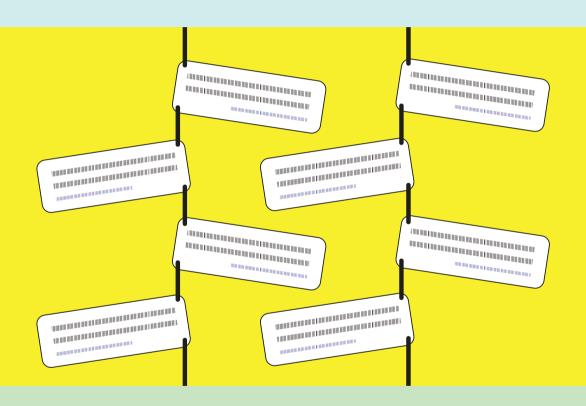
Edited by Konstantin K. Likharev

# ESSENTIAL QUOTES



## FOR SCIENTISTS AND ENGINEERS



#### Essential Quotes for Scientists and Engineers

Konstantin K. Likharev Editor

### Essential Quotes for Scientists and Engineers



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It is a good thing for an uneducated man to read books of quotations.

—Winston Churchill, 1930

#### **Preface**

For following Sir Winston's advice taken for the epigraph, there are many quote collections available, both in print and online—see, e.g., the list of references at the end of this publication. However, I could not find a collection that would be, to my taste, reasonably comprehensive, at the same time being sufficiently refined for a typical busy member of the science/engineering community, to which I belong. This is why I dare to offer this community (including students of STEM disciplines) a modest set of less than 2500 my personal favorites, accumulated over nearly a decade of bedtime reading.

These quotes (on quite a few topics, not just science and engineering per se) have been selected for either their importance for the community, or depth of thought, or wit—or all of the above. Any selection implies a certain bias, but this collection still includes different perspectives—in my humble view, all non-trivial—on quite a few debatable issues.

To make consecutive reading of the quotes more engaging, the entries are not only grouped into topical sections, but also thematically ordered inside each section, forming quasi-continuous narrative threads. The unavoidable twists and turns and (less frequent) breaks of the threads are marked with three-asterisk lines.

The text and the authorship of each quote have been carefully verified. If the time of its first publication (sometimes posthumous) could be established, it is given after the author's name; if not, some idea of its timing may be obtained from the years of author's life, listed in the *Author Index*, and also from my footnote comments. Since most of these comments address the authorship and timing issues, they may be safely ignored by the reader interested only in the quote contents.

South Setauket, NY, USA

Konstantin K. Likharev

<sup>&</sup>lt;sup>1</sup>An entry was included into the final set only if it had been found either in the original publication, or in at least two reliable quote collections. (Of the online sources I had explored, I held only *Libquotes*, *Quote Investigator*, and *Wikiquotes* in this category).

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#### **Primer: On Quotations**



A short saying often contains much wisdom. -Sophocles, fifth century BC I quote others only in order to express myself better. -Michel de Montaigne, 1595 The devil can cite Scripture for his purpose. -William Shakespeare, 1596 The next best thing to being witty oneself, is to be able to quote another's wit.<sup>1</sup> —Christian Nestell Bovee, 1862 When reading a scholarly critic, one profits more from his quotations than from his comments. -W. H. Auden, 1962 That's the point of quotations, you know: one can use another's words to be insulting. —Amanda Cross, 1971 Quotation, n. The act of repeating erroneously the words of another. -Ambrose Bierce, 1911 Misquotation is, in fact, the pride and privilege of the learned. -Hesketh Pearson, 1934

<sup>&</sup>lt;sup>1</sup>Of several later paraphrases of this quip, perhaps the most popular is one by W. Somerset Maugham: "The ability to quote is a serviceable substitute for wit".

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Primer: On Quotations

As many people, so many pronouncements.  $-Terence, \sim 160 \text{ BC}$  Quotation confesses inferiority.  $-Ralph \ Waldo \ Emerson, 1876$  I always have a quotation for everything – it saves original thinking.  $-Dorothy \ L. \ Sayers, 1932$ 

A witty saying proves nothing.

-Voltaire, 1767

<sup>&</sup>lt;sup>2</sup>The original Latin sounds even better: "Quot homines, tot sententiae".

#### On Discoveries, Problems, and Solutions



All truths are easy to understand once they are discovered; the point is to discover them.
—Galileo Galilei, 1632
The more original a discovery, the more obvious it seems afterwards.
—Arthur Koestler, 1970
The problem is not so much to see what nobody has yet seen, as to think what nobody has yet thought.
—Arthur Schopenhauer, 1851 <sup>1</sup>
It isn't that they can't see the solution. It is that they can't see the problem.
—G. К. Chesterton, 1935
To see what is in front of one's nose needs a constant struggle.
—George Orwell, 1946
There is no regular procedure, no logical system of discovery, no simple, continuous development.
—Gerald Holton, 1973
There are many rules for choosing good solutions, but there are no rules for selecting good rules.
—Anonymous
***
It requires a very unusual mind to undertake the analysis of the obvious.
—Alfred North Whitehead, 1925
Talent hits a target no one else can hit; genius hits a target no one else can see.
—Arthur Schopenhauer, 1844

<sup>&</sup>lt;sup>1</sup>Frequently misattributed to Albert Szent-Györgyi, who just quoted it in 1957.

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In every work of genius we recognize our own rejected thoughts; they come back to us with a certain alienated majesty.

-Ralph Waldo Emerson, 1841

From an individual exceptional man alone is any great addition to be expected to a sum of original conceptions. Who could imagine Faraday as cooperating!?

—Theodore William Richards, 1902

One of the greatest pains to human nature is the pain of a new idea.

-Walter Bagehot, 1884

The human likes a strange idea as little as the body likes a strange protein, and it resists it with a similar energy.

-Wilfred Trotter, 1941<sup>2</sup>

Don't worry about people stealing an idea. If it's original, you will have to ram it down their throats.

-Howard H. Aiken, 1987

We don't believe anything we don't want to believe.

—Theodore Sturgeon, 1953

It takes years to drive an idea through a quarter-inch of human skull.

—Charles F. Kettering, 1961

A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it.

—Max Planck, 1950<sup>3</sup>

Whenever a new and startling fact in brought to the light in science, people first say, 'it is not true', then 'it is contrary to religion', and lastly, 'everybody knew that before'.

-Louis Agassiz<sup>4</sup>

\*\*\*

An ingenious conjecture greatly shortens the road.

-Gottfried Leibniz, 1685

Intuition isn't the enemy, but the ally, of reason.

—John Kord Lagemann, 1955

<sup>&</sup>lt;sup>2</sup>A later paraphrase of this quote by P. B. Medawar is even more popular.

<sup>&</sup>lt;sup>3</sup>A popular shorter (anonymous?) paraphrase of this aphorism is: "Science advances one funeral at a time".

<sup>&</sup>lt;sup>4</sup>As quoted in 1863 by Charles Lyell. This famous maxim, possibly based on an earlier (circa 1819) line by Arthur Schopenhauer, was paraphrased later by William James (in 1907), W. I. B. Beveridge (in 1955), J. B. S. Haldane (in 1963), Arthur C. Clarke (in 1968), Dorothy Maud Wrinch, and probably many others.

Every great advance in science had issued from a new audacity of imagination.

—John Dewey, 1929

The scientist, if he is to be more than a plodding gatherer of bits of information, needs to exercise an active imagination.

-Linus Pauling, 1943

Imagination comes first in both artistic and scientific creations, but in science there is only one answer and that has to be correct.

-James Watson, 1987

Every now and then, a man's mind is stretched by a new idea or sensation, and never shrinks to its former dimensions.

-Oliver Wendell Holmes Sr., 1858

Lack of money is no obstacle. Lack of an idea is an obstacle.

-Ken Hakuta, 1988

Be less curious about people and more curious about ideas.

-Marie Curie<sup>5</sup>

If you want to have good ideas you mush have many ideas. Most of them will be wrong, and what you have to learn is which ones to throw away.

—Linus Pauling, 1995

There are well-dressed foolish ideas - just as there are well-dressed fools.

-Nicolas Chamfort<sup>6</sup>

For an idea ever to be fashionable is ominous, since it must afterwards be always old-fashioned

—George Santayana, 1913

Whenever sleep seized me I would see those very problems in my dreams; and many questions became clear to me in my sleep.

—Avicenna<sup>7</sup>

No one has ever had an idea in a dress suit.

—Frederick Banting, 1922

Beware of all enterprises that require new clothes.

-Henry David Thoreau, 1854

Be regular and orderly in your life [...], so that you may be violent and original in your work.

-Gustave Flaubert, 1876

<sup>&</sup>lt;sup>5</sup>As quoted, without a date, by E. Curie Labouisse in 1937.

<sup>&</sup>lt;sup>6</sup>As quoted, without a date, by William G. Hutchinson in 1902.

<sup>&</sup>lt;sup>7</sup>As quoted, without a date, by W. E. Goldman in 1974.

Do not fear to be eccentric in opinion, for every opinion now accepted was once eccentric.

-Bertrand Russell, 1951

I'll be more enthusiastic about encouraging thinking outside the box when there's evidence of any thinking going on inside it.

-Terry Pratchett, 2016

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A beautiful idea has a much greater chance of being correct than a ugly one.

-Roger Penrose, 1989

If nature were not beautiful it would not be worth knowing, and [then] life would not be worth living.

-Henri Poincaré, 1908

Nature is never so admired as when she is understood.

-Bernard Le Bovier de Fontenelle, 1733

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There are men who never err, because they never propose anything rational.

—Johann Wolfgang von Goethe, 1832

The man who makes no mistakes does not usually make anything.8

—Е. J. Phelps, 1889

You must never feel badly about making mistakes [...] as long as you take the trouble to learn from them.<sup>9</sup>

-Norton Juster, 1961

An error doesn't become a mistake until you refuse to correct it.

—O. A. Battista, 1946

Who excuses himself, accuses himself.

-European proverb<sup>10</sup>

Man is condemned to exhaust all possible errors when he examines any set of facts before he recognizes the truth.

-Jean-Baptiste Lamarck, 1809

<sup>&</sup>lt;sup>8</sup>In his full text, Phelps explicitly refers to an earlier (circa 1868) maxim by Archbishop William Connor Magee. Later paraphrases by Joseph Conrad, Theodore Roosevelt, and Marva Collins are also frequently quoted.

<sup>&</sup>lt;sup>9</sup>See also the second quote in the *On the Wise...* section.

<sup>&</sup>lt;sup>10</sup>Here and below, the label *European* is used for any proverb that is similar (within a reasonable flexibility of translation) in two or more European languages.

Research is the process of going up alleys to see if they are blind.

-Marston Bates, 1950

For men with insatiable curiosity, their prototype is [...] the dog sniffing tremendously at an infinite series of rat-holes.

-H. L. Mencken, 1923

It is a good morning exercise for a research scientist to discard a pet hypothesis every day before breakfast. It keeps him young.

-Konrad Lorenz, 1966

There is no failure except in no longer trying.

-Elbert Hubbard, 1895

You may be disappointed if you fail, but you are doomed if you don't try.

-Beverly Sills, 1997

Our greatest glory is not in never falling, but in rising every time we fall.

-Confucius, fifth century BC

Fall down seven times, get up eight.

—Japanese proverb<sup>11</sup>

If you want to succeed, double your failure rate.

—Thomas J. Watson<sup>12</sup>

Only those who dare to fail greatly can ever achieve greatly.

-Robert F. Kennedy, 1966

Success teaches us nothing; only failure teaches.

-Hyman G. Rickover, 1954

Good judgment comes from experience. Experience comes from bad judgment.

—Anonymous<sup>13</sup>

\*\*\*

He who risks nothing, can gain nothing.

—Italian proverb

He who does not risk, does not drink champagne.

-Russian proverb

To win without risk is to triumph without glory.

-Pierre Corneille, 1636

<sup>&</sup>lt;sup>11</sup>Here and below, proverbs are labeled by the languages in which they are common, rather than their countries of origin.

<sup>&</sup>lt;sup>12</sup>As quoted, without a date, by Roger von Oech in 1982.

<sup>&</sup>lt;sup>13</sup>I have seen this joke attributed to many authors, including Will Rogers, Rita Mae Brown, Randy Pausch, and even Mullah Nasreddin Hooja, but could not establish the actual original authorship.

He who knows how to endure everything can risk everything.
—Luc de Clapiers, 1746
All things are difficult before they are easy.
—Thomas Fuller, 1732
They can because they think they can.
Virgil <sup>14</sup>
Where there is a will, there is a way.
—European proverb
Will is power.
—French proverb
Nothing great in the world has been accomplished without passion.
—Georg Wilhelm Freidrich Hegel, 1821
Expect problems and eat them for breakfast.
—Alfred Armand Montapert, 1970
We are continually faced with a series of great opportunities brilliantly disguised as insoluble problems.
—John W. Gardner, 1966
Men are generally idle and ready to satisfy themselves and intimidate the industry of others by calling that impossible which is only difficult.
—Samuel Johnson, 1787
So many things are possible just as long as you don't know they're impossible.
—Norton Juster, 1961
Things that are merely difficult never give lasting pleasure.
—Voltaire, 1759
Madam, if a thing is possible, consider it done; the impossible? that will be done.
—Charles Alexandre de Calonne, 1783
The greatest pleasure in life is doing what other people say you cannot do.
—Walter Bagehot, 1853
The only way of finding the limits of impossible is by going beyond them to the impossible.
—Arthur C. Clarke, 1972
Things are only impossible until they're not.
—Hannah Louise Shearer, 1988

<sup>&</sup>lt;sup>14</sup>From his *Aeneid*, written in 29-19 BC.

It's kind of fun to do the impossible.
—Walt Disney <sup>15</sup>
The best way out is always through.
—Robert Frost, 1914
Where you cannot climb over, you must creep under.
—Danish proverb
Seek, and ye shall find.
—The Bible (Matthew 7:7)
To strive, to seek, to find, and not to yield.
—Alfred Tennyson, 1842
Where one door is shut, another opens.
—Spanish proverb
***
In the end, there is nothing too remote to be reached, or too well hidden to be discovered.
—René Descartes, 1637
We never stop investigating. [] This has become the greatest survival trick of our species.
—Desmond John Morris, 1967
***
Patience is the greatest of all virtues.
—European proverb <sup>16</sup>
If I have ever done the public any service [], 'tis due to nothing but industry and a patient thought.
—Isaac Newton, 1692
He that can have Patience, can have what he will.
—Benjamin Franklin, 1736
Genius is nothing else than a great aptitude for patience.

-Franz Kafka, 1917

-George-Louis Leclerc, 1785

There is only one major sin: impatience.

<sup>&</sup>lt;sup>15</sup>As quoted, without a date, by Derek Walter in 1982.

<sup>&</sup>lt;sup>16</sup>It is sometimes attributed to Cato, but I could not find a reliable contribution of his authorship.

Success in research needs four Gs: Glück, Geduld, Geschick, und Geld (luck, patience, skill, and money).
—Paul Ehrenfest <sup>17</sup>
Let me tell you the secret that has led me to my goal. My strength lies solely in my tenacity.
—Louis Pasteur <sup>18</sup>
Toil conquered the world, unrelenting toil.
—Virgil <sup>19</sup>
No fine work can be done without concentration and self-sacrifice and toil and doubt.
—Max Beerbohm, 1914
The only factor becoming scarce in a world of abundance is human attention.
—Kevin Kelly, 1998
***
Dreams do come true, if we only wish hard enough. You can have anything in life if you will sacrifice everything else for it.
—J. M. Barrie, 1904
To gain that which is worth having, it may be necessary to lose everything else.
—Burnadette Devlin, 1969
We succeed only as we identify in life, or in war, or in anything else, a single overriding objective, and make all other considerations bend to that one objective.
—Dwight Eisenhower, 1957
***
Make no little plans; they have no magic to stir men's blood. [] Make big plans, aim high in hope and work.
—Daniel Burnham, 1910 <sup>20</sup>

Too low they build, who build beneath the stars.

—Edward Young<sup>21</sup>

For a big ship, a long sailing.<sup>22</sup>

-Russian proverb

<sup>&</sup>lt;sup>17</sup>As quoted, without a date, by M. Perutz in 1988.

<sup>&</sup>lt;sup>18</sup>As quoted, without a date, by Wayne W. Dyer in 2001.

<sup>&</sup>lt;sup>19</sup>From his *Aeneid*, written in 29-19 BC.

<sup>&</sup>lt;sup>20</sup>Reportedly, first put on paper by a Burnham's associate, some Willis Polk.

<sup>&</sup>lt;sup>21</sup>From his *Night Thoughts*, written in 1742-1745.

<sup>&</sup>lt;sup>22</sup>The recent (anonymous?) mocking, "For a big ship, a big torpedo", also seems valid not only literally—see the *On Society...* section below.

Most people would succeed in small things if they were not troubled with great ambitions.

-Henry Wadsworth Longfellow, 1857

The human tendency to regard little things as important has produced very many great things.

—Georg Christoph Lichtenberg<sup>23</sup>

If politics is the art of the possible, research is surely the art of the soluble.

—P. B. Medawar, 1964

Pick battles big enough to matter, small enough to win.

—Jonathan Kozol<sup>24</sup>

I have little patience with scientists who take a board of wood, look for its thinnest part and drill a great number of holes where drilling is easy.

-Albert Einstein, 1949

'Tis Ambition enough to be employed as an Under-Laborer in clearing Ground a little, and removing some of the Rubbish that lies in the way to Knowledge.

-John Locke, 1690

The most likely way to reach a goal is to be aiming not at that goal itself but at some more ambitious goal beyond it.

—Arnold J. Toynbee<sup>25</sup>

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Simplicity is the peak of civilization.

—Jessie Sampter, 1927

Genius is the ability to reduce the complicated to the simple.

—C. W. Ceram, 1951

It's the Simple things that are really effective.

—Theodore Sturgeon, 1941

There is always a well-known solution to every human problem - neat, plausible, and wrong.

-H. L. Mencken, 1917

It was beautiful and simple, as all truly great swindles are.

—О. Henry, 1908

<sup>&</sup>lt;sup>23</sup>From his *Notebook G* (1779-1783).

<sup>&</sup>lt;sup>24</sup>As quoted, without a date, in several reputable collections, starting not later than 1981.

<sup>&</sup>lt;sup>25</sup>As quoted, without a date, by Edward Myers in 1955. Note that this maxim is sometimes misattributed to the author's uncle, Arnold Toynbee (1852-1883).

The shortest distance between two points is under construction.
—Anonymous <sup>26</sup>
Seek simplicity, and distrust it.
—Alfred North Whitehead, 1919
I'm suspicious of anyone who has a strong opinion on a complicated issue.
—Scott Adams, 2007
Nothing is as simple as we hope it will be.
—Jim Horning <sup>27</sup>
The Lord God is subtle, though not malicious.
—Albert Einstein, 1946
I have yet to see any problem, however complicated, which, when you looked at it in the right way did not become still more complicated. $^{28}$
—Poul Anderson, 1969
It's so much easier to suggest solutions when you don't know too much about the problem.
—Malcolm Forbes, 1978
<ul><li>Not every problem has a good solution.</li><li>Every solution has side effects.</li></ul>
—Dan Geer, 2007
If a problem has no solution, it may not be a problem, but a fact - not to be solved, but to be coped with over time.
—Shimon Peres, 2001
If a problem does not have a technical solution, it must not be a real problem. It is but an illusion [], a figment born of some regressive cultural tendency.
—Theodore Roszak, 1969
There is nothing more permanent than a temporary solution.

—Russian proverb<sup>29</sup>

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Believe those who are seeking the truth. Doubt those who find it.

—André Gide, 1952

 $<sup>^{26}</sup>$ This popular joke is frequently attributed to either Leo Aikman or some Noelie Altito, but I was unable to confirm either of these authorships, and even to identify the latter person.

<sup>&</sup>lt;sup>27</sup>The (undated) title of one of his blogs.

<sup>&</sup>lt;sup>28</sup>The so-called *Anderson's Law*.

<sup>&</sup>lt;sup>29</sup>Adjusted (in 1980) by Milton Friedman to describe "temporary" government programs.

No human being is constituted to know the truth, the whole truth, and nothing but the truth; and even the best of men must be content with fragments, with partial glimpses, never the full fruition.

-William Osler, 1905

There are no whole truths; all truths are half-truths. It is trying to treat them as whole truths that plays the devil.

—Alfred North Whitehead, 1954

Chase after the truth like all hell and you'll free yourself, even though you never touch its coat-tails.

-Clarence Darrow, 1938

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A problem well stated is a problem half solved.

—Charles F. Kettering<sup>31</sup>

Well begun is half done.

—European proverb

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Lead, follow, or get out of the way.

—Anonymous<sup>32</sup>

You're either part of the solution or you're part of the problem.

—Anonymous<sup>33</sup>

If you're not part of the solution, you're part of the precipitate.

—Henry J. Tillman<sup>34</sup>

<sup>&</sup>lt;sup>30</sup>This is apparently a play around a much older line by François Rabelais: "Speak the truth and shame the devil".

<sup>&</sup>lt;sup>31</sup>As quoted in several reliable sources, starting not later than 1954.

<sup>&</sup>lt;sup>32</sup>This popular slogan (with slight variations) has been attributed to perhaps the record number of candidate authors, including Thomas Paine, Thomas Edison, George S. Patton, Ted Turner, Lee Iacocca, Laurence J. Peter, and Arthur Uther Pendragon. I was unable to establish the original author.

<sup>&</sup>lt;sup>33</sup>This line and its close siblings, quoted in several newspapers in the 1950s and the 1960s as unauthored jokes, are actually succinct paraphrases of an earlier (circa 1937) maxim by John R. Alltucker. The line became famous after it had been used by Eldridge Cleaver in his 1968 speech.

<sup>34</sup>As quoted, without a date, by Robert A. Day and Nancy Sakaduski in 2011. Unfortunately Lwas

<sup>&</sup>lt;sup>34</sup>As quoted, without a date, by Robert A. Day and Nancy Sakaduski in 2011. Unfortunately I was unable to identify this author.

#### On Work and Leisure



Give me a place to stand, and I shall move the earth.
—Archimedes <sup>1</sup>
Give me a place to sit, and I shall watch.
—Anonymous <sup>2</sup>
I like work: it fascinates me. I can sit and look at it for hours.
—Jerome K. Jerome, 1889
Somebody has to do something, and it's just incredibly pathetic that it has to be us.
—Jerry Garcia, 1988
We can't all be heroes because somebody has to sit on the curb and clap as they go by.
—Will Rogers <sup>3</sup>
The reason why worry kills more people than work is that more people worry than work.
—Robert Frost, 1914
Science may have found a cure for most evils; but it has found no remedy for the worst of them all - the apathy of human beings.
—Helen Keller, 1927
The gods help them that help themselves.
$-Aesop^4$

 $<sup>^{1}</sup>$ As quoted by Pappus of Alexandria (in  $\sim$ 340 AD).  $^{2}$ Sometimes "attributed" to an "Archimedes' friend".

<sup>&</sup>lt;sup>3</sup>As quoted, without a date, by Jacob Morton Braude in 1969.

<sup>&</sup>lt;sup>4</sup>From his fable *Hercules and the Wagoner*, written in the mid-fifth century BC.

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Nothing venture, nothing have. —French proverb Try to turn every disaster into an opportunity. —John D. Rockefeller<sup>5</sup> When opportunity knocks, open the door. —European proverb Opportunity is missed by most people because it is dressed in overalls and looks like work. —Thomas Edison<sup>6</sup> What the country needs is dirtier fingernails and cleaner minds. -Will Rogers<sup>7</sup> \*\*\* One cannot, in any shape or form, depend on human relations for lasting reward. It is only work that truly satisfies. -Bette Davis, 1962 All work is noble: work is alone noble. —Thomas Carlyle, 1843 The only place where success comes before work is in the dictionary. —Anonymous<sup>8</sup> It takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that! -Lewis Carroll, 1865 All that is human must retrograde if it do not advance. -Edward Gibbon, 1776

He who does not move forward, goes backward.

—Johann Wolfgang von Goethe, 1797

The world belongs to the energetic. Every great and commanding moment in the annals of the world is the triumph of some enthusiasm.

-Ralph Waldo Emerson, 1876

<sup>&</sup>lt;sup>5</sup>As quoted, without a date, by Peter Collier and David Horowitz in 1937.

<sup>&</sup>lt;sup>6</sup>As quoted, without a date, by John L. Mason in 1990.

<sup>&</sup>lt;sup>7</sup>As quoted, without a date, by A. S. Migs Damiani in 1998.

<sup>&</sup>lt;sup>8</sup>This maxim, whose unauthored versions may be found in press at least as early as in 1925, was later paraphrased by many, including Vince Lombardi.

On Work and Leisure 17

Nature is entirely neutral; she submits to him who most energetically and resolutely assaults her. She grants her rewards for the fittest. -William Graham Sumner, 1880 Act [...] when and where you want to, but do it with all your might. —J. D. Salinger, 1957 \*\*\* Whatever women do they must do twice as well as men to be thought half as good. Luckily, this is not difficult. —Charlotte Whitton, 1963 Sure [Fred Astaire] was great, but don't forget that Ginger Rogers did everything he did... backwards, and in high heels! -Bob Thaves, 1982 Women who seek to be equal with men lack ambition. —Timothy Leary, 1987 [A woman] needs to know how to look like a girl, act like a lady, think like a man, and work like a dog. -Caroline K. Simon, 1959 \*\*\* A certain amount of opposition is a great help to a man. Kites rise against, not with, the wind. —John Neal, 1848 To reach the source, one has to swim against the current. -Stanisław Jerzy Lec, 1962 Only dead fish swims with the stream. -Malcolm Muggeridge, 1966 What does not kill me, makes me stronger. -Friedrich Nietzsche, 1888 A pike is in the sea to keep a crucian alert. -Russian proverb Fortune helps the bold. —Virgil, ∼19 BC Diligence is the mother of good fortune. -Miguel de Cervantes, 1615 No victor believes in chance. -Friedrich Nietzsche, 1882