WILLIAM K. CLIFFORD (1845-1879), *The Ethics of Belief*, 1877.
197. The sociological historian uses his theory as the criterion for the selection of the relevant facts, and then on the basis of those selected facts he illustrates and confirms the theory by which they have been selected...success is built in. ALFRED COBBAN (1901-1968), *Sociological Interpretation of the French Revolution*, 1964.
198. All revolutionary advances in science may consist less of sudden and dramatic revelations than a series of transformations, of which the revolutionary significance may not be seen...until the last great step. I. BERNARD COHEN, *The Newtonian Revolution*, 1980.
199. The argument that we should believe certain things because they are helpful to what we have assumed to be practical interests, is a willful confusion between what be pleasant for the time being and what is determined by the weight of rational evidence. MORRIS R. COHEN (1880-1947), *Journal of Philosophy and Scientific Method*, 1925.
200. The business of the philosopher is well done if he succeeds in raising genuine doubt. MORRIS R. COHEN (1880-1947), *A Dreamer's Journey*, 1949.
201. The prejudice against careful analytic procedure is part of the human impatience with technique which arises from the fact that men are interested in results and would like to attain them without the painful toil which is the essence of our moral finitude. MORRIS R. COHEN (1880-1947).
202. Logic is correct reasoning. To be logical is to argue reasonably. By means of logic we can find out what follows if we accept a given statement as true. ... Logic may be said to be concerned with the question of the adequacy of different kinds of evidence. Traditionally, however, it has devoted itself in the main to the study of what constitutes proof, that is, complete or conclusive evidence. MORRIS R. COHEN (1880-1947) & ERNEST NAGEL (1901-1985), *Logic and the Scientific Method*, 1934.

203. Facts are not truths; they are not conclusions; they are not even premises, but in the nature and parts of premises. The truth depends on, and is only arrived at, *by a legitimate deduction from all the facts which are truly material*. SAMUEL TAYLOR COLERIDGE (1772-1834), *Table-Talk*, 1831.
204. Never be afraid to doubt, if you only have the disposition to believe, and doubt in order that you may end in believing truth. SAMUEL TAYLOR COLERIDGE (1772-1834), *Aids to Reflections*, 1825.
205. Nothing so completely baffles one who is full of trick and duplicity himself, than straightforward and simple integrity in another. CHARLES CALEB COLTON (1780-1832), *Lacon*, 1825.
206. Precisely in proportion to our own intellectual weakness will be our credulity as to those mysterious powers assumed by others. CHARLES CALEB COLTON (1780-1832), *Lacon*, 1825.
207. All good intellects have repeated, since Bacon's time, that there can be no real knowledge but that which is based on observed facts. AUGUSTE COMPTE (1798-1857), *The Positive Philosophy*, 1830-40.
208. By three methods we may learn wisdom: First, by reflection, which is noblest; Second, by imitation, which is easiest; and third by experience. CONFUCIUS (551-479 B.C.), *Analects*.
209. When you know a thing, to hold that you know it; and when you do not know a thing, to allow that you do not know it; this is knowledge. CONFUCIUS (551-479 B.C.), *Analects*.
210. Some scientists take the position that there is no relationship between science and society. They believe that science exists in and of itself, as a kind of religion. BARRY COMMONER, *The Ecological Crisis*, 1969.
211. To have his path made clear to him is the aspiration of every human being in our beclouded and tempestuous existence. JOSEPH CONRAD (1857-1924), *The Mirror of the Sea*, 1906.
212. Curiosity is free-wheeling intelligence. It endows the people who have it with a generosity in argument and a serenity in their own mode of life which springs from the cheerful willingness to let life take the forms it will. ALISTAIRE COOKE, "The Art of Curiosity," *Vogue*, January 1953.
213. Knowledge comes, but wisdom lingers. It may not be difficult to store up in the mind a vast quantity of facts within a comparatively short time, but the ability to form judgments requires the severe discipline of hard work and the tempering heat of experience and maturity. CALVIN COOLIDGE (1872-1933), U. S. President.
214. The ability to discriminate between that which is true and that which is false is one of the last attainments of the human mind. JAMES FENNIMORE COOPER (1759-1851), *The American Democrat*, 1838.
215. Reasoning is a special kind of thinking in which inference takes place, in which conclusions are drawn from premises... The logician is concerned only with the correctness of the completed process. The question is always: does the conclusion reached follow from the premises used or assumed? IRVING M. COPI, *Introduction to Logic*, 1978.
216. Suspicion is a thing very few people can entertain without letting the hypothesis turn, in their minds, into fact... DAVID CORT, *Social Astonishments*, 1963.
217. Wisdom consists in the anticipation of consequences. NORMAN COUSINS (1915-1990), *Saturday Review*, 15 April 1978.

218. There is a tendency to mistake data for wisdom, just as there has always been a tendency to confuse logic with values, intelligence with insight. Unobstructed access to facts can produce unlimited good only if it is matched by the desire and ability to find out what they mean and where they lead. Facts are terrible things if left sprawling and unattended. They are too easily regarded as evaluated certainties rather than as the rawest of raw materials crying to be processed into the texture of logic. NORMAN COUSINS (1915-1990), *Human Options*, 1981.
219. It is always the task of the intellectual to “think otherwise.” This is not just a perverse idiosyncrasy. It is an absolutely essential feature of a society. HARVEY COX, *The Secular City*, 1966.
220. It is always difficult for the non-historian to remember that there is nothing absolute about historical truth. What we consider as such is only an estimation, based upon what the best available evidence tells us. It must constantly be tested against new information and new interpretations that will appear, however implausible they may be, or it will lose its vitality and degenerate into dogma or shibboleth. GORDEN A. CRAIG, *New York Review of Books*, 19 September 1996.
221. I beseech you, in the bowels of Christ, think it possible you may be mistaken. OLIVER CROMWELL (1599-1658), 1650.

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222. It is the besetting sin of the idealist to sacrifice reality for his ideals; to reject life because it fails to come up to his idea; and this vice is just as prevalent among religious idealists as secular ones. CHRISTOPHER DAMSON (1889-1970), *The Judgment of Nations*, 1942.
223. The most dangerous tendency of the modern world is the way in which bogus theories are given the force of dogma. JEAN DANIELOU (1905-1974), *The Lord of History*, 1958.
224. I do not pretend to know where many ignorant men are sure -- this is all that agnosticism means. CLARENCE S. DARROW (1857-1938), 1925.
225. The origin of what we call civilization is not due to religion but due to skepticism... The modern world is the child of doubt and inquiry, as the ancient world was the child of fear and faith. CLARENCE S. DARROW (1857-1938), *Summer For The Gods* (Edward J. Larson), 1997.
226. False facts are highly injurious to the progress of science, for they often long endure; but false views, if supported by some evidence, do little harm, as everyone takes a salutary pleasure in proving their falseness; and when this is done, one path towards error is closed and the road to truth is often at the same time opened. CHARLES DARWIN (1809-1882), *The Descent of Man*, 1871.
227. I have steadily endeavored to keep my mind free so as to give up any hypothesis, however much beloved, as soon as the facts are shown to be opposed to it. CHARLES DARWIN (1809-1882), *Life and Letters of Charles Darwin*, 1888.
228. Imagination, as well as reason, is necessary to perfection of the philosophical mind. A rapidity of combination, a power of perceiving analogies, and of comparing them by facts, is the creative source of discovery. SIR HUMPHREY DAVY (1778-1829), *Parallels Between Art and Science*, 1807.
229. Natural selection, the blind, unconscious, automatic process which Darwin discovered ... has no purpose in mind. It has no mind and no mind's eye. It does not plan for the future. It has no vision, no

foresight, no sight at all. If it can be said to play the role of watchmaker in nature, it is the *blind* watchmaker. RICHARD DAWKINS, *The Blind Watchmaker*, 1986.

230. A myth is a fixed way of looking at the world which cannot be destroyed because, looked at through the myth, all evidence supports the myth. EDWARD De BONO, *Beyond Yes And No*.
231. Most disagreements arise from the assumption that if the over-all picture seems the same for everyone then they are reacting to the same thing and it is only their thinking that is wrong. In practice one shuttles backwards and forwards between clues and ideas. The danger is that once you have an idea it is easy to notice only those clues which fit in with the idea. EDWARD DeBONO, *Practical Thinking*, 1971.
232. The sharp-brained animals establish a few quick and efficient reaction patterns and then become trapped by these. It is not often realized that it is the blurry-brained creative people who have established new general ideas and then gone on to make them more specific. The sharp-brained outlook can never establish new ideas because it does not mess around, never makes mistakes, and is completely trapped by existing ideas. EDWARD DeBONO, *Practical Thinking*, 1971.
233. The criterion for selection of premises, examples, analogies, authorities and statistics is ultimately, "Will the listener accept it?" The persuader's only real guide in evaluating the reasonableness of his arguments is the degree to which the components of proof are congruent with the listener's total predispositional field. Logical proof is thus proof adapted to man's natural rational process. JESSE G. DELIA, "The Logical Fallacy, Cognition Theory, and the Enthymeme," *Quarterly Journal of Speech* 56, 1970.
234. Whereas in mature (or secondary process) thinking identity is accepted only on the basis of identical subjects, in paleological (or primary process) thinking identity is accepted on the basis of identical predicates. E. VON DEMARUS, in *Language and Thought in Schizophrenia: Collected Papers* (J. S. Kasanin), 1944.
235. Men have fashioned an image of chance as an excuse for their own stupidity. For Chance rarely conflicts with intelligence, and most things in life can be set I order by an intelligent sharp-sightedness. DEMOCRITUS (460-370 BC), *Fragment*.
236. Nothing is easier than self-deceit. For what each man wishes, that he also believes to be true. DEMOSTHENES (385-322 B.C.).
237. Prudent minds have as a natural gift one safeguard which is the common possession of all, and this applies especially to the dealings of democracies with dictatorships. What is this safeguard? Skepticism. This you must preserve. DEMOSTHENES (385-322 B.C.).
238. Nothing sways the stupid more than arguments they can't understand. CARDINAL de RETZ (1614-1679), *Memoires*.
239. Good sense is of all things in the world the most equitably distributed; for everyone thinks himself so amply provided with it, that even those most difficult to please in everything else do not commonly desire more of it than they already have. RENE DESCARTES (1596-1650), *Discourse on Method*, 1637.
240. Reason already persuades me that I ought no less carefully to withhold my assent from matters which are not entirely certain and indubitable than from those which appear to me manifestly to be false, if I am able to find in each one some reason to doubt. RENE DESCARTES (1596-1650), *Meditations on First Philosophy*, 1641.

241. If you would be a real seeker after truth, it is necessary that at least once in your life you doubt, as far as possible, all things. RENE DESCARTES (1596-1650), *Principles of Philosophy*, 1644.
242. [Conflict is] the gadfly of thought. It stirs us to observation and memory. It instigates to invention. It shocks us out of sheep-like passivity, and sets us at noting and contriving, reflection and ingenuity. JOHN DEWEY (1859-1952), *Human Nature and Conduct*, 1922.
243. A moral principle ... is not a command to act or forbear acting in a given way; it is a tool for analyzing a specific situation, the right or wrong being determined by the situation in its entirety, not by the rule as such. JOHN DEWEY (1859-1952).
244. The natural tendency of man is not to press home a doubt, but to cut inquiry as short as possible. The practical man's impatience with theory has become a proverb; it expresses just the feeling that, since the thinking process is of use only in substituting certainty for doubt, any apparent prolongation of it is useless speculation, wasting time and diverting the mind from important issues. JOHN DEWEY (1859-1952), *Essays in Experimental Logic*, 1916.
245. The routine of custom tends to deaden even scientific inquiry; it stands in the way of discovery and of the active scientific worker. For discovery and inquiry are synonymous as an occupation. Science is a pursuit, not a coming into possession of the immutable; new theories as points of view are more prized than discoveries that quantitatively increase the store on hand. JOHN DEWEY (1859-1952), *Reconstruction in Philosophy*.
246. To be genuinely thankful, we must be willing to sustain and protract that state of doubt which is the stimulus to thorough inquiry, so as not to accept an idea or make a positive assertion of belief, until justifying reasons have been found. JOHN DEWEY (1859-1952), *How We Think*, 1910.
247. Every great advance in science has issues from a new audacity of imagination. JOHN DEWEY (1859-1952), *The Quest for Certainty*, 1929.
248. Reality is that which, when you stop believing in it, doesn't go away. PHILIP K. DICK (1928-1982), *I Hope I Shall Arrive Soon*, 1986.
249. We have three principal means: observation of nature, reflection, and experiment. Observation gathers the facts, reflection combines them, experiment verifies the result of the combination. DENIS DIDEROT (1713-1784), *On The Interpretation of Nature*, 1753.
250. What has not been examined impartially has not been well examined. Skepticism is therefore the first step toward truth. DENIS DIDEROT (1713-1784), *Pensees Philosophiques*, 1746.
251. Some people have an unconquerable love of riddles. They have the chance of listening to plain sense, or to such wisdom as explains life; but no, they must go and work their brains over a riddle, just because they do not understand what it means. ISAK DINESEN (1885-1962), *Seven Gothic Tales*, 1934.
252. Man has such a predilection for systems and abstract deductions that he is ready to distort truth intentionally, he is ready to deny the evidence of his senses only to justify his logic. FYODOR DOSTOEVSKY (1821-1881), *Notes From The Underground*, 1864.
253. There is no subject so old that something new cannot be said about it. FYODOR DOSTOEVSKY (1821-1881), *A Diary of a Writer*, 1876.
254. Sherlock Holmes: The temptation to form premature theories upon insufficient data as the bane of our profession. SIR ARTHUR CONAN DOYLE (1859-1930), *The Valley of Fear*, 1914.



255. It is a capital mistake to theorize before one has data. Insensibly, one begins to twist facts to suit theories instead of theories to suit facts. SIR ARTHUR CONAN DOYLE (1859-1930), *The Adventures Of Sherlock Holmes*, 1891.
256. It is of the highest importance in the art of detection to be able to recognize out of a number of facts which are incidental and which are vital... I would call your attention to the curious incident of the dog in the nighttime. The dog did nothing in the nighttime. That was the curious incident. SIR ARTHUR CONAN DOYLE (1859-1930), *Memoirs of Sherlock Holmes*, 1894.
257. Lunatics are sincere. People who believe the earth is flat are sincere. They can't all be right. Better make certain that you've got something to be sincere about and with. TOM DRIBERT (1905-1976), 1937.
258. There's no such thing as knowledge management; there are only knowledgeable people. Information only becomes knowledge in the hands of someone who knows what to do with it. PETER DRUCKER, in *Industry Week*, 24 January 2000.
259. It is characteristic of science, in its quest for objectivity, to exclude and avoid ethical considerations. MAX DUBLIN, *Futurehype: The Tyranny of Prophecy*, 1989.
260. It is always questionable to subordinate present realities to theories about the future because such theories can never properly be tested by facts. But when, as is often the case with prediction, the theories turn out to be projects for self-promotion, or the promotion of an elite or interest group, we have a recipe for the ineffectiveness at best, disaster at worst. MAX DUBLIN, *Futurehype: The Tyranny of Prophecy*, 1989.
261. Religion is the science of former times, dried out and turned to dogma; it is only the husk of an outdated scientific explanation. ROGER MARTIN DUGARD (1881-1958), *Jean Barois*, 1949.
262. When there is "risk," we do not know exactly what will happen, but we do know all of the possible outcomes, as well as the likelihood that any particular outcome will occur. ... "Uncertainty" refers to a situation in which we don't know all possible outcomes and/or we don't know the probability of every possible outcome. .... Uncertainty is risk minus information. LLOYD J. DUMAS, *Lethal Arrogance: Human Fallibility and Dangerous Technologies*, 1999.
263. Does history support a belief in God? If by God we mean not the creative vitality of nature but a supreme being intelligent and benevolent, the answer must be a reluctant negative. Like other departments of biology, history remains at bottom a natural selection of the fittest individuals and groups in a struggle where goodness receives no favors, misfortunes abound, and the final test is the ability to survive...[T]he total evidence suggests either a blind or an impartial fatality... WILL DURANT (1885-1981) and ARIEL DURANT (1898-1981), *The Lessons of History*, 1968.
264. History is so indifferently rich that a case for almost any conclusion from it can be made by a selection of instances. Choosing evidence with a brighter bias, we might evolve some more comforting reflection. WILL DURANT (1885-1981) and ARIEL DURANT (1898-1981), *The Lessons of History*, 1968.
265. How many a debate would have been deflated into a paragraph if the disputants had dared to define their terms! This is the alpha and omega of logic, the heart and soul of it, that every important term in serious discourse shall be subject to the strictest scrutiny and definition. WILL DURANT (1885-1981), *The Story of Philosophy*.

266. Religions are born and may die, but superstition is immortal. Only the fortunate can take life without mythology. WILL DURANT (1885-1981) and ARIEL DURANT (1898-1981), *The Age of Reason Begins*, 1961.
267. Our principle objective is to extend scientific rationalism to human behavior. It can be shown that behavior of the past, when analyzed, can be reduced to relationships of cause and effect. These relationships can then be transformed, by an equally logical operation, into rules of action for the future. EMILE DURKHEIM (1857-1917), *The Rules of Sociological Method*, 1938.



268. They shield themselves from facts, I suppose, by a biased selection of books and newspapers to read. Many violent conflicts of opinion come down to a difference in reading matter. MAX EASTMAN (1883-1969), *Reflections On The Failure Of Socialism*, 1962.
269. [The] factual aspect of a proposition refers to a part of reality, hence it can be tested by reference to the facts. In this way we can check its truth. The moral aspect of a proposition, however, expresses only the emotional response of an individual to a state of real or presumed facts... DAVID EASTON, *The Political System*, 1953.
270. We used to think that if we knew one, we knew two, because one and one are two. We are finding that we must learn a great deal more about “and.” SIR ARTHUR STANLEY EDDINGTON (1882-1944).
271. The great end of education is to discipline rather than furnish the mind; to train it in the use of its own powers, rather than fill it with the accumulations of others. TRYON EDWARDS.
272. He that never changes his opinions, never corrects his mistakes, will never be wiser on the morrow than he is today. TRYON EDWARDS.
273. Ethical axioms are found and tested not very differently from the axioms of science. Truth is what stands the test of experience. ALBERT EINSTEIN (1879-1955), *Out of my Later Years*, 1950.
274. The idea of a Being who interferes with the sequence of events in the world is absolutely impossible. ALBERT EINSTEIN (1879-1955), in *Has Science Discovered God?* (E. H. Cotton), 1931.
275. The mere formulation of a problem is far more essential than its solution, which may be merely a matter of mathematical or experimental skills. To raise new questions, new possibilities, to regard old problems from a new angle requires creative imagination and marks real advances in science. ALBERT EINSTEIN (1879-1955), in *The Evolution of Physics* (Albert Einstein & L. Infeld), 1938.
276. The attempt to combine wisdom and power has only rarely been successfully, and then only for a short while. ALBERT EINSTEIN (1879-1955).
277. We must remember that we do not observe nature as it actually exists, but nature exposed to our methods of perception (ways of seeing). The theories determine what we can or cannot believe. ALBERT EINSTEIN (1879-1955), *The Meaning of Relativity*.
278. A common fallacy: to imagine a measure will be easy because we have private motives for desiring it. GEORGE ELIOT (1819-1880), *Silas Marner*, 1861.

279. Where is the wisdom we have lost in knowledge? Where is the knowledge we have lost in information? T. S. ELIOT (1888-1965), *The Rock*.
280. Your dunce who can't do his sums always has a taste for the infinite. GEORGE ELIOT (1819-1880), *Felix Holt, The Radical*, 1860.
281. Critical thinkers distinguish between fact and opinion; ask questions, make detailed observations, uncover assumptions and define their terms; and make assertions based on sound logic and solid evidence. D. ELLIS, *Becoming A Master Student*, 1997.
282. [W]e can distinguish between rational motivations, which are orientated toward the future, and those that carry the past with them. A rational actor is one who is willing to let bygones be bygones. He does not, for instance, seek revenge unless the reputation of being someone who gets even is likely to be useful to him in the future. Those who are unable to shed the past may be subject to the cognitive mechanism often called "the sunk-cost" fallacy. JON ELSTER, *Political Psychology*, 1993.
283. Events are not the product of simple causes but of complex situations in which a variety of people and circumstances participate, but this does not mean they are produced by factors. A word to be forgotten. G. R. ELTON (1921-1994), *The Practice of History*, 1967.
284. There are some people who, intellectually at least, never seem to rise above or go beyond the mere naming of things, which for them constitutes knowledge, even truth. WILLARD EMBLER, in *The Use and Misuse of Language* (S. I. HAYAKAWA), 1962.
285. Truth is the name we give to the highest and deepest insights, the fruit of long experience, to those ideas and phenomena which have stood the test of our straining at them, which we have judged most likely to endure, which are universally human, and about which disagreement is only inconsequential quibbling. WILLARD EMBLER, in *The Use and Misuse of Language* (S. I. HAYAKAWA), 1962.
286. If a man fasten his attention on a single aspect of truth and apply himself to that alone for a long time, the truth becomes distorted and not itself but falsehood. RALPH WALDO EMERSON (1803-1882), *Essays: First Series*, 1841.
287. No facts are to me sacred; none are profane; I simply experiment, an endless seeker with no Past at my back. RALPH WALDO EMERSON (1803-1882), *Essays*, 1841.
288. Nothing astonishes men so much as common sense and plain dealing. RALPH WALDO EMERSON (1809-1882), *Art*, 1841.
289. There is less intention in history than we ascribe to it. We impute far-sighted plans to Caesar and Napoleon; but the best of their power was in nature, not in them. RALPH WALDO EMERSON (1803-1882), *Spiritual Laws*.
290. Who shall forbid a wise skepticism, seeing that there is no practical question on which anything more than an approximate solution can be had? RALPH WALDO EMERSON (1803-1882), *Representative Men*, 1850.
291. Argument by analogy [is] an argument by the consideration of similar cases. The trouble is that they may be taken to be more similar than they really are... Analogies can never be validly used to establish conclusions although they may sometimes point to them. E. M. EMMET, *Handbook of Logic*, 1967.
292. Skepticism is an ability to place in opposition, in any manner whatever, appearances and judgments, and thus – because of the equality of force in the objects and arguments opposed – to come first all to

- a suspension of judgment and then to mental tranquility. SEXTUS EMPIRICUS, *Outline of Pyrrhonism*, 180 AD.
293. Arguments are sound not because of who proposes them but by virtue of their internal merit. If the premises of an argument prove its conclusion, they do so no matter who happens to formulate the argument. S. MORRIS ENGLE, *With Good Reason: An Introduction to Informal Fallacies*, 1982.
294. The *fallacy of irrelevant thesis* ... is an argument in which an attempt is made to prove a conclusion that is not the one at issue. This fallacy goes by a variety of names: *irrelevant conclusion, ignoring the issue, befogging the issue, diversion, and red herring*. [It] derives its persuasive power from the fact that it often does prove a conclusion or thesis (thought not the one at issue). S. MORRIS ENGLE, *With Good Reason: An Introduction to Informal Fallacies*, 1982.
295. The *fallacy of sweeping generalization* is committed when a general rule is applied to a specific case to which the rule is not applicable because of special features of that case. ... The point to remember is that a generalization is designed to apply only to individual cases which properly fall under it. It is not designed to apply to all individual cases. S. MORRIS ENGLE, *With Good Reason: An Introduction to Informal Fallacies*, 1982.
296. Among the characteristics of language that contribute to its power as an instrument of communication is its *representational* quality, its use of words to stand for something beyond themselves. In order to appreciate this quality of language, we need to examine *signs* and *symbols*... S. MORRIS ENGLE, *With Good Reason: An Introduction to Formal Fallacies*, 1982.
297. Men are disturbed not by events which happen, but by the opinion they have of these events. EPICTETUS (ca 55-135 A.D.), *Enchiridion*.
298. The beginning of philosophy is the recognition of the conflict between opinions....Here is the beginning of philosophy: a recognition of the conflicts between men, a search for their cause, a condemnation of mere opinion...and the discovery of a standard of judgment. EPICTETUS (55-135 A.D.), *Discourses*, ca 100 A.D.
299. Authority sometimes proceeds from reason, but reason never from authority. For all authority that is not approved by true reason seems weak. But true reason, since it rests on its own strength, needs no reinforcement by any authority. JOHANNES SCOTUS ERIGENA (1266-1308), *De divisione naturae*, 1861.
300. [Factuality is that] universe of facts, data, and techniques that can be verified with the observational methods and the work techniques of the time. ERIK ERIKSON, *Dimensions of a New Identity*, 1974.
301. When men can freely communicate their thoughts and their sufferings, real or imagined, their passions spend themselves in air, like gunpowder scattered upon the surface -- but pent up by terrors, they work unseen, burst forth in a moment, and destroy everything in their course. Let reason be opposed to reason, and argument to argument, and every good government will be safe. THOMAS ERSKINE (1750-1823), *Lord Chancellor of England*.
302. Theory found useful in one context will sooner or later fertilize investigations in other contexts. A theory's viability is best judged by its range of interdisciplinary applicability. If it contributes to the explanation of behavior in many different settings, political as well as non-political, the knowledge gained will be the more significant. H. EULAU, *The Behavioral Persuasion in Politics*, 1963.
303. Millions long for immortality who do not know what to do with themselves on a rainy Sunday afternoon. SUSAN ERTZ, in *The Pan Dictionary of Religious Quotations* (M. Pepper, ed), 1991.

304. Man's most valuable trait is a judicious sense of what not to believe. EURIPIDES (480--405 B.C.), *Helen*, 412 B.C.
305. The wisest men follow their own direction and listen to no prophet guiding them. None but the fools believe in oracles, forsaking their own judgment. Those who know, know that such men can only come to grief. EURIPIDES (480-405 B.C.), *Iphigenia in Tauris*.
306. The civilized man has a moral obligation to be skeptical, to demand the credentials of all statements that claim to be facts. BERGAN EVANS (1904-1978), *The Natural History of Nonsense*, 1946.



307. Even though you can reason back with certainty from an effect to a necessary cause, *you cannot turn the process around*. That is, the presence or occurrence of the necessary cause is *not* always enough to predict the effect. JEANNE FAHNESTOCK & MARIE SECOR, *A Rhetoric of Argument*, 1990.
308. The fallacy of division lies in assuming that what holds true for all members of a class taken together is necessarily true for each alone. W. WARD FEARNESIDE and WILLIAM B. HOLTHER, *Fallacy: The Counterfeit of Argument*, 1959.
309. There are...terms, however, the use of which usually implies the existence of entities in the situation unverifiable in principle. The usual occasion of the use of such terms as "destiny" and "fate" provides no clue for reduction and strongly suggests hypostatization of entities. Such use is commonly called Word Magic. W. WARD FEARNESIDE and WILLIAM B. HOLTHER, *Fallacy: The Counterfeit of Argument*, 1959.
310. Wherever morality is based on theology, wherever right is made dependent on divine authority, the most immoral, unjust, infamous things can be justified and established. LUDWIG FEUERBACH (1805-1872), *The Essence of Christianity*.
311. In its efforts to learn as much as possible about nature, modern physics has found that certain things can never be "known" with certainty. Much of our knowledge must always remain uncertain. The most we can know is in terms of probabilities. RICHARD P. FEYNMAN (1918-1988), *The Feynman Lectures on Physics*, 1963.
312. Reality must take precedence over public relations, for nature cannot be fooled. RICHARD P. FEYNMAN (1918-1988).
313. Liberalism's doctrinal degeneration has been closely related to the problem of discriminating between fact and value propositions that have been so central to this century's intellectual life. G. LOWELL FIELD and JOHN HIGHLY, *Elitism*, 1980.
314. It has been said that there are two ways of manifesting an intellectual subservience to another mind: slavish imitation and obsessive refutation. Both of these forms of servility are regrettably common in historical scholarship. DAVID HACKETT FISCHER, *Historian's Fallacies: Toward a Logic of Historical Thought*, 1970.
315. The reductive fallacy reduces complexity to simplicity, or diversity to uniformity, in causal explanations. DAVID HACKETT FISCHER, *Historian's Fallacies: Toward a Logic of Historical Thought*, 1970.

316. Many bad ideas have had a long life because of a good (effective) analogy. If analogy is used to persuade without proof, or to indoctrinate without understanding, or to settle an empirical question without empirical evidence, then it is misused. DAVID HACKETT FISCHER, *Historian's Fallacies: Toward a Logic of Historical Thought*, 1970.
317. If the argument is a single chain, and one link fails, then the chain itself fails with it. But most historians' arguments are not single chains. They are rather like a kind of chain mail, which can fail in some part and still retain its shape and function. DAVID HACKETT FISCHER, *Historian's Fallacies: Toward a Logic of Historical Thought*, 1970.
318. We need tough-minded thinkers, gadflies, doubters. Doubt is an angel, not a devil; it assumes an order of truth. Only through the agony of doubt can we have the courage to be. MARSHALL W. FISHWICK, *Saturday Review*, 21 December 1963.
319. The test of a first-rate intelligence is the ability to hold two opposing ideas in mind at the same time and still retain the ability to function. F. SCOTT FITZGERALD (1896-1940).
320. Stupidity consists in wanting to reach conclusions. We are a thread, and we want to know the whole cloth. GUSTAV FLAUBERT (1821-1880), *Letters*, 1950.
321. The really interesting concepts in this world have the nasty habit of avoiding our most determined attempts to pin them down, to make them say something definite and make them stick to it. Their meanings perversely remain multiple, ambiguous, imprecise, and above all unstable and open. J. H. FLAVELL, *Cognitive Development*, 1977.
322. And when the hunt for errors has subsided and a theory gets established and accepted – do scientists think they've got hold of a new truth? No. To them, all scientific findings are only tentative truths, "good until further notice," to be immediately discarded when someone comes along with another theory that explains a few more facts. RUDOLF FLESCH, *The Art of Clear Thinking*, 1951.
323. [Science] isn't a search for truth but a search for error. The scientist lives in a world where truth is unattainable, but where it's always possible to find errors in the long-settled or the obvious. RUDOLF FLESCH, *The Art of Clear Thinking*, 1951.
324. It is time at least to suggest a wider connection between rationality in general and personal integrity. ... To the extent that I make claims to knowledge without ensuring that I am indeed in a position to know, I must prejudice my claims both to sincerity and ingenuousness. ANTHONY FLEW, *Thinking About Thinking*, 1975.
325. In a good argument, a person states a conclusion clearly and then, with equal clarity, gives reasons for this conclusion. The arguments of everyday life often fall short of this standard. Usually, unclear language is a sign of unclear thought. There are times, however, when people are unintentionally unclear – their goal is to confuse others. This is called *obfuscation*. ROBERT FOGELIN & WALTER SINNOT-ARMSTRONG, *Understanding Arguments: An Introduction to Informal Logic*, 1991.
326. Everyone believes very easily whatever he fears or desires. JEAN de LA FONTAINE (1621-1695), *The Wolf and the Fox*, 1671.
327. Faith, to my mind, is a stiffening process, a sort of mental starch, which ought to be applied as sparingly as possible. E. M. FORSTER (1899-1970), *Two Cheers For Democracy*, 1951.
328. For my part, I have no excessive confidence in reason. I know how weak and tottering it is. But I remember Diderot's clever apologue: "I have," he said, "only a small flickering light to guide me in the

darkness of a thick forest. Up comes a theologian and blows it out.” Let us first of all follow reason, it is the surest guide. ANATOLE FRANCE (1844-1924), “The Credo of a Skeptic,” in *The Opinions of Anatole France*, 1921.

329. An education isn't now much you have committed to memory, even how much you know. It's being able to differentiate between what you do know and what you don't. ANATOLE FRANCE (1844-1924).
330. Skepticism! The word is made synonymous with negation and impotence. Yes, our great skeptics were sometimes the most affirmative, and often the most courageous, of men. They denied only negations. They attacked everything that fetters the mind and the will. ANATOLE FRANCE (1844-1924), *The Opinions of Anatole France*, 1921.
331. I love truth. I believe humanity has need of it. But assuredly humanity has much greater need still of the untruth which flatters it, consoles, gives it infinite hopes. ANATOLE FRANCE (1844-1924), *La Vie en Fleur*, 1922.
332. Doubt is singular, exquisite, philosophic, immoral, transcendent, monstrous, full of malignity, injurious to persons and to property, contrary to the good order of government, and to the prosperity of empires, fatal to humanity, destructive of the gods, held in horror by heaven. ANATOLE FRANCE (1844-1924), *Penguin Island*, 1908.
333. Increasingly constructive doubt is the sign of advancing civilization. JEROME D. FRANK (1889-1957), *Law and the Modern Man*, 1930.
334. The mark of a truly civilized man is confidence in the strength and security derived from the inquiring mind. FELIX FRANKFURTER (1882-1965), U. S. Supreme Court Justice, *Dennis v. United States*, 1950.
335. I would say that reductionism today is a mask for nihilism. VIKTOR FRANKL (1905-1997), *Beyond Reductionism*, 1969.
336. The fatal flaw of magic lies not in its general assumption of a sequence of events determined by law, but in its total misconception of the nature of the particular laws which govern that sequence. SIR JAMES GEORGE FRAZER (1854-1941), *The Golden Bough*, 1922.
337. The inconsistency of acting on two opposite principles...rarely troubles the common man; indeed he is seldom even aware of it. His affair is to act, not to analyze the motives of his action. If mankind had always been logical and wise, history would not be a long chronicle of folly and crime. SIR JAMES GEORGE FRAZER (1854-1941), *The Golden Bough*, 1922.
338. The greatest and noblest pleasure we have in this world is to discover new truths, and the next is to shake off old prejudices. FREDERICK THE GREAT (1712-1786).
339. It cannot be demanded that we should prove everything, because that is impossible; but we can require that all propositions used without proof be expressly declared to be so. GOTTLLOB FREGE (1848-1925).
340. All through childhood a maturation process is at work, in the service of an increasing knowledge and adaptation to reality, aims at perfecting (ego) functions, at rendering them more and more objective and independent of the emotions... ANNA FREUD (1895-1982), “Indications for Child Analysis,” *The Psychoanalytic Study of the Child*, 1945.
341. Analogies decide nothing, that is true, but they can make one feel more at home. SIGMUND FREUD (1856-1939), *New Introductory Lectures on Psychoanalysis*.

342. The voice of the intellect is a soft one, but it does not rest until it has gained a hearing. Finally, after a countless succession of rebuffs, it succeeds. SIGMUND FREUD (1856-1939), *The Future of an Illusion*, 1927.
343. The construction of a hypothesis is a creative act of inspiration, intuition, invention; its essence is the vision of something new in familiar material. MILTON FRIEDMAN, *Essays in Positive Economics*, 1953.
344. Normative theory...relates to the kinds of questions about what man "should" or "ought" to do in order to lead the "good" life. Normative theorists include religious leaders, theologians, certain kinds of philosophers, moralists, and others who attempt to determine the "proper" behavior for man... [With] empirical theory [the] primary focus is on an explanation of how man, in fact, *does* behave rather than how he should or ought to behave. Empirical theorists attempt to determine, with as few unproven assumptions as possible, factors which help to explain man's activities... LEWIS A. FROMAN, JR., *People and Politics*, 1962.
345. I understand by religion any system of thought and action shared by a group which gives the individual a frame of orientation and an object of devotion. ERICH FROMM (1900-1980), *Psychoanalysis and Religion*, 1950.
346. He hath good judgment that relieth not wholly on his own. THOMAS FULLER (1654-1734), *Gnomologia*, 1734.
347. I know of no inquiry which the impulses of man suggests that is forbidden to the resolution of man to pursue. MARGARET FULLER (1810-1850), *Summer on the Lakes*, 1844.



348. Faced with the choice between changing one's mind and proving that there is no need to do so, almost everybody gets busy on the proof. JOHN KENNETH GALBRAITH.
349. When knowledge is the slave of social considerations, it defines a special class; when it serves its own ends only, it no longer does so. There is of course a profound logic in this paradox: genuine knowledge is egalitarian in that it allows no privileged source, testers, messengers of Truth. It tolerates no privileged and circumscribed data. The autonomy of knowledge is a leveler. ERNEST GELLNER (1925-1995), *Plough, Sword and Book*, 1988.
350. In my view, epistemological principles are basically normative or ethical: they are prescriptions for the conduct of cognitive life. ERNEST GELLNER (1925-1995), *Relativism and the Social Sciences*, 1985.
351. The way we reflect on things, act on things, and interact with one another are rooted in our ability to compose images, produce messages and use complex symbol systems. A change in that ability transforms the nature of human affairs. We are in the midst of such a transformation. It stems from the mass production of symbols and messages – a new industrial revolution in the field of culture. GEORGE GERBNER, "Mass Media and Human Communication Theory," *Human Communication Theory: Original Essays*, 1967.
352. Objectivity in political theory comes not from the vain attempt to avoid evaluation and thereby appear impartial...Authentic political theory...eschews both pseudo-objective descriptivism and opinionated ideology. DANTE GERMINO (1935-2002), *The Revival of Political Theory*, 1967.



353. Fascist governments have not found the five-year-old too young to regiment into uniform, to marshal in battalions preparatory to group behavior which will be required in later years. ARNOLD GESELL (1880-1961), *The First Five Years of Life*, 1940.
354. So urgent on the vulgar is the necessity of believing, that the fall of any system of mythology will probably be succeeded by the introduction of some other mode of superstition. EDWARD GIBBON (1737-1794), *Decline and Fall of the Roman Empire*, 1909.
355. The various modes of worship, which prevailed in the Roman world, were all considered by the people as equally true; by the philosopher as equally false; and by the magistrate as equally useful. And thus toleration produced not only mutual indulgence, but even religious concord. EDWARD GIBBON (1737-1794), *Decline and Fall of the Roman Empire*, 1909.
356. The law of probability; so true in general, so fallacious in particular. EDWARD GIBBON (1737-1794), *Decline and Fall of the Roman Empire*, 1909.
357. No progress of humanity is possible unless it shakes off the yoke of authority and tradition. ANDRE GIDE (1869-1951), *Journal*, 17 March 1931.
358. On carelessly made or insufficient observations how many fine theories are built up which do not bear examination. ANDRE GIDE (1809-1951), *Journals*, 5 August 1931.
359. Arguing provides the opportunity to explore and probe the claims and positions offered. In arguing we have a chance to examine exactly what the position rests upon. ... In arguing we need not disagree with a position in order to attack it. We need only want to test or explore it. One major reason for arguing, then, is to learn: to explore, probe, and test in order to examine a belief. MICHAEL A. GILBERT, *How To Win An Argument*, 1979.
360. An argument is creative when there is a willingness to explore a position in order to determine its value. Creativity implies a willingness to alter or reconsider a position if strong arguments are brought against it. An attached argument is just the opposite: there is a strong commitment to the position, there is an emotional or psychological stake in seeing one conclusion triumph. MICHAEL A. GILBERT, *How To Win An Argument*, 1979.
- 361.
362. The tendency to impute order to ambiguous stimuli is simply built into the cognitive machinery we use to apprehend the world. ....The predisposition to detect patterns and make connections is what leads to discovery and advance. The problem, however, is that the tendency is so strong and so automatic that we sometimes detect coherence even when it does not exist. THOMAS GILOVICH, *How We Know What Isn't So*, 1991.
363. Human nature abhors a lack of predictability and the absence of meaning. As a consequence, we tend to "see" order where there is none, and we spot meaningful patterns where only the vagaries of chance are operating. THOMAS GILOVICH, *How We Know What Isn't So*, 1991.
364. The tendency to make judgments by "representativeness"...leads to the belief that causes resemble their effects: Big effects should have big causes, complex effects should have good causes, and so on. THOMAS GILOVICH, *How We Know What Isn't So*, 1991.
365. Men are apt to mistake the strength of their feeling for the strength of their argument. The heated mind resents the chill couch and relentless scrutiny of logic. WILLIAM GLADSTONE (1809-1898).

366. **Fundamental Attribution Error (FAE)**, ... is a fancy way of saying that when it comes to interpreting other people's behavior, human beings invariably make the mistake of overestimating the importance of fundamental character traits and underestimating the importance of the situation and context. MALCOLM GLADWELL, *The Tipping Point: How Little Things Make Big Differences*, 2002.
367. Nominalistic philosophy rejects the belief that general concepts have a reality of their own; instead it considers them merely as names, as convenient categories, more or less arbitrarily established by human minds. Reasoning proceeds from the particular to the general. Any exercise in pure reason establishes merely a hypothesis which must be verified by concrete experience. EDMUND S. GLENN, in *The Use and Misuse of Language*, 1962.
368. Nothing must be sustained, because it is ancient, because we have been accustomed to regard it as sacred, or because it has been unusual to bring its validity into question. WILLIAM GODWIN (1756-1836), *An Inquiry Concerning Political Justice*, 1793.
369. It is much easier to recognize error than to find truths; error is superficial and may be corrected; truth lies hidden in the depths. JOHANN WOLFGANG VON GOETHE (1749-1832).
370. The deepest, the only theme in human history, compared to which all others are of subordinate importance, is the conflict of skepticism with faith. JOHANN WOLFGANG VON GOETHE (1749-1832).
371. Truth is at variance with our nature, but not so error; and for a simple reason. Truth requires us to recognize ourselves as limited; but error flatters us with the belief that in one way or another we are subject to no bounds at all. JOHANN WOLFGANG VON GOETHE (1749-1832), *Maxims and Reflections*, 1826.
372. Hypotheses are the scaffolds which are erected in front of a building and removed when the building is completed. They are indispensable to the worker; but he must not mistake the scaffolding for the building. JOHANN WOLFGANG VON GOETHE (1749-1832), *Maxims and Reflections*, 1893.
373. Let us not dream that reason can ever be popular. Passions, emotions, may be made popular, but reasons remains ever the property of the few. JOHANN WOLFGANG VON GOETHE (1749-1832).
374. The human mind, with arrogance and fragility intermixed, loves to construct grand and overreaching theories. ... But solutions often require the humbler, superficially less noble, and effectively opposite task of making proper divisions into different categories of meaning and causation. STEPHEN JAY GOULD (1941-2002), *Leonardo's Mountain of Clams and the Diet of Worms*, 1998.
375. To "understand" a complex event generally implies we have some notions of its cause or causes... To say that we can identify the cause or causes of an event or complex of events necessarily implies that we can unambiguously identify the event or the complex of events with which we are concerned. To say A invariably precedes B requires that we can invariably identify B. A. JAMES GREGOR, *Interpretations of Fascism*, 1974.
376. However one chooses to construe "understanding" and "explaining," what is involved, minimally and in the first instance, is appropriate definition. A. JAMES GREGOR, *Interpretations of Fascism*, 1974.
377. The word "belief" is a difficult thing for me. I don't believe. I must have a reason for a certain hypothesis. Either I know a thing, and then I know it -- I don't need to believe it. CARL GUSTAV GUNN (1875-1961).



378. The conservative has but little to fear from the man whose reason is the servant of his passions, but let him beware of him in whom reason has become the greatest and most terrible of the passions. J. B. S. HALDANE (1892-1964), *Daedalus, or Science and the Future*, 1923.
379. Sound (good) arguments meet three criteria: The premises are acceptable and consistent, the premises provide support for the conclusion by being relevant to the conclusion and sufficiently strong, and missing components of the argument (e.g., assumptions, counterarguments, qualifiers, premises and rival conclusions) have been considered. DIANE F. HALPERN, *Thought and Knowledge: An Introduction to Critical Thinking*, 1996.
380. People often confuse truth with validity. Validity refers to the form of an argument and is unrelated to content. If a conclusion necessarily follows from the premises, then it is valid. DIANE F. HALPERN, *Thought and Knowledge: An Introduction to Critical Thinking*, 1996.
381. Symbols and things symbolized are independent of each other; nevertheless, we all have a way of feeling as if, and sometimes acting as if, there were necessary connections. S. I. HAYAKAWA (1906-1992), *Language in Thought and Action*, 1949.
382. Reason is just as cunning as she is powerful. Her cunning consists principally in her mediating activity, which, by causing objects to act and re-act on each other in accordance with their own nature, in this way, without any direct interference in the process, carries out reason's intentions. GEORG FRIEDRICH WILHELM HEGEL (1770-1831), *Die Logik*, 1840.
383. We do not want a thing because we reason; we find reasons for a thing because we want it. Mind invents logic for the whims of the will. GEORG FRIEDRICH WILHELM HEGEL (1770-1831), *The Phenomenology of the Spirit*, 1807.
384. An idea is always a generalization, and generalization is a property of thinking. To generalize means to think. GEORG FRIEDRICH WILHELM HEGEL (1770-1831), *The Philosophy of Right*, 1821.
385. There is no way of observing social cause and effect in a pure environment, so a residue of indeterminacy obscures all causal generalizations – not because the causal nexus itself remains uncertain (that is the case, too, with natural events) but because the problem of identifying all the elements to be included in that nexus is inherently indeterminate. ROBERT HEILBRONER (1919-2005), *The Nature and Logic of Capitalism*, 1986.
386. An expert is someone who knows some of the worst mistakes that can be made in his subject, and how to avoid them. WERNER HEISENBERG (1901-1976), *Physics and Philosophy*, 1958.
387. Science does not simply describe and explain nature; it is part of the interplay between nature and ourselves; it describes nature as exposed to our method of questioning. WERNER HEISENBERG (1901-1976), *Physics and Philosophy*, 1958.
388. Every judgment teeters on the brink of error. To claim absolute knowledge is to become monstrous. Knowledge is an unending adventure at the edge of uncertainty. FRANK HERBERT (1920-1986), *Dune*, 1965.
389. Fear of things invisible, is the natural seed of that which every one in himself calleth religion. THOMAS HOBBS (1588-1679), *Leviathan*, 1651.

390. Science is the knowledge of Consequences, and dependence of one fact upon another. THOMAS HOBBS (1588-1679), *Leviathan*, 1651.
391. The opposite of the religious fanatic is not the fanatical atheist but the gentle cynic who cares not whether there is a God or not. ERIC HOFFER (1902-1983), *The True Believer*, 1951.
392. The beginning of thought is in disagreement – not only with others but also with ourselves. ERIC HOFFER (1902-1983), *The Passionate State of Mind*, 1955.
393. All religions are ancient monuments to superstition, ignorance, ferocity; and modern religions are only ancient follies rejuvenated. BARON d'HOLBACH (1723-1789), *Good Sense*, 1772.
394. Theology is but the ignorance of natural causes reduced to a system. BARON d'HOLBACH (1723-1789), *Good Sense*, 1772.
395. To prevent inquiry is among the worst of evils. THOMAS HOLCROFT (1745-1816), *The Adventures of Hugh Trevor*, 1794.
396. The universe is not hostile, nor yet is it friendly. It is simply indifferent. JOHN HAYNES HOLMES (1879-1964), *A Sensible Man's View of Religion*, 1932.
397. To have doubted one's own first principles, is the mark of a civilized man. OLIVER WENDELL HOLMES, JR. (1841-1935), U. S. Supreme Court Justice.
398. General propositions do not decide concrete cases. OLIVER WENDELL HOLMES, JR. (1841-1935), U. S. Supreme Court Justice, *Lochner v. New York*, 1905.
399. Great cases like hard cases make bad law. For great cases are called great, not because of their real importance in shaping the law of the future, but because of some accident of immediate overwhelming interest which appeals to the feelings and distorts the judgment. OLIVER WENDELL HOLMES (1841-1935), U. S. Supreme Court, *Northern Securities Com. v. United States*, 1904.
400. As a set of cognitive beliefs, religion is a speculative hypothesis of an extremely low order of probability. SIDNEY HOOK (1902-1989), *The Partisan Review*, March 1950.
401. In the educational system of a democracy, the authority of method must ultimately replace the authority of persons and institutions in the determination of truth. SIDNEY HOOK (1902-1989), *Education for Modern Man*, 1946.
402. Wisdom consists not so much in knowing what to do in the ultimate as in knowing what to do next. HERBERT CLARK HOOVER (1874-1964), U. S. President, *Reader's Digest*, July 1958.
403. The scientific approach has many competitors in the search for understanding. For many people throughout history, the competitors have prevailed. Analysis of reality has usually been much less popular than myths, superstitions and hunches, which have the reassuring feel of certainty before they event they try to predict or control, though seldom afterwards. KENNETH R. HOOVER, *The Elements of Social Scientific Thinking*, 1992.
404. Scientific inquiry began as a revolt against dogma established and controlled by dominant political and religious institutions. ... The control of information is one of the fundamentals of political power. Scientists who insist on open and accountable procedures of information gathering and conclusion

formation chip away at the power of those who would foreclose inquiry in favor of pet theories and self-serving doctrines. KENNETH R. HOOVER, *The Elements of Social Scientific Thinking*, 1992.

405. A theory is no more like a fact than a photograph is like a person. EDGAR WATSON HOWE (1853-1937).
406. Religion is but a desperate attempt to find an escape from the truly dreadful situation in which we find ourselves. Here we are in this wholly fantastic universe with scarcely a clue as to whether our existence has any real significance. No wonder then that many people feel the need for some belief that gives them a sense of security, and no wonder that they become very angry with people like me who say that this is illusory. FRED HOYLE (1915-2002), *The Nature of the Universe*, 1950.
407. Man will always love and be in need of love. Man will always aspire to heights which he cannot reach; Man will always be fallible; Man will always die and be in distress; and man will always have a seemingly ever-expanding universe before him even if he conquered all earth. As long as man is subject to these and other circumstances, religion will have a place in human culture. F. L. K. HSU, *Religion, Science and Human Crisis*, 1952.
408. Life is a paradox. Every truth has its counterpart which contradicts it; and every philosopher supplies the logic for his own undoing. ELBERT HUBBARD (1856-1915), *The Notebook*, 1927.
409. Metaphysics is an attempt to define a thing and by doing so escape the bother of understanding. ELBERT HUBBARD (1856-1915), *The Roycroft Dictionary and Book of Epigrams*, 1923.
410. Theology is an attempt to explain a subject by men who do not understand it. The intent is not to tell the truth but to satisfy the questioner. ELBERT HUBBARD (1856-1915), *The Philistine*.
411. There is every reason to believe that the relative backwardness of the behavioral sciences is due not so much to their inherent complexity as to the difficulty of maintaining a consistent and vigorous objectivism. CLARK L. HULL, *Principles of Behavior*, 1943.
412. I am uneasy to think I approve of one object, and disapprove of another; call one thing beautiful, and another deformed; decide concerning truth an falsehood, reason and folly, without knowing upon what principles I proceed. DAVID HUME (1711-1777), *A Treatise On Human Nature*, 1888.
413. If we be, therefore, engaged by arguments to put trust in past experience, and to make it the standard of our future judgment, these arguments must be probable only. DAVID HUME (1711-1777).
414. There is a Set of Men sprung up amongst us, who endeavor to distinguish themselves by ridiculing every Thing, that has hitherto appeared sacred and venerable in the eyes of Mankind. Reason, Sobriety, Honor, Friendship, Marriage, are the perpetual Subjects of their insipid Raillery. Were the Schemes of these Anti-reformers to take Place, all the Bonds of Society must be broken. DAVID HUME (1711-1777), *Of Moral Prejudices*.
415. Almost every one has a predominant inclination, to which his other desires and affections submit, and which governs him, though, perhaps with some intervals, through the whole course of his life. It is difficult for him to apprehend that any thing, which appears totally different to him, can ever give enjoyment to any person, or can possess charms, which altogether escape his observation. His own pursuits are always, in his account, the most engaging. The objects of his passion, the most valuable. DAVID HUME (1711-1777), *The Skeptic*, 1742.
416. Analogy is always of doubtful value in argument, but false analogies are worth even less. ... Whenever you find an analogy used as propaganda, be sure that the two cases cited are really parallel; then see

what other proof is offered. Analogy alone is a slender reed for any cause to depend on. WILLIAM HUMMEL & KEITH HUNTRESS, *The Analysis of Propaganda*, 1949.

417. The believer is happy; the doubter is wise. HUNGARIAN PROVERB.
418. When people think seriously, they think abstractly; they conjure up simplified pictures of reality called concepts, theories, models, paradigms. Without such intellection constructs, there is William James said, only 'a bloomin' buzzin' confusion. SAMUEL HUNTINGTON, *Foreign Affairs*, 1993.
419. It is not so important to be serious as it is to be serious about the important things. The monkey wears an expression of seriousness which would do credit to any college student, but the monkey is serious because he itches. ROBERT M. HUTCHINS (1899-1977).
420. My idea of education is to unsettle the minds of the young and inflame their intellects. ROBERT M. HUTCHINS (1899-1977).
421. You never see animals going through the absurd and often horrible fooleries of magic and religion... Only man behaves with such gratuitous folly. ALDOUS HUXLEY (1894-1963).
422. In high tragedy as in low journalism there is no room for the dispassionate observations, the marshaled data and logical thinking of science. ALDOUS HUXLEY (1894-1963), *Literature and Science*.
423. Every great advance in natural knowledge has involved the absolute rejection of authority. THOMAS HENRY HUXLEY (1825-1895), *Lay Sermons*, 1870.
424. Irrationally held truths may be more harmful than reasoned errors. THOMAS HENRY HUXLEY (1825-1895), *Science and Culture*.
425. Science is simply common sense at its best -- that is, rigidly accurate in observation and merciless to fallacy in logic.... It is wrong for a man to say that he is certain of the objective proof of any proposition unless he can produce evidence which logically justifies that certainty. THOMAS HENRY HUXLEY (1825-1895), *Essays Upon Controversial Questions*, 1889.
426. The deepest sin against the human mind is to believe things without evidence. THOMAS HENRY HUXLEY (1825-1895).
427. No mistake is so commonly made by clever people as that of assuming a cause to be bad because the arguments of its supporters are, to a great extent, nonsensical. THOMAS HENRY HUXLEY (1825-1895), *Science and Education – Essays*, 1897.
428. 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 HENRY HUXLEY (1825-1895), "Letter to Charles Kingsley", 23 September 1860, *Life and Letters of Thomas Henry Huxley*, 1900.
429. My business is to teach my aspirations to conform themselves to fact, not to try and make facts harmonize with my aspirations. THOMAS HENRY HUXLEY (1825-1895), "Letter to Charles Kingsley", 23 September 1860, *Life and Letters of Thomas Henry Huxley*, 1900.
430. The great tragedy of science -- the slaying of a beautiful hypothesis by an ugly fact. THOMAS HENRY HUXLEY (1825-1895), *Biogenesis and Abiogenesis*, 1870.

431. The improver of knowledge absolutely refuses to acknowledge authority, as such. For him, skepticism is the highest of duties, blind faith the one unpardonable sin. THOMAS HENRY HUXLEY (1825-1895), *On The Advisableness of Improving Natural Knowledge*, 1866.
432. What are the moral convictions most fondly held by barbarous and semi-barbarous people? They are the convictions that authority is the soundest basis of belief; that merit attaches to readiness to believe; that the doubting disposition is a bad one, and skepticism is a sin. THOMAS HENRY HUXLEY (1825-1895), *On The Advisability of Improving Natural Knowledge*, 1866.
433. We have to bring our knowledge and expectations to bear in order to comprehend anything in our world. In most ordinary situations this use of context and memory enables us to correctly interpret statements and supply the necessary inferences to do this. But this powerful mechanism can go astray in situations where there is no actual message being conveyed. Instead of picking up random noise we still manage to find meaning in the situation. RAY HYMAN, "Cold Reading: How To Convince Strangers That You Know All About Them," in *Paranormal Borderlands of Science* (Kendrick Frazier), 1981.



434. Doubt is the beginning, not the end, of wisdom. GEORGE ILES (1852-1942), *Jottings*.
435. To become a popular religion, it is only necessary for a superstition to enslave a philosophy. DEAN WILLIAM INGE (1860-1954), *Outspoken Essays*.
436. In nature there are neither rewards nor punishments -- there are consequences. ROBERT G. INGERSOLL (1833-1899), *Some Reasons Why*, 1881.
437. It has always seemed absurd to suppose that a God would choose for his companions, during all eternity, the dear souls whose highest and only ambition is to obey. ROBERT G. INGERSOLL (1833-1899), *Individuality*, 1873.
438. Logic is not satisfied with assertion. It cares nothing for the opinions of the great -- nothing for the prejudices of the many, and least of all for the superstitions of the dead. ROBERT G. INGERSOLL (1833-1899), *Prose-Poems and Selections*, 1884.
439. Reason is the lamp of the mind -- the only torch of progress; and instead of blowing that out and depending on darkness and dogma, it is far better to increase that sacred light. ROBERT G. INGERSOLL (1833-1899), *Creed*, 1933.
440. Nature, as far as we can discern, without passion and without intention, forms, transforms, and retransforms forever. She neither weeps nor rejoices. She produces man without purpose, and obliterates him without anger. ROBERT G. INGERSOLL (1833-1899), *The Gods*, 1872.
441. Mental slavery is mental death, and every man who has given up his intellectual freedom is the living coffin of his dead soul. ROBERT G. INGERSOLL (1833-1899).
442. Too much doubt is better than too much credulity. ROBERT G. INGERSOLL (1833-1899).
443. [R]ather than undertaking exhaustive analysis, people ordinarily prefer heuristics -- intuitive shortcuts and simple rules of thumb. One such heuristic is reliance upon information that is most accessible. SHANTO IYENGAR & DONALD R. KINDER, *News That Matters*, 1987.



444. Myths and science fulfill a similar function: they both provide human beings with a representation of the world and of the forces that are supposed to govern it. The both fix the limits of what is considered as possible. FRANCOIS JACOB, *The Possible and the Actual*, 1982.
445. Irrationalism, since it is not bound by any rules or consistency, may be combined with any kind of belief, including a belief in the brotherhood of man; but the irrational belief that emotions and passions rather than reason are the mainspring of human action tend to lead to an appeal of violence and brute force as the ultimate arbiter in any dispute. ROGER JAMES, *Return To Reason*, 1980.
446. Faith means belief in something concerning which doubt is still theoretically possible. WILLIAM JAMES (1842-1910), *Princeton Review*, July 1882.
447. Religion is a monumental chapter in the history of human egoism. WILLIAM JAMES (1842-1910), *Varieties of Religious Experience*, 1902.
448. It is perhaps not surprising that men come to regard the happiness which a religious belief affords as a proof of its truth. If a creed makes a man feel happy, he almost inevitably adopts it. Such a belief ought to be true; therefore it is true. WILLIAM JAMES (1842-1910), *The Varieties of Religious Experience*, 1902.
449. No one has insight into all the ideals. No one should presume to judge them offhand. The pretension to dogmatize about them in each other is the root of most human injustices and cruelties, and the trait in human character most likely to make the angels weep. WILLIAM JAMES (1842-1910), *Pragmatism*, 1907.
450. We never fully grasp the import of any true statement until we have a clear notion of what the opposite true statement would be. WILLIAM JAMES (1842-1910), *Pragmatism*, 1907.
451. The art of being wise is the art of knowing what to overlook. WILLIAM JAMES (1842-1910), *Principles of Psychology*, 1890.
452. Man is fed with fables through life, and leaves it in the belief he knows something of what has been passing, when in truth he knows nothing but what has passed under his own eye. THOMAS JEFFERSON (1743-1826), U. S. President, *Letter to Thomas Cooper*, 1823.
453. As new discoveries are made, new truths disclosed, and manners and opinions change with the change of circumstances, institutions must advance also, and keep pace with the times. THOMAS JEFFERSON (1743-1826), U. S. President, *Letter to S. Kerchival*.
454. Nothing is so firmly believed as that which is least known. FRANCIS JEFFREY (1773-1850).
455. The tendency is for us to remember only those facts or instances which bear out a belief we already possess; we shrink from the special effort required to take account of negative evidence. R. W. JEPSON, *Clear Thinking*, 1936.
456. Just like the drunk who looked for his keys not where he dropped them, but under the lamppost where the light was better, people often seek inadequate information that is readily available, use misleading measures because they are simple, and employ methods of calculation whose main virtue is ease.



ROBERT JERVIS, "The Drunkard's Search," *Explorations in Political Psychology* (Iyengar & McGuire), 1993.

457. The preference for simple calculations ... is revealed by people's tendency to think in terms of certainties and, when they must employ probabilities, to use round numbers, especially 50 percent. Cognitive resources are conserved by declaring that many alternatives are simply impossible. ROBERT JERVIS, "The Drunkard's Search," *Explorations in Political Psychology* (Iyengar & McGuire), 1993.
458. In matters of philosophy and science authority has ever been the great opponent of truth. A despotic calm is usually the triumph of error. In the republic of the sciences, sedition and even anarchy are beneficial in the long run. W. STANLEY JEVONS (1835-1882), *Theory of Political Economy*, 1871.
459. In deduction we are engaged in developing the consequences of a law. We learn the meaning, content, results or inferences which attach to any given proposition. Induction is the exactly reverse process. Given certain results or consequences, we are required to discover the general law from which they flow. W. STANLEY JEVONS (1835-1882), *Theory of Political Economy*, 1871.
460. The "testing of hypothesis" is frequently merely a euphemism for obtaining plausible numbers to provide ceremonial adequacy for a theory chosen and defended on a priori grounds. HARRY G. JOHNSON (1923-1977), *American Economic Review*, 1971.
461. The study of history is a powerful antidote to contemporary arrogance. It is humbling to discover how many of our glib assumptions, which seem to us novel and plausible, have been tested before, not once but many times and in innumerable guises; and discovered to be, at great human cost, wholly false. PAUL JOHNSON, *The Recovery of Freedom*, 1980.
462. Every good historian, is almost by definition, a revisionist. He looks at the accepted view of a particular historic episode with a very critical eye. PAUL JOHNSON, *Insight*, 5 May 1986.
463. Among the calamities of war may be justly numbered the diminution of the love of truth by the falsehoods which interest dictates and credulity encourages. SAMUEL JOHNSON (1709-1784), *The Idler*, 1758.
464. Curiosity is one of the permanent and certain characteristics of a vigorous intelligence. SAMUEL JOHNSON (1709-1784), *The Rambler*, 1750-52.
465. It is very natural for young men to be vehement, acrimonious and severe. For as they seldom comprehend at once all at the consequences of a position, or perceive the difficulties by which cooler and more experienced reasoners are restrained from confidence, they...are inclined to impute uncertainty and hesitation to want of honesty, rather than of knowledge. SAMUEL JOHNSON (1709-1784), *The Rambler*, 1750-52.
466. Superstition is the only religion of which base souls are capable. JOSEPH JOUBERT (1754-1824), *Pensees*, 1842.
467. The word "belief" is a difficult thing for me. I don't believe. I must have a reason for a certain hypothesis. Either I know a thing, and then I know it -- I don't need to believe it.... Mistakes are, after all, the foundations of truth, and if a man does not know what a thing is, it is at least an increase in knowledge if he knows what it is not. CARL GUSTAVE JUNG (1875-1961).

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468. The right perception of any matter and a misunderstanding of that matter do not wholly exclude each other. FRANZ KAFKA (1883-1924), *The Trial*, 1925.
469. The meaning of all descriptions assumes, implicitly, a contrast. The insight of relativity theory was that one cannot know the velocity of an object unless one selects a frame of reference. JEROME KAGAN, *Three Seductive Ideas*, 1998.
470. The aphorism is a personal observation inflated into a universal truth, a private posing as a general. STEFAN KANFER, *Time magazine*, 11 July 1983.
471. The new treason of the intellectuals is that we have shared and even contributed to the current loss of faith in the power of the human mind to cope with human problems, faith in the worth of reasoned discussion, faith even in the possibility of objective truth. ABRAHAM KAPLAN, "The Travesty of the Philosophers," in *Change in Higher Education*, 1970.
472. Faith means intense, usually confident, belief that is not based on evidence sufficient to command assent from every reasonable person. WALTER KAUFMANN, *Faith of a Heretic*, 1961.
473. The justification of rationality is the justification of the employment of a method. The method is a device for problem-solving and it should be employed because everybody has problems, because it is in everybody's interest to solve his problems, and because rationality is the most promising way of doing so. JOHN KEKES, *A Justification of Rationality*, 1976.
474. The *press conference* is a politician's way of being informative without saying anything. Should he accidentally say something, he has at his side a press officer who immediately explains it away by "clarifying" it. EMERY KELEN, *Platypus at Large*, 1960.
475. To know the history of science is to recognize the mortality of any claim to universal truth. EVELYN FOX KELLER, *Reflections on Gender and Science*, 1993.
476. A theory may be considered a way of binding together a multitude of facts so that one may comprehend them all at once. When the theory enables us to make reasonably precise predictions, one may call it scientific... GEORGE A. KELLY (1905-1967), *The Psychology of Personal Constructs*, 1955.
477. I much prefer the sharpest criticism of a single intelligent man to the thoughtless approval of the masses. JOHANN KEPLER (1571-1630).
478. The ability to perceive many sides of a question is essential to successful argument. Without it, only chance determines whether the line of argument that occurs to one first is the strongest available, or merely a feeble imitation which he would abandon instantly if given a choice. Without it, he is blind to the strengths and weaknesses of his own position as an opponent might see them, and is consequently at a serious disadvantage in anticipating and preparing for the opponent's attacks. HARRY P. KERR, *Opinion and Evidence: Cases for Argument and Discussion*, 1962.
479. Before argument can begin, one must see clearly which points are at issue.... Only when one perceives what must be proved is one in a position to set aside irrelevant evidence and to assess the strengths and weaknesses of that which remains. The ground is then prepared for intelligent, penetrating argument that will illuminate all facets of the question with the most revealing light available. HARRY P. KERR, *Opinion and Evidence: Cases for Argument and Discussion*, 1962.
480. The basic idea [of the Elaboration Likelihood Model] is that the more able and motivated a person is to *elaborate* or think about and flesh out the issue-relevant arguments in a message, the more likely it is

that rational or *central route persuasion* will occur. Central route persuasion occurs through focusing on the strength or logic of arguments. This mindful approach leads to enduring and strongly-held beliefs. CHARLES EMERSON KIMBLE, *Social Psychology: Studying Human Interaction*, 1990.

481. ***Simulation heuristic***: Judgment of the likelihood of an event by using the ease with which one can mentally construct scenarios which would produce the event to make the judgment. CHARLES EMERSON KIMBLE, *Social Psychology: Studying Human Interaction*, 1990.
482. ***Anchoring and adjustment heuristic***. The rule of thumb by which people make judgment which are influenced by their first (anchor) judgment. Bias occurs because people stick close to the anchor. CHARLES EMERSON KIMBLE, *Social Psychology: Studying Human Interaction*, 1990.
483. ***Availability heuristic***. Assessment of the probability that an event occurs by using the ease with which instances of that event can be brought to mind as the basis for judgment. CHARLES EMERSON KIMBLE, *Social Psychology: Studying Human Interaction*, 1990.
484. I have six honest serving men; They taught me all I knew; Their names are *Where* and *What* and *When*; And *How* and *Why* and *Who*. RUDYARD KIPLING (1865-1936).
485. It is typical of a dialectic – an argument or other prolonged give-and-take in which interaction is creative – that neither party knows the outcome; it is a discovery for both. ORRIN E. KLAPP, *Symbolic Leaders: Public Dramas and Public Men*, 1964.
486. The ability to solve any problem, although involving intelligence, is not identical with it. RED KNIGHT, *Intelligence and Intelligence Tests*, 1933.
487. Almost every discussion with myth-addicts, whether public or private, is doomed to failure. The debate is from the beginning removed from the level of objectivity; arguments are not considered on their merit, but by whether they fit the system, and if not, how they can be made to fit. ARTHUR KOESTLER (1904-1983), *The Yogi and the Commissar*, 1945.
488. The inner defenses are unconscious. They consist of a kind of magic aura which the mind builds around cherished belief. Arguments which penetrate into the magic aura are not dealt with rationally but by a specific type of pseudo-reasoning. Absurdities and contradictions are made acceptable by specious rationalizations. ARTHUR KOESTLER (1904-1983), *The Yogi And The Commissar*, 1945.
489. The progress of science is strewn, like an ancient desert trail, with the bleached skeletons of discarded theories which once seemed to possess eternal life. ARTHUR KOESTLER (1904-1983), *Address to the PEN Club*, 1976.
490. Language itself is never completely explicit. Words have suggestive, evocative powers; but at the same time they are merely stepping stones for thought. ARTHUR KOESTLER (1904-1983), *The Act of Creation*, 1964.
491. Language can become a screen which stands between the thinker and reality. This is the reason why true creativity often starts where language ends. ARTHUR KOESTLER (1904-1983), *The Act of Creation*, 1964.
492. There are no impartial facts. Data do not have a logic of their own that results in the same perceptions and cognition for all people. Data are perceived and interpreted in terms of the individual perceiver's own needs, own emotions, own personality, own previously form cognitive patterns. DAVID KRECH & RICHARD S. CRUTCHFIELD, *Theory and Problems of Social Psychology*, 1948.

493. Nominally a great age of scientific inquiry, ours has actually become an age of superstition out the infallibility of science; of almost mystical faith in its non-mystical methods; above all...of external verities; of traffic-cop morality and rabbit-test truth. LOUIS KRONENBERGER (1904-1980), *Company Manners*, 1954.
494. A conclusion must be justified by relevant and sufficient evidence and...one who believes rationally tempers his acceptance of a conclusion in accordance with the kind of evidence offered to support it. ARTHUR N. KRUGER, "The Ethics of Persuasion: A Reexamination," *The Speech Teacher*, November, 1967.
495. Persuasion by ethos or pathos either eliminates, obscures, distorts or actually does violence to reason and hence by its nature is incompatible with the rational ideal. ARTHUR N. KRUGER, "The Ethics of Persuasion: A Reexamination," *The Speech Teacher*, November, 1967.
496. Few people have ever seriously wish to be exclusively rational. The good life which most desire is a life warmed by passions and touched with that ceremonial grace which is impossible without some affectionate loyalty to traditional forms and ceremonies. JOSEPH WOOD KRUTCH (1893-1970), *The Measure of Man*, 1954.
497. To be accepted as a paradigm, a theory must seem better than its competitors, but it need not, and in fact never does, explain all the facts with which it can be confronted. THOMAS S. KUHN (1922-1996), *The Structure of Scientific Revolutions*, 1962.
498. No theory ever solves all the puzzles with which it is confronted at a given time; nor are the solutions already achieved often perfect. On the contrary, it is just the incompleteness and imperfection of the existing date-theory fit that, at any time, define many of the puzzles that characterize normal science. If any and every failure to fit were ground for a theory rejection, all theories out to be rejected at all times. THOMAS S. KUHN (1922-1996), *The Structure of Scientific Revolutions*, 1962.
499. Scientific knowledge, like language, is intrinsically the common property of a group or else nothing at all. To understand it we shall need to know the special characteristics of the groups that create and use it. THOMAS S. KUHN (1922-1996), *The Structure of Scientific Revolutions*, 1962.
500. Broadly speaking, critical thinking is concerned with reason, intellectual honesty, and open-mindedness, as opposed to emotionalism, intellectual laziness, and closed-mindedness. Thus, critical thinking involves: following evidence where it leads; considering all possibilities; relying on reason rather than emotion; being precise; considering a variety of possible viewpoints and explanations; weighing the effects of motives and biases; being concerned more with finding the truth than with being right; not rejecting unpopular views out of hand; being aware of one's own prejudices and biases, and not allowing them to sway one's judgment. DANIEL J. KURLAND, *I know what it says ... What does it Mean?* 1995.
501. No theory is ultimately confirmed decisively, since we may be mistaken and new date may be uncovered. A theory is only as good as the evidence adduced in its support; and this is often only comparative. PAUL KURTZ, *The Transcendental Temptation*, 1986.
502. The basic methodological principle in science is that we seek natural causal explanations for phenomena. The occult or transcendental temptation is anti-scientific. Where there is uncertainty, the most sensible response is ... the withholding of judgment. ... The dissatisfaction with ambiguity and the quest for order often tempts us to invoke unknown occult or magical causes. PAUL KURTZ, *The Transcendental Temptation*, 1986.

503. The central theme of modern philosophy is skepticism. Given the intense confrontation between religion and science, it became an important weapon in the hands of philosophers and scientists, who wished to liberate themselves from the dead hand of authoritarian theology. PAUL KURTZ, *The Transcendental Temptation*, 1986.
504. Logical thinking is a *process*. The process is simple, it always works, and it can be readily mastered. In the process of logical thinking: (1) Objectivity is the prerequisite, (2) Insight is the goal, (3) Analysis is the method. RAY KYTLE, *Clear Thinking for Composition*, 1969.
505. Unconcretized abstractions subtly block logical thinking by giving an impression of meaning where none exists. They are sound and fury signifying nothing. RAY KYTLE, *Clear Thinking for Composition*, 1969.
506. Correlation is not causation... A correlation between two events does not in itself establish a causal relationship between the two. Just because one event precedes or accompanies another does not mean that it necessarily cause that event. RAY KYTLE, *Clear Thinking for Composition*, 1969.



507. It was a common saying...that men ought not to investigate things from words, but words from things; for that things are not made for the sake of words, but words for the sake of things. DIOGENES LAERTIUS, (3<sup>rd</sup> C. AD), *Lives and Opinions of Eminent Philosophers*.
508. What sociologists and humanists call “rationality,” or “reason,” or what psychologists call cognitive development or cognitive complexity is a good in itself. It is not too much that knowledge is freedom, or that knowledge sets men free, but rather knowing how to know, is freedom and sets men free. ROBERT E. LANE, *Micropolitics*, vol 1., No 1., 1981.
509. A philosophy is characterized more by the formulation of its problems than by its solution of them. SUSANNE K. LANGER (1895-1985), *Philosophy in a New Key*, 1942.
510. Our business, if we desire to live a life not utterly devoid of meaning and significance, is to accept nothing which contradicts our basic experience merely because it comes to us from tradition or convention or authority. ... That is why the condition of freedom in any state is always a widespread and consistent skepticism of the canons upon which power exists. HAROLD J. LASKI (1893-1950), “The Dangers of Obedience,” Harper’s Monthly Magazine , 1-10 June 1929.
511. People in general have no notion of the sort and amount of evidence often needed to prove the simplest facts. PETER MERE LATHAM (d. 1875), *Collected Works*.
512. People don’t ask for facts in making up their minds. They would rather have one good, soul-satisfying emotion than a dozen facts. ROBERT KEITH LEAVETT.
513. A belief is an act of faith not requiring proof and which, besides, almost always is not verifiable by any. If faith imposed itself only by rational argument, very few beliefs would have been formed during the course of the centuries. GUSTAVE Le BON (1841-1931), *Opinions and Beliefs*, 1911.
514. Perhaps one of the more noteworthy trends of our time is the occupation of buildings accompanied by the taking of hostages. The perpetrators of these deeds are generally motivated by political grievance, social injustice, and the deeply felt desire to see how they look on TV. FRAN LEBOWITZ, *Metropolitan Life*, 1978.

515. It is so much easier to assume than to prove; it is so much less painful to believe than to doubt; there is such a charm in the repose of prejudice, when no discordant voice jars upon the harmony of belief. W. E. H. LECKY (1838-1903), *A History of Rationalism*, 1900.
516. All history shows that, in exact proportion as nations advance in civilization, the accounts of miracles taking place among them become rarer and rarer, until at last they entirely cease. W. E. H. LECKY (1838-1903), *History Of The Rise And Influence Of The Spirit Of Rationalism In Europe*, 1878.
517. Almost all Europe, for many centuries, was inundated with blood, which was shed at the direct instigation or with the full approval of ecclesiastical authorities. W. E. H. LECKY (1838-1903), *History Of The Rise And Influence Of The Spirit Of Rationalism In Europe*, 1878.
518. There are two kinds of truths: those of reasoning and those of fact. The truths of reasoning are necessary and their opposite is impossible; the truths of fact are contingent and their opposites are possible. GOTTFRIED LEIBNITZ (1646-1716), *Monadology*.
519. The scientific mind does not so much provide the right answers as ask the right questions. CLAUDE LEVI-STRAUSS, *The Raw and the Cooked*, 1964.
520. Truth is a dangerous word to incorporate within the vocabulary of science. It drags with it, in its train, ideas of permanence and immutability that are foreign to the spirit of a study that is essentially an historically changing movement... Truth is an absolute notion that science, which is not concerned with any such permanency, had better leave alone. HYMAN LEVY, *The Universe of Science*, 1933.
521. To be forewarned and therefore forearmed ... is eminently rational if our belief is true; but if our belief is a delusion, that same forewarning and forearming would obviously be the method whereby the delusion rendered itself incurable. C. S. LEWIS (1898-1963), *Screwtape Proposes A Toast*, 1965.
522. With most men, unbelief in one thing springs from blind belief in another. GEORGE CHRISTOPH LICHTENBERG (1742-1799), *Reflections*, 1799.
523. Generally, a tautology, sometimes referred to as a logical truth, is defined as a proposition in which the subject term implies or entails the predicate term. Since the two terms are linked definitionally, the proposition cannot be empirically invalidated. Consequently, the use of this type of proposition in social psychological theorizing has been generally criticized on the contention that propositions which cannot be empirically validated have no legitimate role in an empirical science. If they are employed, they generally result in "relabeling" rather than "explaining." ALLEN E. LISKA, "Uses and Misuses of Tautologies In Social Psychology," *Sociometry*, December 1969.
524. Faith is the assent to any proposition not made out by the deduction of reason but upon the credit of the proposer. JOHN LOCKE (1632-1704), *An Essay Concerning Human Understanding*, 1690.
525. We should have a great many fewer disputes in the world if words were taken for what they are, the signs of our ideas only, and not for things themselves. JOHN LOCKE (1632-1704), *An Essay Concerning Human Understanding*, 1690.
526. I appeal to common observation, which has always found these artificial methods of reasoning more adapted to catch and entangle the mind, than to instruct and inform the understanding. JOHN LOCKE (1632-1704), *An Essay Concerning Human Understanding*, 1690.
527. One unerring mark of the love of truth is not entertaining any proposition with greater assurance than the proofs it is built upon will warrant. JOHN LOCKE (1632-1704).

528. Magic suggests aid from sources lying in the unseen and in the unknown. Magic is knowledge beyond the average man's comprehension; it is a secret mastering influence which inspires wonder or fear... C. G. LOOMIS, *White Magic*, 1948.
529. A wise skepticism is the first attribute of a good critic. JAMES RUSSELL LOWELL (1819-1891), *Among My Books*, 1870.
530. Our duty is to believe that for what we have sufficient evidence, and to suspend our judgment when we have not. JOHN LUBBOCK (1803-1865).
531. The modern theory that you should always treat the religious convictions of other people with profound respect finds no support in the Gospels. Mutual tolerance of religious views is the product not of faith, but of doubt. ARNOLD LUNN (1888-1974).
532. The scientific temperament feels much more comfortable when it is breaking down a complex phenomenon into simpler parts than when it is trying to pull together a series of diverse facts into a unity of relationship. For a solution of the ultimate riddles, however, synthesis is more important than analysis. ... It is not an understanding of units which we now seek, but of unity. ROBERT S. LYND (1892-1970), *Knowledge For What?*, 1948.



533. He does not seem to know what an argument is. He never used arguments himself. He never troubles himself to answer the arguments of an opponent. It has never occurred to him, that a man ought to be able to give some better account of the way in which he arrived at his opinions than merely that it is his will and pleasure to hold them. THOMAS BABINGTON MACAULAY (1800-1859), *Essay on Southey's Colloquies*.
534. All uncertainty is fruitful...so long as it is accompanied by the wish to understand. ANTONIO MACHADO (1875-1939), *Juan de Mairena*, 1943.
535. That peculiar disease of intellectuals, that infatuation with ideas at the expense of experience, that compels experience to conform to bookish expectations. ARCHIBALD MACLEISH (1882-1982).
536. Rationality, logic and a scientific approach all point to a society which is 'open' and pluralistic, within which incompatible views are expressed and conflicting aims pursued; a society in which everyone is free to investigate problem-situations and to propose solutions; a society in which everyone is free to criticize the proposed solutions of others, most importantly those of the government... BRIAN MAGEE, *Philosophy and the Real World: An Introduction to Karl Popper*, 1982.
537. The purpose of critical thinking is ... to achieve understanding, evaluate viewpoints, and solve problems. Since all three areas involve the asking of questions, we can say that critical thinking is the questioning or inquiry we engage in when we seek to understand, evaluate, or resolve. VICTOR P. MAIORANA, *Critical Thinking Across the Curriculum*, 1992.
538. We find magic wherever the elements of chance and accident, and the motional play between hope and fear have a wide and extensive range. We do not find magic wherever the pursuit is certain, reliable, and well under the control of rational methods and technological processes. Further, we find magic where the element of danger is conspicuous. BRONISLAW MALINOWSKI (1884-1942), *Magic, Science and Religion*, 1925.

539. The most reckless and treacherous of all theorists is he who professes to let facts speak for themselves, who keeps in the background the part he has played, perhaps unconsciously, in selected and grouping them, and in suggesting the argument *post hoc ergo propter hoc*. ALFRED MARSHALL (1842-1924), *The Present Position of Economics*, 1885.
540. Religious suffering is at one and the same time the expression of real suffering and a protest against real suffering. Religion is the sigh of the oppressed creature, the heart of a heartless world and the soul of soulless conditions. It is the opium of the people. KARL MARX (1818-1883), *A Contribution to the Critique of Hegel's Philosophy of Right*, 1844.
541. The very beginning, the intrinsic core, the essence, the universal nucleus of every known high religion ... has been the private, lonely, personal illumination, revelation, or ecstasy of some acutely sensitive prophet or seer. ABRAHAM MASLOW (1908-1970), *Religions, Values, and Peak Experiences*, 1964.
542. If a truth is a value it is because it is true and not because it is brave to speak it. W. SOMERSET MAUGHAM (1874-1965), 1938.
543. When blithe to argument I come, Though armed with facts and merry; May providence protect me from, The Fool as adversary. Whose mind to him a kingdom is, Where reason lacks dominion; Who calls conviction prejudice, and prejudice opinion. PHILLIS MCGINLEY (1905-1978), 1960.
544. For those already favorable to the position advocated, the one-sided message was more effective. The two-sided message was more effective for those originally in opposition. The better educated subjects were also more affected by the two sided message. JACK M. McLEOD, "The Contribution of Psychology to Human Communication Theory," in *Human Communication Theory: Original Essays*, 1967.
545. The appearance of ... fallacies is often an indication of ideological thinking. Some of the more popular fallacies to look for include *ignoring the question*, which involves proving something other than the point to be established, or *double standard*, which involves the use of one standard for a favored group of people or person, and another standard (usually much higher) for an unfavored group or person. DOUG McMANAMAN, *Ideological Thinking and the Need to Be Critical*, 2003.
546. At the most fundamental level, knowledge is organized experience and the search for knowledge is a search for patterns of organization. The organization is always created and not discovered. EUGENE MEEHAN, quoted in *The Elements of Social Scientific Thinking* [Kenneth R. Hoover], 1992.
547. The intensity of a conviction that a hypothesis is true has no bearing on whether it is true. PETER MEDAWAR (1915-1987), *Advice To A Young Scientist*, 1979.
548. All scientists know of colleagues whose minds are so well equipped with the means of refutation that no new idea has the temerity to seek admittance. Their contribution to science is accordingly very small. PETER MEDAWAR (1915-1987), *A Note On The Scientific Method*, 1949.
549. What plays the mischief with the truth is that men will insist upon the universal application of a temporary feeling or opinion. HERMAN MELVILLE (1819-1891).
550. God is the immemorial refuge of the incompetent, the helpless, the miserable. They find not only sanctuary in his arms, but also a kind of superiority, soothing to their macerated egos; He will set them above their betters. H. L. MENCKEN (1880-1956), *Minority Report*, 1956.



551. Despite the common delusion to the contrary the philosophy of doubt is far more comforting than that of hope. The doubter escapes the worst penalty of the man of faith and hope; he is never disappointed, and hence never indignant. H. L. MENCKEN (1880-1956), *Damn! A Book of Calumny*, 1918.
552. The most costly of all follies is to believe passionately in the palpably not true. H. L. MENCKEN (1880-1956), *Minority Report*, 1956.
553. Science, at bottom, is really anti-intellectual. It always distrusts pure reason, and demands the production of objective facts. H. L. MENCKEN (1880-1956), *Minority Report*, 1956.
554. The world always makes the assumption that the exposure of an error is identical with the discovery of truth -- that error and truth are simply opposite. They are nothing of the sort. What the world turns to, when it has been cured of one error, is usually another error, and maybe one worse than the first one. H. L. MENCKEN (1800-1956).
555. Objectivity is a matter of intellectual honesty. Take the example of Jonas Salk. He cared very much whether he found a vaccine for polio, so he was not "detached" about his work. But he had to be completely objective in his research. Other people would be checking the results of his experiments, and he weren't completely objective the research would be a waste. His objectivity and honesty did not keep him from caring about the results. DAVID MERRITT, quoted in *Breaking The News* (James Fallows), 1997.
556. Most institutions demand unqualified faith; but the institution of science makes skepticism a virtue. ROBERT K. MERTON (1910-2003), *Social Theory and Social Structure*, 1962.
557. The historian's first duties are sacrilege and the mocking of false gods. They are his indispensable instruments for establishing the truth. JULES MICHELET (1798-1874), *History of France*, 1833.
558. A being who can create a race of men devoid of real freedom and inevitably foredoomed to be sinners, and then punish them for being what he has made them, may be omnipotent and various other things, but he is not what the English language has always intended by the adjective holy. JOHN STUART MILL (1806-1873), *Examination of Sir William Hamilton's Philosophy*, 1865.
559. The fateful tendency of mankind to leave off thinking about a thing when it is no longer doubtful, is the cause of half their errors. A contemporary author has well spoken of "the deep slumber of a decided opinion." JOHN STUART MILL (1806-1873), *On Liberty*, 1859.
560. If you want to know whether you are thinking rightly, put your thoughts into words. In the very attempt to do this you will find yourselves, consciously or unconsciously, using logical forms. JOHN STUART MILL (1806-1873), *Inaugural Address at Saint Andrews*.
561. The principle itself of dogmatic religion, dogmatic morality, dogmatic philosophy, is what requires to be booted out; not any particular manifestation of that principle. JOHN STUART MILL (1806-1873), *The Spirit Of The Age*.
562. Together with the everyday implication that a cause is a trigger, there is a philosophical assumption that needs to be cancelled -- that if something causes an event, then it made the event inevitable under the actual circumstances; given the cause and its actual background, the sequel could not have been otherwise. This assumption that all causes are deterministic was never part of everyday causal analysis... RICHARD W. MILLER, *Fact And Method*, 1987.

563. When controversy is so cyclical and evenly divided, one cause may be a tacit, distorting assumption, shared by both sides and insuring that arguments from both sides will be defective. RICHARD W. MILLER, *Fact And Method*, 1987.
564. Vulgarized knowledge characteristically gives birth to a feeling that everything is understandable and explained. It is like a system of bridges built over chasms. One can travel boldly ahead over these bridges, ignoring the chasms. It is forbidden to look down into them; but that, alas, does not alter the fact that they exist. CZESLAW MILOSZ (1911-2004), *The Captive Mind*, 1952.
565. To desire wisdom is to seek principles that cut through the superficial and trivial facts that clutter our intellectual landscape, revealing the basic shape of things underneath. ARTHUR J. MINTON & THOMAS A. SHIPKA, *Philosophy: Paradox and Discovery*, 1990.
566. The desire to know is not often strong enough to sustain critical inquiry. Men generally are interested in the results, in the story or romance of science, not in the technical methods whereby these results are obtained and their truth continually tested and qualified. Our first impulse is to accept the plausible as true and to reject the uncongenial as false. ARTHUR J. MINTON & THOMAS A. SHIPKA, *Philosophy: Paradox and Discovery*, 1990.
567. Science is not satisfied with psychological certitude, for the mere intensity with which a belief is held is no guarantee of its truth. Science demands and looks for logically adequate grounds for the propositions it advances. ARTHUR J. MINTON & THOMAS A. SHIPKA, *Philosophy: Paradox and Discovery*, 1990.
568. How strange it is to see with how much passion / People see things only in their own fashion! MOLIERE (1622-1673), *School for Wives*, 1662.
569. He who establishes his argument by noise and command shows that his reason is weak. MICHEL de MONTAIGNE (1533-1592), *Essays*, 1588.
570. I see men ordinarily more eager to discover a reason for things than to find out whether things are so. MICHEL de MONTAIGNE (1533-1592), *Essays*, 1588
571. To know much is often the cause of doubting more. MICHEL de MONTAIGNE (1533-1592), *Essays*, 1588.
572. Men are extremely inclined to the passions of hope and fear; a religion, therefore, that has neither a heaven nor a hell could hardly please them. CHARLES DE MONTESQUIEU (1689-1755), *The Spirit of the Laws*, 1748.
573. Stupidity does not consist in being without ideas. Such stupidity would be the sweet, blissful stupidity of animals, mollusks and the gods. Human stupidity consists in having lots of ideas, but stupid ones. HENRY de MONTHERLANT (1896-1972), *Notebooks*, 1930.
574. Our opinions are less important than the spirit and temper with which they possess us, and even good opinions are worth very little unless we hold them in a broad, intelligent, and spacious way. JOHN MORLEY (1838-1923), *Critical Miscellanies*, 1871-1908.
575. That there are no atheists in foxholes isn't an argument against atheism, it's an argument against foxholes. JAMES MORROW.

576. What was once called the objective world is a sort of Rorschach ink blot, into which each culture, each system of science and religion, each type of personality, reads a meaning only remotely derived from the shape and color of the blot itself. LEWIS MUMFORD (1895-1990), *The Conduct of Life*, 1951.
577. The anthropologist should question everything that he sees and hears, examine phenomena fully and from every angle, seek and evaluate the contradiction of any proposition. ... It (the dialectical exercise) requires us to also look for paradox as much as complementarity, for opposition as much as accommodation. It portrays a universe of dissonance underlying apparent order and seeks deeper orders beyond the dissonance. ROBERT F. MURPHY, *The Dialectics of Social Life*, 1971.
578. In my philosophy there are no absolute or inevitable laws, no enduring certainties: every observation, every inference, every explanation, and every prediction is a matter of less or greater probability. To this most psychologists, I trust, would be ready to assent. HENRY A. MURRAY (1893-1988), *Preparations for the Scaffold of a Comprehensive System*, 1959.
579. Everyone is a prisoner of his own experiences. No one can eliminate prejudices -- just recognize them. EDWARD R. MURROW (1908-1965), *News Commentary*, 31 December 1955.
580. Rational man....has a deeply rooted distrust of eternal verities, while he will never deny that they are indispensable, he is convinced that people who take them literally are mad. ROBERT MUSIL (1880-1942), *The Man Without Qualities*, 1930.
581. This tendency to prejudge reality based on our expectations is a basic fact about the human mind... There is an objective reality out there. But in science as in everyday life, we always view it through the lens of our beliefs and values. DAVID G. MYERS, *Social Psychology*, 1993.
582. Common sense usually is right *after the fact*; it describes events more easily than it predicts them. We therefore easily deceive ourselves into thinking that we know and knew more than we do and did. DAVID G. MYERS, *Social Psychology*, 1993.
583. We should not investigate facts by the light of arguments, but arguments by the light of facts. MYOSIN, of Hen, 600 B.C.



584. It is the desire for explanations that are at once systematic and controllable by factual evidence that generates science; and it the organization and classification of knowledge on the basis of explanatory principles that is the distinctive goal of the sciences. ERNEST NAGEL (1901-1985), *The Structure of Science*, 1961.
585. Indignation is the seducer of thought. No man can think clearly when his fists are clenched. GEORGE JEAN NATHAN (1882-1958), *The World In Falseface*, 1923.
586. The path of sound credence is through the thick forest of skepticism. GEORGE JEAN NATHAN (1882-1958), *Mature Critic*, 1924.
587. Since beliefs are in themselves true or false and arguments are in themselves valid or invalid, the worth of a belief or an argument is something that it possesses independently of any person.... The fact that a particular person asserts an idea is not generally a good reason for thinking it true. STEPHAN NATHANSON, *The Idea Of Rationality*, 1994.

588. There can be no absolute conclusions in economics, and no result can be asserted as positive, until all the cause which may affect have been considered. SIMON NEWCOMB (1835-1909), *Principles of Political Economy*, 1886.
589. A liberal education is the education which gives a man a clear, conscious view of his own opinions and judgments, a truth in developing them, an eloquence in expressing them, and a force in urging them. It teaches him to see things as they are, to go right to the point, to disentangle a skein of thought, to detect that which is sophistical, and to discard what is irrelevant. JOHN HENRY NEWMAN (1801-1890), quoted in *Saturday Review*, 21 November 1953.
590. Nothing is more common than for men to think that because they are familiar with words, they understand the ideas they stand for. JOHN HENRY NEWMAN (1801-1890), quoted in *The Importance of Language* (Max Black, ed.), 1962.
591. The chief use to which we put our love of the truth is in persuading ourselves that the thing we love is true. PIERRE NICOLE (1625-1695), *Essay on Morals*, 1671-78.
592. The religious interpretation of the world is essentially an insistence that the ideal is real and that the real can be understood only in the light of the ideal. REINHOLD NIEBUHR (1892-1971).
593. Tolerance of people who differ in convictions and habits requires a residual awareness of the complexity of truth and the possibility of opposing views having some light on one or the other facet of a many-sided truth. REINHOLD NIEBUHR (1892-1971), "Tolerance," in *Colliers Encyclopedia*, 1966.
594. I distrust all systematizers, and avoid them. The will to a system shows a lack of honesty. FRIEDRICH NIETZSCHE (1844-1900), *Twilight of the Gods*, 1889.
595. The irrationality of a thing is no argument against its existence, rather a condition of it. FRIEDRICH NIETZSCHE (1844-1900), *Human, All Too Human*, 1878.
596. The desire for a strong faith is not the proof of a strong faith, rather the opposite. If one has it one may permit oneself the beautiful luxury of skepticism; one is secure enough, firm enough, fixed enough for it. FRIEDRICH NIETZSCHE (1844-1900), *Twilight of the Idols*, 1888.
597. Do you not believe that the science would ever have arisen and become great if there had not been magicians, alchemists, astrologers and wizards, who thirsted and hungered after abscondite and forbidden powers? FRIEDRICH NIETZSCHE (1844-1900), 1886.
598. Egocentrism interferes with critical thinking on all levels, from the deepest to the most superficial. It stands in the way of the empathy that is such an important part of critical thinking. GERALD M. NOSICH, *Learning To Think Things Through*, 2001.
599. There is no relationship between precision and accuracy: a lie can be entirely precise; a true statement can lack precision. Therefore, you can't infer that a statement is accurate from the fact that it is precise. GERALD M. NOSICH, *Learning To Think Things Through*, 2001.
600. The human brain craves understanding. It cannot understand without simplifying, that is, without reducing things to a common element. However, all simplifications are arbitrary and lead us to drift insensibly away from reality. PIERRE LECOMPTE DU NOUEY, *Human Destiny*, 1947.
601. To become properly acquainted with a truth we must first have disbelieved it, and disputed against it. NOVELLAS (1772-1801), *Fragments*, late 18th c.

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602. There is nothing more effectual in showing us the weakness of any habitual fallacy or assumption than to hear it sympathetically through the ears, as it were, of a skeptic. MARGARET OLIPHANT (1828-1887), *Phoebe Junior*, 1876.
603. When time is run and the future becomes history, it will be clear how little of it we today foresaw or could foresee. ... Our problem is not only to face the somber and grim elements of the future, but to keep them from obscuring it. J. ROBERT OPPENHEIMER (1904-1967), *New York Times*, 5 December 1999.
604. Derived beliefs...can be built up from basic underlying beliefs in a syllogistic type of structure... Despite their syllogistic structure, beliefs are not usually completely logical or rational. They are built up of elements which “go together” comfortably in the person’s value system. STUART OSKAMP, *Attitudes and Opinions*, 1977.
605. Often what we mean by saying, for example, that academics are ‘out of touch’ is that they are unaware of symbolic values and the charge they carry, for reason is myopic when it confronts symbols, and the process of education is one of editing out symbolic awareness. NICHOLAS JACKSON O’SHAUGHNESSY, *Politics and Propaganda: Weapons of Mass Seduction*, 2004.
606. Emotional proof is where we feel intuitively that there is a causal connection which is highly significant to the creation of some event and yet which cannot easily be pinned down, but where we also believe this thing to be true because we have a deep emotional need for it to be true. NICHOLAS JACKSON O’SHAUGHNESSY, *Politics and Propaganda: Weapons of Mass Seduction*, 2004.
607. [Religious mystery is] the standard device for getting around a logical contradiction by elevating it to the status of a truth beyond logic. MAX C. OTTO, *Religious Liberals Reply*, 1947.

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608. A good simulation, be it religious myth or scientific theory, gives us a sense of mastery over experience. To represent something symbolically, as we do when we speak or write, is somehow to capture it, thus making it one’s own. HEINZ R. PAGELS, *The Dream of Reason*, 1988.
609. A long habit of not thinking a thing wrong gives it a superficial appearance of being right, and raises at first a formidable outcry in defense of custom. THOMAS PAINE (1737-1809), *Common Sense*, 1776.
610. It is necessary to the happiness of man, that he be mentally faithful to himself. Infidelity does not consist in believing, or in disbelieving; it consists in professing to believe what he does not believe. THOMAS PAINE (1737-1809), *The Age of Reason*, 1794.
611. Give me a fruitful error any time, full of seeds, bursting with its own corrections. You can keep your sterile truth for yourself. VILFREDO PARETO (1848-1923).
612. Words are as beacons to lighten the darkness of our ignorance, but too many of us have been blinded with an excess of light; the excess is ours. Words are a solvent of clotted prejudice, but too many of us have made of them a reinforcement of the insensate atavism of inherited opinions. ERIC PARTRIDGE (1894-1979), *Words at War, Words at Peace*, 1948.

613. People are generally better persuaded by reasons they themselves have discovered than by those which come into the mind of others. BLAISE PASCAL (1623-1662), *Pensees*, 1670.
614. It may be that there are such things as true proofs, but it is not certain. Thus that only proves that it is not certain that everything is uncertain – to the greater glory of skepticism. BLAISE PASCAL (1632-1662), *Pensees*, 1670.
615. Reason commands us far more imperiously than a master; in disobeying the latter we are made unhappy, in disobeying the former, fools. BLAISE PASCAL (1623-1662), *Pensees*, 1670.
616. Man is a reed, the weakest in nature, but he is a thinking reed. BLAISE PASCAL (1623-1662), *Pensees*, 1670.
617. The greatest disorder of the mind is to let will direct belief. LOUIS PASTEUR (1822-1895).
618. All progress of mind consists for the most part of differentiation, in the resolution of an obscure and complex subject into its component aspects. WALTER PATER (1839-1894), *Style*, 1888.
619. The technique of generalizing is essential to thought, yet in a sense it involves an oversimplification. Thus, it is a two-edged weapon. Legitimately used, it can achieve great intellectual victories; abused it leads to disaster. Watch out for overgeneralization. When you see it, do not be deceived. BERNARD M. PATTEN, *Truth, Knowledge, Or Just Plain Bull: How To Tell the Difference*, 2004.
620. Any view, statement, or assertion with the word *all* in it is very hard to maintain because it is extreme. In this form, any argument with the words *all, each, every, all the time, never, absolutely*, or any such all-encompassing word or statement can be exploded by a single contrary instance. BERNARD M. PATTEN, *Truth, Knowledge, Or Just Plain Bull: How To Tell The Difference*, 2004.
621. There so many ways in which events, organizations, and we ourselves may be linked that it's almost impossible to believe in the significance of all of them. Yet many do, sometimes arguing that the probability of this or that coincidence is so low that it must mean something. Such people fail to realize that though it is unlikely that any particular sequence of events specified beforehand will occur, there is a high probability that some remarkable sequence will be observed subsequently. JOHN ALLEN PAULOS, *A Mathematician Reads the Newspaper*, 1995.
622. [T]o call an argument illogical, or a proposition false, is a special kind of moral judgment. CHARLES S. PEIRCE (1839-1914), *Collected Papers*.
623. All the progress we have made in philosophy, that is, all that which as been made since the Greeks, is the result of that methodical skepticism which is the element of human freedom. CHARLES S. PEIRCE (1839-1914), *Selected Writings*.
624. Doubt is an uneasy and dissatisfied state from which we struggle to free ourselves and pass into a state of belief; while the latter is a calm and satisfactory state which we do not wish to avoid, or to change to a belief in anything else. CHARLES S. PEIRCE (1839-1914), *The Fixation of Belief*, 1877.
625. Few persons care to study logic, because everybody conceives himself to be proficient enough in the art of reasoning already. CHARLES S. PEIRCE (1839-1914), *The Fixation of Belief*, 1877.
626. Every work of science great enough to be well remembered for a few generations affords some exemplification of the defective state of the art of reasoning of the time when it was written; and each chief step in science has been a lesson in logic. CHARLES SANDERS PEIRCE (1839-1914), *The Fixation of Belief*, 1877.

627. Man stops growing when he ceases being critical, when he ignores or refuses to admit that what he has created – his knowledge, his social arrangements – contain contradictions and adverse consequences. Man can ignore his condition of fallibility and declare that his knowledge is true, that his actions are good. He can claim to be God. H. J. PERKINSON, “Fanaticism: Flight From Fallibility,” *ETC: A Review of General Semantics* 59, 2002.
628. He was a wise man who said: “As I grow older I pay less attention to what men say. I just watch what they do.” WILFRED A. PETERSON.
629. Truth is one forever absolute, but opinion is truth filtered through the moods, the blood, and the disposition of a spectator. WENDALL PHILLIPS (1811-1884), *Lecture*, 4 October 1859.
630. What is defeat? Nothing but education; nothing but the first step to something better. WENDALL PHILLIPS (1811-1884), *Lecture*, 4 October 1859.
631. To doubt everything or to believe everything are to equally convenient solutions: both dispense with the necessity for reflection. JULES HENRI PINCER (1854-1912), *The Science of Hypothesis*.
632. Human thought and behavior, no matter how subtle and flexible, could be the product of a very complicated program, and that program may have been our endowment from natural selection. The typical imperative from biology is not “Thou Shalt ...,” but “If ...then ...else.” STEVEN PINKER, *How The Mind Works*, 1997.
633. Logic is one thing, the human animal another. You can quite easily propose a logical solution to something and at the same time hope in your heart of hearts that it won’t work out. LUIGI PIRANDELLO (1867-1936), *The Pleasure of Honesty*, 1917.
634. Not everyone understands what a completely rational process this is, this maintenance of a motorcycle. They think it’s some kind of a “knack” or some kind of “affinity for machines” in operation. They are right, but the knack is almost purely a process of reason... A motorcycle functions entirely in accordance with the laws of reason. ROBERT M. PIRSIG, *Zen and the Art of Motorcycle Maintenance*, 1974.
635. The real purpose of [the] scientific method is to make sure Nature hasn’t misled you into thinking you know something you actually don’t know. ROBERT M. PIRSIG, *Zen and the Art of Motorcycle Maintenance*, 1974.
636. For every fact there is an infinity of hypotheses. The more you look the more you see. ROBERT M. PIRSIG, *Zen and the Art of Motorcycle Maintenance*, 1974.
637. A new scientific truth does not triumph by convincing 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 PLANK (1858-1947), *A Scientific Autobiography*, 1949.
638. [When reason] is asleep, then the wild beast within us, gorged with meat or drink, starts up and having shaken off sleep, goes forth to satisfy his desires; and there is no conceivable folly or crime it won’t commit. PLATO (428-347 B.C.).
639. Arguments that make their point by means of similarities are impostors, and unless you are on your guard against them, will quite readily deceive you. PLATO (428-348 B.C.).
640. Arguments drawn from probabilities are idle. PLATO (428-348 B.C.), *Phaedo*, c. 4<sup>th</sup> Century B.C.

641. Experience has shown, and a true philosophy will always show, that a vast, perhaps the larger, portion of truth arises from the seemingly irrelevant. EDGAR ALLAN POE (1809-1849), *The Mystery of Marie Roget*.
642. Doubting everything or believing everything are two equally convenient solutions, both of which save us from thinking. HENRI POINCARÉ (1854-1912), *La Science et l'hypothèse*, 1908.
643. Almost every systematic error which has deluded men for thousands of years relied on practical experience. Horoscopes, incantations, oracles, magic, witchcraft, the cures of witch doctors and of medical practitioners before the advent of modern medicine, were all firmly established through the centuries in the eyes of the public by their supposed practical successes. The scientific method was devised precisely for the purpose of elucidating the nature of things under more carefully controlled conditions and by more rigorous criteria than are present in the situations created by practical problems. MICHAEL POLANYI (1891-1976), *Personal Knowledge*, 1958.
644. A doctrine capable of being stated only in obscure and involved terms is open to reasonable suspicion of being either crude or erroneous. SIR FREDERICK POLLOCK (1845-1937), 1946.
645. A man should never be ashamed to own he has been in the wrong, which is but saying that he is wiser today than he was yesterday. ALEXANDER POPE (1688-1744), *Thoughts on Various Subjects*, 1706.
646. All seems infected that the infected spy / As all looks yellow to the jaundiced eye. ALEXANDER POPE (1688-1744), *An Essay on Criticism*, 1711.
647. [Rationalism] is bound up with the idea that everyone is liable to make mistakes, which may be found out by himself, or by others, or by himself with the assistance of the criticism of others. It therefore suggests the idea that nobody should be his own judge, and it suggests the idea of impartiality. SIR KARL POPPER (1902-1994), *The Open Society and Its Enemies*, 1966.
648. Our belief in any particular natural law cannot have a safer basis than our unsuccessful critical attempts to refute it. SIR KARL POPPER (1902-1994), *Conjectures and Refutations: The Growth of Scientific Knowledge*.
649. A system (is) empirical or scientific only if it is capable of being tested by experience. These considerations suggest that not the verifiability but the falsifiability of a system is to be taken as a criterion of demarcation. It must be possible for an empirical or scientific system to be refuted by experience. SIR KARL POPPER (1902-1994), *The Logic Of Scientific Discovery*, 1935.
650. If we are uncritical we shall always find what we want: we shall look for, and find, confirmations, and we shall look away from, and not see, whatever might be dangerous to our pet theories. In this way it is only too easy to obtain what appears to be overwhelming evidence in favor of a theory which, if approached critically, would have been refuted. SIR KARL POPPER (1902-1994), *The Poverty of Historicism*, 1986.
651. It is not the possession of knowledge, of irrefutable truths, that constitutes the man of science, but the disinterested, incessant search for truth. SIR KARL POPPER (1902-1994), *The Logic of Scientific Discovery*, 1935.
652. In so far as a scientific statement speaks about reality, it must be falsifiable: and in so far as it is not falsifiable, it does not speak about reality. SIR KARL POPPER (1902-1994), *The Logic of Scientific Discovery*, 1935.



653. A question, even of the simplest kind, is not, and never can be, unbiased. The structure of any question is as devoid of neutrality as its content. The form of a question may ease our way or pose obstacles. Or, when even slightly altered, it may generate antithetical answers... NEIL POSTMAN (1931-2003).
654. It is only after doubt has come that intellectual belief arises. To entertain reasons for believing in the existence of a thing presupposes the possibility of its nonexistence. JAMES BISSET PRATT (1875-1944), *The Psychology of Religion and Belief*, 1907.
655. Ideology inhibits independent thinking and all the work that thinking entails; it offers support for like-minded folk who have also put their minds out to pasture. PETER S. PRESCOTT, *Newsweek*, 10 October 1988.

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656. Contradictions do not exist. Whenever you think you are facing a contradiction, check your premises. You will find that one of them is wrong. AYN RAND (1905-1982), *Atlas Shrugged*, 1957.
657. [Superstition is] a belief or notion, not based on reason or knowledge, in or of the ominous significance of a particular thing, circumstance, occurrence, proceeding, or the like. S. B. FLEXNER, *Random House Dictionary of the English Language*, 1987.
658. What a state of society is this in which freethinker is a term of abuse, and in which doubt is regarded as sin. W. WINWOOD READE, *The Martyrdom of Man*, 1972.
659. RS, Redfield. Facts have a cruel way of substituting themselves for fancies. There is nothing more remorseless, just as there is nothing more helpful, than truth. WILLIAM C. REDFIELD, *Address, Case School*, 27 May 1915.
660. There is no expedient to which a man will not resort to avoid the real labor of thinking. JOSHUA REYNOLDS (1723-1792).
661. *Logos appeals* are those you should use most often because they most directly involve the information you present and your reasoning about it. *Logos appeals* are rhetorical in that they depend on the writer and reader agree about which information (statistics, examples testimony) is important and which ways of presenting and analyzing that information (analogies, quotations, pictures, definitions) are effective. WILLIAM E. RIVERS, *Issues and Images: An Argument Reader*, 1993.
662. *Ethos appeals* are designed to persuade readers that a writer's argument should be accepted or at least carefully considered because of that writers' experience, knowledge or character. WILLIAM E. RIVERS, *Issues and Images: An Argument Reader*, 1993.
663. *Pathos appeals* are designed to elicit an emotional response from the audience. Our emotional response is not to the author (which would technically make it *ethos*), but to the subject matter in an essay or speech. We react emotionally to many things, including people, ideas, and symbols, but we react most intensely to the plights of individual human beings. WILLIAM E. RIVERS, *Issues and Images: An Argument Reader*, 1993.
664. A wise chieftain never kills the Hun bearing bad news. Rather, the wise chieftain kills the Hun who fails to deliver bad news. WESS ROBERTS, *Leadership Secrets of Atilla the Hun*, 1987.

665. What history teaches us is that progress is retarded when scholars fail to distinguish between the metaphor and the fact that the metaphor is intended to represent.... DANIEL ROBINSON, *An Intellectual History of Psychology*, 1981.
666. Few of us take the pains to study the origins of cherished convictions... We like to continue to believe what we have been accustomed to accept as true, and the resentment aroused when doubt is cast upon any of our assumptions leads us to seek every manner of excuse for clinging to them. JAMES HARVEY ROBINSON (1863-1936), *The Mind in the Making*, 1921.
667. Most of our so-called reasoning consists in finding arguments for going on believing as we already do. JAMES HARVEY ROBINSON (1863-1936), *The Mind in the Making*, 1921.
668. We are incredibly heedless in the formation of our beliefs, but find ourselves filled with an illicit passion for them when anyone proposes to rob us of their companionship. It is obviously not the ideas themselves that are dear to us, but our self-esteem, which is threatened. JAMES HARVEY ROBINSON (1863-1936), *The Mind In The Making*, 1921.
669. Nothing is a waste of time if you use the experience wisely. AUGUSTE RODIN.
670. When a scientist is ahead of his times, it is often through misunderstanding of current, rather than intuition of future truth. In science there is never any error so gross that it won't one day, from some perspective, appear prophetic. JEAN ROSTAND (1894-1977), *Journal d'un Caractere*, 1931.
671. There is nothing more horrible than the murder of a beautiful theory by a brutal gang of facts. FRANCOIS, DUC de la ROUCHEFOUCAULD (1613-1680), *Maxims*, 1665.
672. What is desperately needed...is the skepticism and the sense of history that a liberal arts education provides. FELIX G. ROHATYN, *New York Times*, 3 June 1987.
673. Logic is the science of proof. What the logical man insists on is simply this: that if you claim that you have proved a point -- about anything at all -- then your proof should be scrutinized in terms of the adequacy of your evidence. Logic shows us how to make this scrutiny..... Logic helps us to confound...irrational attitudes by showing us that there is much more room for doubt than is dreamed of by dogmatic prophets and proclaimers. Thus logic encourages a bit of skepticism. LIONEL RUBY, *The Art of Making Sense*, 1968.
674. The error of the double standard consists of using one set of criteria for judging cases that concern us or someone we identify with and another set for judging other cases. It involves viewing evidence selectively or twisting it to serve our own interests. VINCENT RYAN RUGGIERO, *Thinking Critically About Ethical Issues*, 1997.
675. We want our theoretical views to yield statements about the empirical world that are in some respects falsifiable... To be empirically falsifiable, a theory should yield statements for which, in principle, contrary evidence might be adduced. Falsifiable theories afford the possibility of organizing research so as to seek potentially undermining evidence. They enable us to envisage evidence compatible with one theory yet tending to cast doubt on another. JAMES B. RULE, *Theories of Civil Violence*, 1988.
676. The connotation of an expression consists of the emotional states that most people experience when they use or hear the expression. For words that are used for their emotive force, connotation is part of their meaning. We should be sensitive to the nuances of connotation while distaining to exploit it to win arguments. GERALD RUNKLE, *Good Thinking: An Introduction to Logic*, 1978.

677. The fallacies of composition and division occur when the difference between collective and distributive attribution is overlooked. The fallacy of composition assumes that what is true of the parts will also be true of the whole; the fallacy of division assumes that what is true of the whole will also be true of the parts. GERALD RUNKLE, *Good Thinking: An Introduction to Logic*, 1978.
678. Begging the question occurs when one assumes in the premise of an argument the very thing he or she is trying to prove... Another way of begging the question is by stipulating certain definitions for key words. GERALD RUNKLE, *Good Thinking: An Introduction to Logic*, 1978.
679. Genius is only a superior power of seeing. JOHN RUSKIN (1819-1900).
680. [There is] a fallacy caused by an excited state of feelings, make us, for the time, more or less irrational. ... All violent feelings have the same effect. They produce in us a falseness in all our impression of external things, which I would generally characterize as the "Pathetic fallacy." JOHN RUSKIN (1819-1900), "Of the Pathetic Fallacy," in *Modern Painters*, 1956.
681. There are masked words abroad, I say, which nobody understands, but which everybody uses, and most people will also fight for, live for, or even die for, fancying they mean this, or that, or the other, of things dear to them. JOHN RUSKIN (1819-1900), *Of King's Treasuries*.
682. The work of science is to substitute facts for appearances, and demonstrations for impressions. JOHN RUSKIN (1819-1900), *The Stones of Venice*, 1851-53.
683. Science, though it starts from observations of the particular, is not concerned with the particular, but with the general. A fact, in science, is not a mere fact, but an instance. BERTRAND RUSSELL (1872-1970), *The Scientific Outlook*.
684. Heretical views arise when the truth is uncertain, and it is only when the truth is uncertain that censorship is invoked. BERTRAND RUSSELL (1872-1970), *The Value of Free Thought*.
685. In every writer on philosophy there is a concealed metaphysic, usually unconscious; even if his subject is metaphysics, he is almost certain to have an uncritically believed system which underlies his specific arguments. BERTRAND RUSSELL (1872-1970), in *The Philosophy of John Dewey* ( P. A. Schilpp, ed).
686. What makes a freethinker is not his beliefs but the way in which he holds them. If he holds them because his elders told him they were true when he was young, or if he holds them because if he did not he would be unhappy, his thought is not free; but if he holds them because, after careful thought he finds a balance of evidence in their favor, then his thought is free, however odd his conclusions may seem. BERTRAND RUSSELL (1872-1970), *Understanding History*, 1957.
687. Most of the greatest evils that man has inflicted upon man have come through people feeling quite certain about something which, in fact, was false. BERTRAND RUSSELL (1872-1970), *Ideas That Have Harmed Mankind*, 1946.
688. I mean by 'hard' data those which resist the solvent influence of critical reflection, and by 'soft' data those which, under the operation of this process, becomes to our minds more or less doubtful. BERTRAND RUSSELL (1872-1970), *Our Knowledge of the External World*.
689. The essence of the liberal outlook lies not in what opinions are held, but in how they are held: instead of being held dogmatically, are they held tentatively, with a consciousness that new evidence may at any moment lead to their abandonment. BERTRAND RUSSELL (1872-1970), *Unpopular Essays*, 1950.



690. There is a lurking fear that some things are “not meant” to be known, that some inquiries are too dangerous for human beings to make. CARL SAGAN (1934-1996), *Broca's Brain*, 1979.
691. Science is a way of thinking much more than it is a body of knowledge. CARL SAGAN (1934-1996), *Broca's Brain*, 1979.
692. The business of skepticism is to be dangerous. Skepticism challenges established institutions. If we each everybody, including, say, high school students, habits of skeptical thought, they will probably not restrict their skepticism to UFO's, aspirin commercials, and 35,000-year-old channelees. Maybe they'll start asking awkward questions about economic, or social, or political, or religious institutions. Perhaps they'll challenge the opinions of those in power. Then where would we be. CARL SAGAN (1934-1996), *The Demon-Haunted World*, 1995.
693. Even the heretics and atheists, if they had profundity, turn out after a while to be forerunners of some new orthodoxy. What they rebel against is a religion alien to their nature; they are atheists only by accident, and relatively to the convention which inwardly offends them. GEORGE SANTAYANA (1863-1952), *Reason in Religion*.
694. Faith in the supernatural is a desperate wager made by man at the lowest ebb of his fortunes. GEORGE SANTAYANA (1863-1952), *Reason in Science*, 1906.
695. The enlightenment common to young wits and worm-eaten old satirists, who plume themselves on detecting the scientific ineptitude or religion – something which the blindest half see – is not nearly enlightened enough: it points to notorious facts incompatible with religious tenets literally taken, but it leaves unexplored the habits of thought from which those tenets sprang, their original meaning, and their true function. Such studies would bring the skeptic face to face with the mystery and pathos of mortal existence. They would make him understand why religion is so profoundly moving and in a sense so profoundly just. GEORGE SANTAYANA (1863-1952), *Reason in Religion*, 1905.
696. Skepticism is a discipline fit to purify the mind of prejudice and render it all the more apt, when the time comes, to believe and to act wisely. GEORGE SANTAYANA (1863-1952), *Skepticism and Animal Faith*, 1923.
697. The fact of having been born is a very bad augury for immortality. GEORGE SANTAYANA (1863-1952), *Reason in Religion*, 1905.
698. The brute necessity of believing something so long as life exists does not justify any belief in particular. GEORGE SANTAYANA (1863-1952), *Skepticism and Animal Faith*, 1923.
699. Science is nothing but developed perception, interpreted intent, common sense rounded out and minutely articulated. GEORGE SANTAYANA (1863-1952), *The Life of Reason*, 1905-6.
700. Good people are good because they've come to wisdom through failure. WILLIAM SAROYAN.
701. Absolutism is a deadly serious business. If even a hair's breadth of space is left around the edges of a theory, doubt may be able to squeeze through. The citizen may then begin to smile and wonder whether the intellectual justifications of power are really nonsense. JOHN RALSTON SAUL, *The Doubter's Companion*, 1994.

702. It is better to be satisfied with probabilities than to demand impossibilities and starve. FRIEDRICH SCHILLER (1759-1805).
703. The majority of thinkers agree that one of the important lessons of history is that in science there are no absolute guarantees. No matter how well founded a given belief may be, its truth cannot be established with ultimate certainty. GEORGE N. SCHLESINGER, *The Range of Epistemic Logic*, 1985.
704. The thesis of the ever-present possibility of error is called fallibilism... The fallibilist may concede knowledge but not certainty. GEORGE N. SCHLESINGER, *The Range of Epistemic Logic*, 1985.
705. Religion is the masterpiece of the art of animal training, for it trains people as to how they shall think. ARTHUR SCHOPENHAUER (1783-1860), *Parerga and Paralipomena*, 1851.
706. To free a man of error is to give, not to take away. Knowledge that a thing is false is a truth. ARTHUR SCHOPENHAUER (1783-1860), *On Logic and Dialectic*.
707. For, as you know, religions are like glow-worms; they shine only when it's dark. A certain amount of general ignorance is the condition of all religions, the element in which alone they can exist. ARTHUR SCHOPENHAUER (1783-1860), *Parerga and Paralipomena*, 1851.
708. For, as you know, religions are like glow-worms; they shine only when it's dark. A certain amount of general ignorance is the condition of all religions, the element in which alone they can exist. ARTHUR SCHOPENHAUER (1783-1860), *Parerga and Paralipomena*, 1951.
709. I realized that regardless of persons or topics of discussion the same tricks and dodges recurred again and again and could easily be recognized. ARTHUR SCHOPENHAUER (1783-1860), *On Logic and Dialectic*.
710. I always thought it better to allow myself to doubt before I decided, than to expose myself to the misery after I had decided, of doubting whether I had decided rightly and justly. JOHN SCOTT, LORD ELDON (1751-1838), in *Life of Lord Eldon* (Horis Twiss, ed.), 1844.
711. Yet a man who uses an imaginary map, thinking that it is a true one, is likely to be worse off than someone with no map at all; for he will fail to inquire whenever he can, to observe every detail on his way, and to search continuously with all his senses and his intelligence for indications of where he should go. E. F. SCHUMACHER (1911-177), *Small is Beautiful*, 1973.
712. Psychological research confirms a blindness to the power of evidence that supports personally distasteful conclusions. The phenomenon of being more alert to evidence that supports a welcomed conclusion and less receptive to the presence and power of counterevidence has been described by psychologists as "the fallacy of positive instances." ZACHERY SEECH, *Open Minds and Everyday Reasoning*, 1993.
713. When trying to consider fairly the weight of "unfriendly" evidence, you can make a serious effort to "put yourself in the other's shoes" or in the other's position. To take on the other person's perspective, you might start by focusing on the other's feelings as if they were yours. ZACHERY SEECH, *Open Minds and Everyday Reasoning*, 1993.
714. Rhetoric without logic is like a tree without leaves, blossoms but no root; yet more are taken with rhetoric than logic, because they are caught with fine expressions when they understand not reason. JOHN SELDEN (1584-1754), *Table-Talk*, 1689.

715. Every generation, no matter how paltry its character, thinks itself much wiser than the one immediately preceding it, let alone those that are more remote. WILLIAM SHAKESPEARE (1564-1616).
716. The fact that a believer is happier than a skeptic is no more to the point than the fact that a drunken man is happier than a sober one. The happiness of credulity is a cheap and dangerous quality of happiness, and by no means a necessity of life. GEORGE BERNARD SHAW (1856-1950), *Androcles and the Lion*, 1912.
717. Men are wise in proportion, not to their experience, but to their capacity for experience. GEORGE BERNARD SHAW (1856-1950), *Man And Superman*.
718. The power of accurate observation is commonly called cynicism by those who have not got it. GEORGE BERNARD SHAW (1856-1950).
719. Science is not and never has been part of an ideological culture. Indeed, the spirit in which science works is alien to ideology... In so far as the social sciences have been genuinely intellectual pursuits, which have their own rules of judgment and observation and are open to criticism and revision, they are antipathetic to ideology. EDWARD SHILS, "The Concept and Function of Ideology," *International Encyclopedia of the Social Sciences*, 1968.
720. Human thinking powers are very modest when compared with the complexities of the environment in which humans live. Faced with complexity and uncertainty, lacking the wits to optimize, they must be content to satisfice – to find 'good enough' solutions to their problems and 'good enough' courses of action. HERBERT A. SIMONS, *Models of Thought*, 1979.
721. [T]he misuses of language to which all of us are prone: a tendency to compartmentalize ongoing processes linguistically and then assume that the dichotomies and trichotomies we establish exist in the real world; a tendency to assume that all members of a category are alike because they have one name; a tendency to treat inferences and value judgments as though they objectively described events, rather than as our own interpretations of those events. HERBERT W. SIMONS, *Persuasion: Understanding, Practice, and Analysis*, 1976.
722. We learn from failure much more than success. We often discover what will do, by finding out what will not. SAMUEL SMILES (1812-1904), *Self-Help*.
723. Science is the great antidote to the science of enthusiasm and superstition. ADAM SMITH (1723-1790), *Wealth of Nations*, 1776.
724. The machines that are first invented to perform any particular movement are always the most complex, and succeeding artists generally discover that with fewer wheels, with fewer principles of motion than had originally been employed, the same effects may be more easily produced. The first philosophic systems, in the same manner, are always the most complex. ADAM SMITH (1723-1790), *Essays On The Principles Which Lead And Direct Philosophical Inquiries*, 1880.
725. Critical thinkers are flexible – they can tolerate ambiguity and uncertainty. In short, critical thinkers are open-minded. Being a critical thinker often requires avoiding neat compartmentalizations of the world, refraining from black-and-white analyses of complex questions. RANDOLPH A. SMITH, *Challenging Your Preconceptions*, 1995.
726. A good critical thinker is able to distinguish empirical evidence from opinion-based ideas. Critical thinkers do not draw conclusions from evidence that will not support those conclusions. RANDOLPH A. SMITH, *Challenging Your Preconceptions*, 1995.

727. Results are termed *significant* when statistical tests indicate that it unlikely that the results occurred by change. In this situation, *significance* is not synonymous with *important*. The importance of results deals with their practical nature – can they be applied meaningfully to some situation? RANDOLPH A. SMITH, *Challenging Your Preconceptions*, 1995.
728. Research is fundamentally a state of mind involving continual reexamination of doctrines and axioms upon which current thought and action are based. It is, therefore, critical of existing practices. THEOBALD SMITH, *American Journal of Medical Science*, vol. 178, 1929.
729. The intellectual life of the whole of western society is increasingly being split into two polar groups... Literary intellectuals at one pole – at the other scientists. Between the two a gulf of mutual incomprehension. C. P. SNOW (1905-1980), *The Two Cultures and the Scientific Revolution*, 1959.
730. In proportion as we love truth more and victory less, we shall become anxious to know what it is that leads our opponents to think as they do. HERBERT SPENCER (1820-1903), *First Principles*, 1862.
731. There is a principle which is a bar against all information, which is a proof against all argument, and which cannot fail to keep a man in everlasting ignorance -- that principle is condemnation before investigation. HERBERT SPENCER (1820-1903), *Social Static's*, 1850.
732. To the mass of people nothing is so costly as thought. The fact that, taking the world over, ninety-nine out of a hundred accept the creed to which they were born, exemplifies their mental attitude toward things at large. HERBERT SPENCER (1820-1903), *The Principles of Ethics*, 1892.
733. There is no need to show at length that Nature has no particular goal in view, and final causes are mere human figments. BENEDICT De SPINOZA (1634-1677), *Ethics*, 1677.
734. Whenever ... anything in nature seems to be ridiculous, absurd, or evil it is because we have but a partial knowledge of things, and are in the main ignorant of the order and coherence of nature as a whole, and because we want everything to be so arranged according to the dictates of our own reason; although, in fact, what our reason pronounces bad is not bad as regards the order and laws of universal nature, but only as regards the laws of our own nature taken separately. BENEDICT SPINOZA (1634-1677), *Theologico-Political Treatise*, 1670.
735. Knowledge consists in understanding the evidence that establishes a fact, not in the belief that it is a fact. CHARLES T. SPRADLING, *Liberty and the Great Libertarians*.
736. In an analogy two or more things, people, events, or other phenomena are observed to be alike in several respects; and the conclusion is reached that they are also alike in a further respect that has not yet been observed. Analogical argument requires literal analogy -- the comparison of things, events, or ideas that are fundamentally similar. SALLY DeWITT SPURGIN, *The Power to Persuade: A Rhetoric & Reader for Argumentative Writing*, 1989.
737. An argument from analogy always will be fallacious if it purports to guarantee the conclusion, or if it reasons from a metaphorical comparison instead of from a literal one. SALLY DeWITT SPURGIN, *The Power to Persuade: A Rhetoric & Reader for Argumentative Writing*, 1989.
738. The relationship in a causal argument is always chronological (causes must precede effects), but it must be logical as well. It always rains after I wash my car, I cannot assume that it rains *because* I have washed my car. [This is] the fallacy of reasoning known as *post hoc ergo propter hoc* ("after this, therefore because of this"). The term is frequently called *post hoc* or "false cause." SALLY DeWITT SPURGIN, *The Power to Persuade: A Rhetoric & Reader for Argumentative Writing*, 1989.

739. Whereas in an inductive argument the conclusion moves beyond the premises, in a deductive argument the conclusion is drawn out of the premises. If a deductive argument is logically constructed and its premises are true, its conclusion is certain -- with a certainty that induction never presumes. SALLY DeWITT SPURGIN, *The Power To Persuade: A Rhetoric & Reader for Argumentative Writing*, 1989.
740. There has been growing up in men's minds, dominated as they are by science, a new imaginative picture of the world. The world, according to this new picture, is purposeless, senseless, meaningless. Nature is nothing but matter in motion. ... If the scheme of things is purposeless and meaningless, then the life of man is purposeless and meaningless, too. W. T. STACE, "Man Against Darkness," in *The Borzoi College Reader* (Muscatine & Griffith), 1966.
741. The falsifiability criterion states that, for a theory to be useful, the predictions drawn from it must be specific. The theory must go out on a limb, because in telling us what *should* happen, the theory must also imply that certain things will not happen. If these latter things do happen then we have a clear signal that something is wrong with the theory: it may need to be modified, or we may need to look for an entirely new theory. KEITH E. STANOVICH, *How To Think Straight about Psychology*, 1998.
742. Those confidently predicting the demise of religion are misreading superficial indicators as basic, and are incorrectly limiting their conception of religion to a specific set of contemporary organizations. We agree that the future of liberal-Protestantism, for example, seems utterly grim. Indeed, all organizations in the Christian-Judaic tradition may be fated to wither away. But we not several potent signs that, even should all these religious bodies crumble, human commitment to supernaturalism will remain. R. STARK & W. S. BAINBRIDGE, "Secularization and Cult Formation in the Jazz Age," *Journal for the Scientific Study of Religion*, 1981.
743. Enthusiasm is not necessarily an enemy of thinking clearly, whilst it is indispensable for achieving great and difficult ends. The danger arises from the feeling that the passionateness of a belief provides any guarantee of its truth. Our safeguard lies in an ability to ask the question: 'How did I come to believe this?' L. SUSAN STEBBING (1895-1943), *Thinking to Some Purpose*.
744. Language is the main instrument of man's refusal to accept the world as it is. GEORGE STEINER, *After Babel*, 1975.
745. All religions are founded on the fear of the many and the cleverness of the few. STENDHAL (1783-1842).
746. Wise people know what they know and what they do not know as well as the limits of what can be known and what cannot be. They apply the processes of intellect in a way that eschews automatization. R. STERNBERG, *Wisdom*, 1990.
747. It is in the nature of an hypothesis, when once a man has conceived it, that it assimilates everything to itself as proper nourishment, and, from the first moment of begetting it, it generally grows the stronger by everything you see, hear, read, or understand. LAURENCE STERNE (1713-1768), *Tristram Shandy*.
748. The desire of knowledge, like the thirst of riches, increases ever with the acquisition of it. LAWRENCE STERNE (1713-1768), *Tristram Shandy*, 1760.
749. Heat is in proportion to the want of true knowledge. LAWRENCE STERNE (1713-1768), *Tristram Shandy*, 1760.
750. It's an interesting view of atheism, as a sort of crutch for those who can't stand the reality of God... TOM STOPPARD, *Jumpers*, 1972.



751. [A]nalogies are the weakest form of support for formal arguments, and the strongest form of support for informal arguments. ... Analogies persuade by claiming that if something is true in one situation, it must be true in others as well. Since analogies are usually used to compare completely different phenomena, the end result is a weak “formal” link between the two things. ... As a consumer of persuasion it is good to recognize the weaknesses of analogies. As a producer, it is good to recognize their power because most of the time they help “uninitiated” audiences understand complicated concepts in terms of the more simple concepts that they already understand. W. F. STRONG, et. al., *Persuasion: Strategies for Public Influence*, 1996.
752. For it must be remembered that what scientific men mean by truth is, in the last resort, convenience. Scientific men are pragmatists in practice, whatever they may think they are in theory. J. W. N. SULLIVAN, *The Limitations of Science*, 1933.
753. A man should never be ashamed to own he has been in the wrong, which is saying, in other words, that he is wiser today than he was yesterday. JONATHAN SWIFT (1667-1745), *Thoughts On Various Subjects*, 1711.
754. Mysticism joins and unites; reason divides and separates. People crave belonging more than understanding. Hence, the prominent role of mysticism, and the limited role of reason, in human affairs. THOMAS SZASZ, *The Untamed Tongue*, 1990.
755. Discovery consists of seeing what everybody has seen and thinking what nobody has thought. ALBERT SZENT-GYORGYI (1893-1986), *The Scientist Speculates*.



756. If you shut your door to all errors truth will be shut out. RABINDRANATH TAGORE (1861-1941), *Stray Birds*, 1916.
757. A...rhetorical purpose of protest slogans, political slogans, catch phrases, and graffiti is to unify, to solidify a group into a community of interests and endeavors.....not only have the protesters a sense of solidarity, but also provided them with a sense of identity. This need for a sense of identity is echoed in the plaintive cry of one graffitist, “I am somebody! I am somebody! WILLIAM E. TANNER & J. DEAN BISHOP, *Rhetoric and Change*, 1985.
758. Antithesis is the juxtaposition of opposing ideas, usually in parallel structure. The rhetorical effect of antitheses is that it forces an adversary to view the issues clearly, in terms of opposing principles. WILLIAM E. TANNER & J. DEAN BISHOP, *Rhetoric and Change*, 1985.
759. It is morally as bad not to care whether a thing is true or not, so long as it makes you feel good, as it not to care how you got your money as long as you have got it. EDWIN WAY TEALE (1889-1980), *Circle Of The Seasons*, 1953.
760. You can prove almost anything with the evidence of a small enough segment of time. How often, in any search for truth, the answer of the minute is positive, the answer of the hour is qualified, and the answers of the year contradictory. EDWIN WAY TEALE (1889-1980), *Circle Of The Seasons*, 1953.
761. There lives more faith in honest doubt, believe me, than in half the creeds. ALFRED, LORD TENNYSON (1809-1892), *In Memoriam*, 1850.

762. True wisdom consists not in seeing what is immediately before our eyes, but in foreseeing what is to come. **TERENCE (190-158 BC), *Adelphi*.**
763. Thiry. All religious notions are uniformly founded on authority; all the religious of the world forbid examination, and are not disposed that men should reason upon them. **PAUL HENRI THIRY (1723-1789).**
764. We do not as a matter of fact lead our lives, make our decisions, and reach our goals in everyday life either statistically or scientifically. We live by inference. I am, let us say, your guest. You do not know, you cannot determine scientifically, that I will not steal your money or your spoons. But inferentially I will not, and inferentially you have me as a guest. **W. I. THOMAS (1863-1947), in *Social Behavior and Personality* (E. H. Volkart, ed), 1951.**
765. Why level downward to our dullest perception always, and praise that as common sense? The commonest sense is the sense of men asleep, which they express by snoring. **HENRY DAVID THOREAU (1817-1862), *Walden*, 1854.**
766. No way of thinking or doing, however ancient, can be trusted without proof. What everybody echoes or in silence passes by as true today may turn out to be falsehood tomorrow, mere smoke of opinion... **HENRY DAVID THOREAU (1817-1862), *Walden*, 1854.**
767. An argument by analogy is not necessarily dishonest or crooked, although it is a dangerous one always requiring careful examination. To an extraordinary extent, intelligent people become convinced of highly improbable things because they have heard them supported by analogies whose unsoundness would be apparent to an imbecile. **R. H. THOULESS, 1932.**
768. There is hardly a word in the religious language, both theological and popular, which is subject to more misunderstandings, distortions and questionable definitions than the word "faith." It belongs to those terms which need healing before they can be used for the healing of men. Today the term "faith" is more productive of disease than of health. It confuses, misleads, creates alternatively skepticism and fanaticism, intellectual resistance and emotional surrender. **PAUL TILLICH (1886-1965), *Dynamics of Faith*, 1957.**
769. Beware of substituting reading for thinking. Reading about the thoughts of others is not the same as having thoughts of your own .... The great thinkers inspire, provoke, confirm, and in other ways help you to do your own thinking. But to think you must at some point lay down the book and strike out on your own. **GLENN TINDER, *Political Thinking*, 1986.**
770. The very function of a paradox is to keep thought alive... A paradox is true not in itself but in the understanding it impels us to seek. **GLENN TINDER, *Political Thinking*, 1986.**
771. A thinking person is exceedingly vulnerable. Such a person must appear before others, not behind the armor and shield of books read and ideas formulated by others, but in the nakedness of his own thoughts and doubts. **GLENN TINDER, *Political Thinking*, 1986.**
772. What is implied by the standards of logical consistency and factual accuracy is that nothing be suppressed and nothing ignored. **GLENN TINDER, *Political Thinking*, 1986.**
773. As a rule people fear truth. Each truth we discover in nature or social life destroys the crutches on which we used to lean. **ERNST TOLLER (1893-1939).**

774. The basis of fascism is a blind belief and a contempt for reason. Fascism exploits the fear of reason which lives secretly in the conscious and subconscious minds of many people. Reason means facing life and facts. ERNST TOLLER (1883-1939).
775. Freethinkers are those who are willing to use their minds without prejudice or without fearing to understand things that clash with their own customs, privileges, or beliefs. This state of mind is not common, but it is essential for right thinking; where it is absent, discussion is apt to become worse than useless. LEO TOLSTOY (1828-1910), *War and Peace*, 1862.
776. I know that most men, including those at ease with problems of the greatest complexity, can seldom accept even the simplest and most obvious truth if it be such as would oblige them to admit the falsity of conclusions which they have delighted in explaining to colleagues, which they have proudly taught to others, and which they have woven, thread by thread, into the fabric of their lives. LEO TOLSTOY (1828-1910).
777. [Argumentative reasoning] is concerned less with how people think than with how they share their ideas and thoughts in situations that raise the question of whether those ideas are worth sharing. It is a collective and continuing human transaction, in which we present ideas or claims to particular sets of people with particular situations or contexts and offer the appropriate kinds of “reasons” in their support. STEPHEN TOULMIN, RICHARD RICKE, & ALLAN JANIK, *An Introduction To Reasoning*, 1979.
778. No scientific theory can modify the experience it explains. The sun still looks red at sunset, although we know that it is not really red; physics may explain why a stick looks bent [in the water], when it is really straight, but it cannot stop the stick looking bent. STEPHEN TOULMAN, *The Place of Reason In Ethics*, 1968.
779. Enthusiasm and deep conviction are necessary if men [and women] are to explore all the possibilities of any new idea, and later experience can be relied on either to conform or to moderate the initial claims – for science flourishes on a double program of speculative liberty and unsparing criticism. STEPHEN TOULMIN & JUNE GOODFIELD, quoted in *The Elements of Social Scientific Thinking* [Kenneth R. Hoover], 1992.
780. All men see the same objects, but do not equally understand them. Intelligence is the tongue that discerns and tastes them. THOMAS TRAHERNE.
781. Disinterested intellectual curiosity is the life blood of real civilization. G. M. TREVELYAN (1876-1962), *English Social History*, 1942.
782. All processes of reasoning, however abstract, are participating in and influenced by feeling. WILFRED TROTTER, *The Collected Papers of Wilfred Trotter, FRS*, 1941.
783. In science, the burden of proof falls upon the claimant; and the more extraordinary a claim, the heavier is the burden of proof demanded. The true skeptic takes an agnostic position, one that says the claim is *not proved* rather than *disproved*. MARCELLO TRUZZI (1935-2003), *Zetetic Scholar*, 12-13, 1987.
784. It is wiser, I believe, to arrive at theory by way of evidence rather than the other way around...It is more rewarding, in any case, to assemble the facts first and, in the process of arranging them in narrative form, to discover a theory or a historical generalization emerging of its own accord. BARBARA TUCHMAN (1912-1989), *Practicing History*, 1981.
785. Wooden-headedness consists of assessing a situation in terms of preconceived, fixed notions while ignoring or rejecting any contrary signs. It is acting according to wish while not allowing one-self to be

confused by the facts. BARB ARA TUCHMAN (1912-1989), "An Inquiry Into The Persistence of Unwisdom In Government," *Esquire*, 1980.

786. We should be careful to get out of an experience only that wisdom that is in it – and stop there; lest we be like that cat that sits down on a hot stove lid. She will never sit down on a hot stove lid again, but also she will never sit down on a cold one anymore. MARK TWAIN (1835-1910).



787. True science teaches, above all, to doubt, and to be ignorant. MIGUEL de UNAMUNO (1864-1955), *The Tragic Sense of Life*, 1913.

788. Ever insurgent let me be / Make me more daring than devout / From sleek contentment keep me free / And fill me with a buoyant doubt. LOUIS UNTERMEYER (1885-1977).

789. That which has been believed by everyone, always and everywhere, has every chance of being false. PAUL VALERY (1871-1945), *Tel quel*, 1943.

790. There has always been a real survival value to being right; it can lead to appropriate responses in dangerous situations. Belief that we are right brings a nice warm feeling of competence. But we can easily fool ourselves into believing we are right without bothering to verify the fact. Certainty becomes its own reward. KENT B. VAN CLEVE, "The Certainty Trap," *MENSA Bulletin*, May 1987.

791. In the case of deductive syllogisms, something is asserted or assumed in a number of statements, and from the statements, the premises, there necessarily follows a conclusion. ("Necessarily" means that the conclusion *must* follow from the premises.) In this sort of argument the relation between the premises and the conclusion is such that it is impossible for the premises to be true and the conclusion false. Nowadays, arguments that have this quality are called "deductively valid." FRANS H. VAN EEMEREN, *Fundamentals of Argumentation Theory*, 1996.

792. The mere fact of diversity in human moral standards does not in principle preclude the possibility of at least some of these standards being correct and others incorrect. HENRY B. VEATCH, *Rational Man: A Modern Interpretation of Aristotelian Ethics*, 1962.

793. It becomes clear that living intelligently involves seeing things as they are and seeing oneself as one is, amid all the confusion and misrepresentations due to one's own passions and predilections and prejudices. HENRY B. VEACH, *Rational Man: A Modern Interpretation of Aristotelian Ethics*, 1962.

794. The function of our human reason and intelligence, in a moral context, is to provide a needed corrective to the oft-mistaken judgments implicit in so many of our emotions, as, for example, when we become angry when there is nothing really to be angry about, or when we set our hearts on getting something which is scarcely worth getting... HENRY B. VEACH, *Rational Man: A Modern Interpretation of Aristotelian Ethics*, 1962.

795. The outcome of any serious research can only be to make two questions grow where only one grew before. THORSTEIN VEBLEN (1857-1929), *The Place of Science in Modern Civilization*.

796. The insufferable circumstance for most humans is to be confronted with a problem, particularly involving something new, unknown and to find no answer for it. ... To counteract this threat of the unknown, an answer must be found and characteristically it is found. Unhappily it is not necessary to furnish the right answer. The first answer which promises to work will meet the requirements and

alleviate anxiety. VICTOR VICTOROFF, "The Assumptions we Live By," *General Semantics Magazine*, Autumn 1958.

797. Imagination is more robust in proportion as reasoning power is weak. GIAMBATTISTA VICO (1668-1744), *The New Science*, 1725-44.

798. Common sense is judgment without reflection, shared by an entire class, an entire nation, or the entire human race. GIAMBATTISTA VICO (1668-1744), *The New Science*, 1744.

799. You do ill if you praise, but worse if you censure, what you do not understand. LEONARDO Da VINCI (1452-1519).

800. Happy is he who has been able to learn the causes of things. VIRGIL(70-19 BC), *Georgics*

801. When one speaks to another man who doesn't understand him, and when the man who's speaking no longer understands, it's metaphysics. VOLTAIRE (1691-1778), *Candide*, 1759.

802. My interesting in believing something is not a proof of its existence. VOLTAIRE (1691-1778), "On The Thoughts of Pascal," *Philosophical Letters*, 1734.

803. The roulette player who falls victim to the gambler's fallacy believes that past spins have a bearing on future ones. ... The gambler's fallacy is an expression of the common notion that things even out. Many people believe the universe is founded on a Karma-like homeostasis that answers every yin with a yang. STUART A. VYSE, *Believing in Magic: The Psychology of Superstition*, 1997.

804. As nature abhors a vacuum, so does human nature abhor randomness. We prefer order over chaos, harmony over cacophony, and religion over the prospect of an arbitrary world. STUART A. VYSE, *Believing in Magic: The Psychology of Superstition*, 1997.

[H]uman beings are extremely sensitive to coincidence. We are fascinated and bewildered by events that come together despite seemingly impossible odds. Their very improbability leads us to search for their deeper significance. STUART A. VYSE, *Believing in Magic: The Psychology of Superstition*, 1997.



805. In starkest form, the question about the evolutionary fate of religion is a question about the fate of supernaturalism. ... But as a cultural trait, belief in supernatural powers is doomed to die out, all over the world, as a result of the increasing adequacy and diffusion of scientific knowledge and of the realization by secular faiths that supernatural belief is not necessary to the effective use of ritual. The question of whether such a denouement will be good or bad for humanity is irrelevant to the prediction: the process is inevitable. A. F. C. WALLACE, *Religion: An Anthropological View*, 1966.

806. Most of the political opinions of men are the result, not of reason tested by experience but of unconscious or half-conscious inference fixed by habit. GRAHAM WALLIS (1858-1932), *Human Nature in Politics*.

807. It ain't so much the things we don't know that gets us into trouble. It's the things we know that ain't so. ARTEMUS WARD (1834-1867).

808. What science has said, in sum, is this: We do not, and in all probability cannot, know whether God exists. Nothing that we do know suggests that he does, and in all the arguments which claim to prove

his existence are found to be without logical meaning. ... If, the scientists would say, you believe in God, you must do so on purely emotional grounds, without basis in logic or fact. ALAN WATTS (1913-1973), *The Wisdom of Insecurity*, 1951.

809. It is of the essence of scientific honesty that you do not pretend to know what you do not know, and the essence of scientific method that you do not employ hypotheses which cannot be tested. ALAN WATTS (1915-1973), *The Wisdom of Insecurity*, 1951.
810. The most obvious truth about rhetoric is that its object is the whole man. It presents its arguments first to the rational part of man, because rhetorical discourses, if they are honestly conceived, always have a basis in reasoning. Logical argument is the plot, as it were, of any speech or composition that is designed to persuade. RICHARD M. WEAVER (1910-1963), *Language is Sermonic*, 1970.
811. The argument from circumstance...merely reads the circumstances – the “facts standing around” – and accepts them as coercive, or allows them to dictate the decision... The expression “In view of the situation, what else are you going to do?” constitutes a sort of proposition-form for this type of argument. Such argument savors of urgency rather than that of perspicacity; and seems to be preferred by those who are easily impressed by existing tangibles. RICHARD M. WEAVER (1910-1973), *The Ethics of Rhetoric*, 1953.
812. Today when the average citizen says “It is a fact” or says that he “knows the facts of the case,” he means that he has the kind of knowledge to which all other knowledge must defer. Possibly it should be pointed out that his “facts” are frequently not facts at all in the etymological sense; often they will be deductions several steps removed from simply factual data. RICHARD M. WEAVER (1910-1973), *The Ethics of Rhetoric*, 1953.
813. What we must vigorously oppose is the view that one may be “scientifically” contented with the conventional self-evidentness of very widely accepted value-judgments. The specific function of science...is just the opposite: namely, to ask questions about these things which convention makes self-evident. MAX WEBER (1864-1920), in *Max Weber on the Methodology of the Social Sciences*, 1949.
814. The cause cannot necessitate the effect. If it did, the effect would exist when the cause did. What is normally termed a cause is only an antecedent condition. PAUL WEISS, in *Determination and Freedom* (Sidney Hook), 1958.
815. Red Herring: introducing an irrelevant or secondary subject and there by diverting attention from the main subject. Usually the red herring is an issue about which people have strong opinions, so that on one notices how their attention is being diverted. In a discussion of the relative safety of different makes of cars, for instance, the issue of which cars are American made is a red herring. ANTHONY WESTON, *A Rulebook For Arguments*, 2000.
816. Persuasive Definition: defining a term in a way that appears to be straightforward but that in fact is loaded....for example, defining “conservative” as “someone with a realistic view of human limits.” ANTHONY WESTON, *A Rulebook For Arguments*, 2000.
817. Begging The Question; implicitly using your conclusion as a premise. “God exists because it says so in the Bible, which I know is true because God wrote it, after all!.... If God wrote the Bible, God exists. Thus the argument *assumes* just what it is trying to prove. ANTHONY WESTON, *A Rulebook For Arguments*, 2000.
818. Could it be brought home to people that there is no absolute standard in morality, they would perhaps be somewhat more tolerant in their judgments, and more apt to listen to the voice of reason. EDWARD WESTERMARCK (1862-1939), *Origin And Development Of Moral Ideas*, 1906.

819. Strictly speaking, inconsistency is the maintaining *at the same time* two contradictory propositions; whether expressed in language, or implied in sentiments or conduct. As, e.g., if the same person censures and abhors oppression, yet practices it towards others... BISHOP RICHARD WHATELY (1787-1863), *Rhetoric*.
820. [I]t is a very fair ground for disparaging anyone's judgment, if he maintains any doctrine or system, *avowedly* for the sake of consistency. That must always be a bad reason. If the system, etc., it *right*, you should pursue it because it is right, and not *because* you have pursued it hitherto; if it is wrong, your having once committed a fault is a poor reason to give for persisting in it. BISHOP RICHARD WHATELY (1787-1863), *Rhetoric*.
821. Clearly it is not reason that has failed. What has failed -- as it has always failed -- is the attempt to achieve certainty, to reach an absolute, to find the course of human events to a final end....It is not reason that has promised to eliminate risk in human undertakings; it is the emotional needs of men. ALLEN WHEELIS, *The Quest For Identity*, 1958.
822. It is a test of true theories not only to account for but to predict phenomena. WILLIAM WHEWELL (1819-1892), *Philosophy in the Inductive Sciences*, 1840.
823. The goal of rhetoric ... is the power to persuade others, to reduce them to one's will. The goal of the dialectic is the opposite of persuasion: it is to be refuted, humiliated, corrected. That means that rhetoric naturally treats others as means to an end, while dialectic treats them as ends in themselves. Rhetoric persuades another not by refuting but by flattering him, by appealing to what pleases rather than to what is best for him. ... [But dialectic] is not a competition to see who can reduce the other to his will, it is a process of mutual discovery and mutual refutation. JAMES BOYD WHITE, *When Words Lose Their Meaning*, 1984.
824. In formal logic, a contradiction is the signal of a defeat: but in the evolution of real knowledge it marks the first step in progress towards a victory. This is the one great reason for the utmost toleration of variety of opinion. ALFRED NORTH WHITEHEAD (1861-1947), *Science in the Modern World*, 1925.
825. The true method of discovery is like the flight of an aeroplane. It starts from the ground of particular observation; it makes a flight in the thin air of imaginative generalization; and it again lands for renewed observation rendered acute by rational interpretation. ALFRED NORTH WHITEHEAD (1861-1947), 1929.
826. Have you learned lessons only of those who admired you, and were tender with you, and stood beside you? Have you not learned great lessons from those who rejected you, and braced themselves against you, or disputed the passage with you? WALT WHITMAN (1819-1892).
827. An idea that is not dangerous is unworthy of being called an idea at all. OSCAR WILDE (1854-1900), *The Critic As Artist*, 1890.
828. Inference is notoriously unreliable, as are eyewitnesses, memories of old men, judgments of mothers about first children, letters written for publication, and garbage collectors. ROBIN W. WINKS, *The Historian As Detective*, 1969.
829. Assumptions are not facts, they are inferences that we act on. In scientific terms, a hypothesis is an assumption that something might be true but it remains a hypothesis until it is proven. It is merely a basis for reasoning, a position to start from. DENISE WINN, *The Manipulated Mind: Brainwashing, Conditioning and Indoctrination*, 2000.

830. If beliefs and assumptions are not called into question or tested, we are unprotected against the upheaval that accompanies their disintegration if they do become subjected to attack. DENISE WINN, *The Manipulated Mind: Brainwashing, Conditioning and Indoctrination*, 2000.
831. Philosophy aims at the logical clarification of thoughts. Philosophy is not a body of doctrine but an activity. A philosophical work consists essentially of elucidations. Philosophy does not result in philosophical propositions', but rather in the clarification of propositions. Without philosophy thoughts are, as it were, cloudy and indistinct: its task is to make them clear and to give them sharp boundaries. LUDWIG WITTGENSTEIN (1889-1951), *Tractatus Logico-Philosophicus*.
832. A necessity for one thing to happen because another has happened does not exist. There is only logical necessity. LUDWIG WITTGENSTEIN (1889-1951), *Tractatus Logico-Philosophicus*.
833. In the hands of the unsophisticated, or of True Believers who would wish to reshape the past for their own purposes, historical relativism is a dangerous weapon. C. VANN WOODWARD, "On Believing What One Reads: The Dangers of Popular Revisionism," in *The Historian As Detective* (Robin W. Winks, ed.), 1969.
834. The historian must keep open the channels for disagreement and reinterpretation, but his professional training, if not his common sense, will also remind him that revisionism has natural limits – limits imposed by evidence. C. VANN WOODWARD (1908-1999), "On Believing What One Reads: The Dangers of Popular Revisionism," in *The Historian As Detective* (Robin W. Winks, ed.), 1969.
835. The most interesting characteristic of valid analytic argument is that there is no way to deny the force or potency of their claims if you accept the soundness of their premises. GARY C. WOODWARD & ROBERT E. DENTON, JR., *Persuasion and Influence In American Life*, 1996.
836. Generally speaking, the force of an argument based on a claim of judgment will not be as great as that of a reasoning sequence in support of a claim of fact. Facts hold the possibility of being proven true or false. In contrast, judgments express priorities, preferences, or values that differ from individual to individual. GARY C. WOODWARD & ROBERT E. DENTON, JR., *Persuasion and Influence in American Life*, 1996.

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837. If cows and horses or lions had hands, or could draw with their hands and make statues as men to, horses would draw likeness of the gods similar to horses, cows to cows, and they would create statues in the same form as they themselves each had. XENOPHANES (570-475 B.C.), *Fragment 15*.

## Appendix

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