

# Some Quotable Quotes for Statistics

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## Abstract

Well—mainly for statistics.

This is a collection of about 2,000 quotations from the famous, (e.g., Hippocrates: ‘Declare the past, diagnose the present, foretell the future’), the infamous (e.g., Stalin: ‘One death is a tragedy, a million deaths is a statistic’), and the cruelly neglected (modesty forbids. . .). Such quotes help me to:

- appeal to a higher authority (or simply to pass the buck),
- liven up lecture notes (or any other equally bald and unconvincing narratives),
- encourage lateral thinking (or indeed any thinking), and/or
- be cute.

I have been gathering these quotations for over twenty years, and am well aware that my personal collection needs rationalising and tidying! In particular, more detailed attributions with sources would be very welcome (but please no ‘I vaguely remember that the  $m$ th quote on page  $n$  was originally said by Winston Churchill/Benjamin Franklin/Groucho Marx/Dorothy Parker/Bertrand Russell/George Bernard Shaw/Mark Twain/Oscar Wilde/Steve Wright’.)

If you use this collection substantially in any publication, then please give a reference to it, in the form:

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Other quote collections are given by Sahai (1979), Bibby (1983), Mackay (1977, 1991), and Gaither & Cavazos-Gaither (1996). Enjoy.

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If I have not seen as far as others, it is because giants were standing on my shoulders.

HAL ABELSON

A memorandum is written not to inform the reader but to protect the writer.

DEAN GOODERHAM ACHESON  
*quoted in the ‘Wall St. Journal’, 8-Sept-1977*

The future comes one day at a time.

DEAN GOODERHAM ACHESON

Anybody can win unless there happens to be a second entry.

GEORGE ADA

If you think it’s expensive to hire a professional to do the job, wait until you hire an amateur.

RED ADAIR  
*on his fee for extinguishing oil well fires after the Gulf War*

[On Dungeons & Dragons]: Here we have a game that combines the charm of a Pentagon briefing with the excitement of double-entry bookkeeping.

CECIL ADAMS  
*The Straight Dope*

... he also had a device which looked rather like a largish electronic calculator. This had about a hundred tiny flat press buttons and a screen about four inches square on which any one of a million 'pages' could be summoned at a moment's notice.

DOUGLAS ADAMS

*The Hitchhiker's Guide to the Galaxy (1979)*

'You can't throw us into space,' yelled Ford, 'we're trying to write a book.'

DOUGLAS ADAMS

*The Hitchhiker's Guide to the Galaxy (1979)*

We are now cruising at a level of two to the power of twenty-five thousand to one against and falling, and we will be restoring normality just as soon as we are sure what is normal anyway. Thank You.

DOUGLAS ADAMS

*The Hitchhiker's Guide to the Galaxy (1979)*

'...I repeat we have normality.' She turned her microphone off—then turned it back on, with a slight smile and continued: 'Anything you still can't cope with is therefore your own problem.'

DOUGLAS ADAMS

*The Hitchhiker's Guide to the Galaxy (1979)*

'Tricia McMillan?' he said. 'What are you doing here?'

'Same as you,' she said, 'I hitched a lift. After all with a degree in Maths and another in astrophysics what else was there to do? It was either that or the dole queue again on Monday.'

DOUGLAS ADAMS

*The Hitchhiker's Guide to the Galaxy (1979)*

'These things will become clear to you,' said the old man gently, 'at least,' he added with slight doubt in his voice, 'clearer than they are at the moment.'

DOUGLAS ADAMS

*The Hitchhiker's Guide to the Galaxy (1979)*

'Look,' said Arthur, 'would it save you a lot of time if I just gave up and went mad now?'

DOUGLAS ADAMS

*The Hitchhiker's Guide to the Galaxy (1979)*

'You just let the machines get on with the adding up,' warned Majikthise, 'and we'll take care of the eternal verities thank you very much. You want to check your legal position you do mate. Under law the Quest for Ultimate Truth is quite clearly the inalienable prerogative of your working thinkers. Any bloody machine goes and actually *finds* it and we're straight out of a job aren't we? I mean what's the use of our sitting up half the night arguing that there may or may not be a God if htis machine only goes and gives you his bleeding phone number the next morning?'

'That's right,' shouted Vroomfondel, 'we demand rigidly defined areas of doubt and uncertainty!'

DOUGLAS ADAMS

*The Hitchhiker's Guide to the Galaxy (1979)*

'I checked it very thoroughly,' said the computer, 'and that quite definitely is the answer. I think the problem, to be quite honest with you, is that you've never actually known what the question is.'

DOUGLAS ADAMS

*The Hitchhiker's Guide to the Galaxy (1979)*

'Your arrival on the planet has caused considerable excitement. It has already been hailed, so I gather, as the third most improbable event in the history of the Universe.'

'What were the first two?'

'Oh, probably just coincidences.'

DOUGLAS ADAMS

*The Hitchhiker's Guide to the Galaxy (1979)*

In the beginning the Universe was created.

This has made a lot of people very angry and been widely regarded as a bad move.

DOUGLAS ADAMS

*The Restaurant at the End of the Universe (1980)*

The *Guide* is definitive. Reality is frequently inaccurate.

DOUGLAS ADAMS

*The Restaurant at the End of the Universe (1980)*

In an Infinite Universe anything can happen,' said Ford, 'Even survival. Strange but true.'

DOUGLAS ADAMS

*The Restaurant at the End of the Universe (1980)*

I say what it occurs to me to say when I think I hear people say things. More I cannot say.

DOUGLAS ADAMS

*The Restaurant at the End of the Universe (1980)*

'I only decide about my Universe,' continued the man quietly, 'My Universe is my eyes and my ears. Anything else is hearsay.'

DOUGLAS ADAMS

*The Restaurant at the End of the Universe (1980)*

'Totally mad,' he said, 'utter nonsense. But we'll do it because it's brilliant nonsense.'

DOUGLAS ADAMS

*The Restaurant at the End of the Universe (1980)*

'Would you like me to quote you some statistics?'

'Er, well...'

'Please, I would like to. They, too, are quite sensationally dull.'

DOUGLAS ADAMS

*Life, the Universe, and Everything (1982)*

The most misleading assumptions are the ones you don't even know you're making.

DOUGLAS ADAMS

*Last Chance to See... (1990)*

A common mistake people make when trying to design something completely foolproof is to underestimate the ingenuity of complete fools.

DOUGLAS ADAMS

*Mostly Harmless (1992)*

The major difference between a thing that might go wrong and a thing that cannot possibly go wrong is that when a thing that cannot possibly go wrong goes wrong it usually turns out to be impossible to get at and repair.

DOUGLAS ADAMS

*Mostly Harmless (1992)*

I love deadlines. I especially like the whooshing sound they make as they go flying by.

DOUGLAS ADAMS

I may not have gone where I intended to go, but I think I have ended up where I intended to be.

DOUGLAS ADAMS

Mathematicians practice absolute freedom.

HENRY BROOKS ADAMS

*A Letter to American Teachers of History (1910)*

Chaos often breeds life, when order breeds habit.

HENRY BROOKS ADAMS  
*The Education of Henry Adams (1918)*

If you have any trouble sounding condescending, find a Unix user to show you how it's done.

SCOTT ADAMS

There are many methods for predicting the future. For example, you can read horoscopes, tea leaves, tarot cards, or crystal balls. Collectively, these methods are known as 'nutty methods'.

SCOTT ADAMS

The creator of the universe works in mysterious ways. But he uses a base ten counting system and likes round numbers.

SCOTT ADAMS

Basic research is like shooting an arrow in the air and, where it lands, painting a target.

HOMER ADKINS  
*Nature 312:212 (1984)*

In the company of friends, writers can discuss their books, economists the state of the economy, lawyers their latest cases, and businessmen their latest acquisitions, but mathematicians cannot discuss their mathematics at all. And the more profound their work, the less understandable it is.

ALFRED ADLER  
*'Mathematics and Creativity', New Yorker Magazine (1972)*

Each generation has its few great mathematicians, and mathematics would not even notice the absence of the others. They are useful as teachers, and their research harms no one, but it is of no importance at all. A mathematician is great or he is nothing.

ALFRED ADLER  
*'Mathematics and Creativity', New Yorker Magazine (1972)*

You only find complete unanimity in a cemetery.

ABEL AGANBEGYAN  
*in 'the Guardian', 27-June-1987*

Rien n'est plus dangereux qu'une idée, quand on n'a qu'une idée.  
*(Nothing is more dangerous than an idea, when you have only one idea.)*

ALAIN (ÉMILE-AUGUSTE CHARTIER)  
*Propos sur la religion (1938) no. 74*

There are only two kinds of scholars; those who love ideas and those who hate them.

ALAIN (ÉMILE-AUGUSTE CHARTIER)

You gotta have a swine to show you where the truffles are.

EDWARD ALBEE  
*Who's Afraid of Virginia Woolf? (1962)*

A priest asked: What is Fate, Master?

And he answered:

It is that which gives a beast of burden its reason for existence.

It is that which men in former times had to bear upon their backs.

It is that which has caused nations to build byways from City to City upon which carts and coaches pass, and alongside which inns have come to be built to stave off Hunger, Thirst and Weariness.

And that is Fate? said the priest.

Fate... I thought you said Freight, responded the Master.

That's all right, said the priest. I wanted to know what Freight was too.

KEHLOG ALBRAN  
*The Profit*

I have seen the future and it is just like the present, only longer.

KEHLOG ALBRAN  
*The Profit*

z: Don't worry, I know almost exactly what I'm doing.

TODD ALCOTT, CHRIS WEITZ & PAUL WEITZ  
*Antz (film, 1998)*

Tradition is what you resort to when you don't have the time or the money to do it right.

KURT HERBERT ALDER

[on studying the Ptolemaic system]: If the Lord Almighty had consulted me before embarking upon creation, I should have recommended something simpler.

ALFONSO X (THE WISE)

The man who views the world at 50 the same as he did at 20 has wasted 30 years of his life.

MUHAMMAD ALI

I was thrown out of NYU my freshman year... for cheating on my metaphysics final... I looked within the soul of the boy sitting next to me.

WOODY ALLEN (ALLEN STEWART KONIGSBERG)

Why are our days numbered and not, say, lettered?

WOODY ALLEN (ALLEN STEWART KONIGSBERG)

More than any time in history, mankind now faces a crossroads. One path leads to despair and utter hopelessness, the other to total extinction. Let us pray that we have the wisdom to choose correctly.

WOODY ALLEN (ALLEN STEWART KONIGSBERG)  
*Side Effects (1980)*

If you can't annoy somebody with what you write, I think there's little point in writing.

KINGSLEY AMIS  
*quoted in the 'Radio Times', 1-May-1971*

If it's stupid but works, it isn't stupid.

AMPHIBIOUS WARFARE REVIEW  
*Spring 1989*

The only normal people are the ones you don't know very well.

JOE ANCIS

My knowledge of the human psyche is as yet imperfect. Certain areas won't yield to computation.

POUL ANDERSON  
*Goat Song (1972)*

I have yet to see any problem, however complicated, which, when you looked at it the right way, did not become still more complicated.

POUL ANDERSON  
*New Scientist, 25-Sept-1969*

If one is lucky, a solitary fantasy can totally transform one million realities.

MAYA ANGELOU

Mathematics is not a careful march down a well-cleared highway, but a journey into a strange wilderness, where the explorers often get lost. Rigour should be a signal to the historian that the maps have been made, and the real explorers have gone elsewhere.

W. S. ANGLIN  
*'Mathematics and History', Mathematical Intelligencer v. 4, no. 4*

Academic staff rather enjoy coming to conclusions, but they don't like coming to decisions at all.

LORD ANNAN

*Observer, Sayings of the Week, 6-Feb-1981*

Multiplication is vexation,  
Division is as bad;  
The Rule of three doth puzzle me,  
and Practice drives me mad.

ANON.

*Elizabethan Manuscript (1570)*

I hear, and I forget  
I see, and I remember  
I do, and I understand.

ANON.

An engineer thinks that his equations are an approximation to reality. A physicist thinks reality is an approximation to his equations. A mathematician doesn't care.

ANON.

A couple of months in the lab. can often save a couple of hours in the library.

ANON.

$\lim_{\omega \rightarrow \infty} 3 = 8$

ANON.

I pointed at the moon and some fool looked at my finger.

ANON.

*Zen saying*

There is one thing stronger than all the armies in the world; and that is an idea whose time has come.

ANON. (PARAPHRASING VICTOR HUGO)

*in the 'Nation' 15-Apr-1943*

Confidence: The feeling you have before you understand the situation.

ANON.

$$\int_1^{\sqrt[3]{3}} z^2 dz \times \cos\left(\frac{3\pi}{9}\right) = \log(\sqrt[3]{e})$$

(The integral  $z^2 dz$   
from one to the cube root of three,  
times the cosine  
of three pi over nine  
is the log of the cube root of e.)

ANON.

Beware the software rot, my son!  
The faults that bite, the jobs that thrash.  
Beware the broken pipe, and shun  
The frumious system crash.

ANON.

Statistics means never having to say you're certain.

ANON.

I'd like to help you out. Which way did you come in?

ANON.

Every program has at least one bug and can be shortened by at least one instruction—from which, by induction, one can deduce that every program can be reduced to one instruction which doesn't work.

ANON.

C: a language that combines all the elegance and power of assembly language with all the readability and maintainability of assembly language

ANON.

*in Jargon File 2.9.10 (1992), eds. Eric S. Raymond & Guy L. Steele*

Hanlon's Razor: ... "Never attribute to malice that which can be adequately explained by stupidity."

ANON.

*in Jargon File 2.9.10 (1992), eds. Eric S. Raymond & Guy L. Steele*

A language that doesn't affect the way you think about programming is not worth knowing.

ANON.

Should "anal retentive" have a hyphen?

ANON.

0110 0110 0110—The binary number of the Beast

ANON.

The trouble with being punctual is that people think you have nothing more important to do.

ANON.

The trouble with doing something right the first time is that nobody appreciates how difficult it was.

ANON.

Don't cry because it's over, smile because it happened.

ANON.

The sooner I fall behind, the more time I have to catch up.

ANON.

Did you hear about Cauchy's dog?—left a residue at every pole.

ANON.

There is no right way to do the wrong thing.

ANON.

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

ANON.

If at first you don't succeed, call it version 1.0.

ANON.

Silly is a state of mind; Stupid is a way of life.

ANON.

Q. Why do Computer Scientists confuse Halloween and Christmas?

A. Because Oct. 31 = Dec. 25.

ANON.

Q. How many graduate students does it take to change a light bulb?

A. Two, and a professor to take credit.

ANON.

You can't proceed from the informal to the formal by formal means.

ANON.

Das computenmaschine is nicht fur gefingerpoken und mittengrabben. Ist easy schnappen der springenwerk, blowenfusen, und poppencorken mit spitzzensparken. Ist nicht fur gewerken by das dummkopfen. Das rubbernecken sightseeren keepen hands in das pokets, relaxen und watch das blinkenlights.

ANON.

A printer consists of three main parts: the case, the jammed paper tray, and the blinking red light.

ANON.

Zenophobia: the irrational fear of convergent sequences.

ANON.

Skill is successfully walking a tightrope over Niagara Falls. Intelligence is not trying.

ANON.

All those who believe in telekinesis, raise my hand.

ANON.

All those who believe in telekinesis, raise my hand.

ANON.

This is a one line proof. . . if we start sufficiently far to the left.

ANON.

Truth is not determined by majority vote.

ANON.

The economy depends about as much on economists as the weather does on forecasters.

ANON.

Hit any user to continue.

ANON.

All machines are amplifiers.

ANON.

#### TOP TEN EXCUSES FOR NOT DOING THE MATH HOMEWORK

1. I accidentally divided by zero and my paper burst into flames.
2. Isaac Newton's birthday.
3. I could only get arbitrarily close to my textbook. I couldn't actually reach it.
4. I have the proof, but there isn't room to write it in this margin.
5. I was watching the World Series and got tied up trying to prove that it converged.
6. I have a solar powered calculator and it was cloudy.
7. I locked the paper in my trunk but a four-dimensional dog got in and ate it.
8. I couldn't figure out whether  $i$  am the square of negative one or  $i$  is the square root of negative one.
9. I took time out to snack on a doughnut and a cup of coffee. I spent the rest of the night trying to figure which one to dunk.
10. I could have sworn I put the homework inside a Klein bottle, but this morning I couldn't find it.

ANON.

As every Engineer knows:

$$\frac{\text{Work}}{\text{Time}} = \text{Power.}$$

Since Knowledge = Power and Time = Money, we have:

$$\frac{\text{Work}}{\text{Money}} = \text{Knowledge.}$$

Solving for Money, we get:

$$\frac{\text{Work}}{\text{Knowledge}} = \text{Money.}$$

Thus, as Knowledge approaches zero, Money approaches infinity, regardless of the amount of Work done.

Conclusion: The less you know, the more you make.

ANON.



i have a vision  
but i am misunderstood  
do you like my beard?

ANON.

*Alleged unabomber's haiku*

FIRST PROFESSOR: I have a counterexample to that theorem.

SECOND PROFESSOR: That's OK, I have two proofs.

ANON.

"You are old," said the youth, "and I'm told by my peers  
That your lectures bore people to death.  
Yet you talk at one hundred conventions per year—  
Don't you think that you should save your breath?"

ANON.

Old Statisticians never die—they just get broken down by age and sex.

ANON.

Artificial intelligence is no match for natural stupidity.

ANON.

Teachers open the door. You enter by yourself.

ANON.

The government are very keen on amassing statistics. They collect them, add them, raise them to the  $n$ th power, take the cube root and prepare wonderful diagrams. But you must never forget that every one of these figures comes in the first instance from the village watchman, who just puts down what he damn pleases.

ANONYMOUS ENGLISH JUDGE

*(Quoted by Sir Josiah Stamp in 'Some Economic Matters in Modern Life' (1929))*

I am returning this otherwise good typing paper to you because someone has printed gibberish all over it and put your name at the top.

ANONYMOUS ENGLISH PROFESSOR, OHIO UNIVERSITY

I've gone to hundreds of fortune-tellers' parlors, and have been told thousands of things, but nobody ever told me I was a policewoman getting ready to arrest her.

ANONYMOUS NEW YORK CITY DETECTIVE

Sequential analysis is a hoax.

F. J. ANSCOMBE

To anyone sympathetic with the current neo-Bernoullian neo-Bayesian Ramseyesque Finettist Savageous movement in statistics, the subject of testing goodness of fit is something of an embarrassment.

F. J. ANSCOMBE

*J. R. S. S. (1963)*

Credo ut intelligam.

*(I believe so that I may understand.)*

SAINT ANSELM

*12th Century*

The most useful piece of learning for the uses of life is to unlearn what is untrue.

ANTISTHENES

O ye men, are not women strong? great is the earth, high is the heaven, swift is the sun in his course, for he compasseth the heavens round about, and fetcheth his course again to his own place in one day.

Is he not great that maketh these things? therefore great is the truth, and stronger than all things.

All the earth crieth upon the truth, and the heaven blesseth it: all works shake and tremble at it, and with it is no unrighteous thing.

Wine is wicked, the king is wicked, women are wicked, all the children of men are wicked, and such are all their wicked works; and there is no truth in them; in their unrighteousness also they shall perish.

As for the truth, it endureth, and is always strong; it liveth and conquereth for evermore.

With her there is no accepting of persons or rewards; but she doeth the things that are just, and refraineth from all unjust and wicked things; and all men do well like of her works.

Neither in her judgment is any unrighteousness; and she is the strength, kingdom, power, and majesty, of all ages. Blessed be the God of truth.

APOCHRYPHA

*1 Esdras 4:37-40*

What is past I know, but what is for to come I know not.

And he said unto me, Stand up upon the right side, and I shall expound the similitude unto thee.

APOCHRYPHA

*2 Esdras 4:46-47*

Wisdom reacheth from one end to another mightily: and sweetly doth she order all things.

APOCHRYPHA

*Wisdom 8:1*

If riches be a possession to be desired in this life; what is richer than wisdom, that worketh all things?

APOCHRYPHA

*Wisdom 8:5*

Who can number the sand of the sea, and the drops of rain, and the days of eternity?

APOCHRYPHA

*Ecclesiasticus 1:2*

Whatsoever thou takest in hand, remember the end, and thou shalt never do amiss.

APOCHRYPHA

*Ecclesiasticus 7:36*

He that useth many words shall be abhorred; and he that taketh to himself authority therein shall be hated.

APOCHRYPHA

*Ecclesiasticus 20:8*

Wisdom that is hid, and treasure that is hoarded up, what profit is in them both?

APOCHRYPHA

*Ecclesiasticus 20:30*

Do nothing without advice; and when thou hast once done, repent not.

APOCHRYPHA

*Ecclesiasticus 32:19*

The wisdom of a learned man cometh by opportunity of leisure: and he that hath little business shall become wise.

APOCHRYPHA

*Ecclesiasticus 38:24*

... and Steve, who joined Apollo as an engineer, was promoted to trainee salesman in April, 1985, ...

APOLLO UK

*in 'WINDOW ON domain' number 5, page 2*

Practical sciences proceed by building up; theoretical science by resolving into components.

SAINT THOMAS AQUINAS  
*Commentary on the Ethics (1271) I, 3*

The light of faith makes us see what we believe.

SAINT THOMAS AQUINAS  
*Whether God Exists, Q.109, art.2*

Three things are necessary for the salvation of man: to know what he ought to believe; to know what he ought to desire; and to know what he ought to do.

SAINT THOMAS AQUINAS

The Reader may here observe the Force of Numbers, which can be successfully applied, even to those things, which one would imagine are subject to no Rules. There are very few things which we know, which are not capable of being reduc'd to a Mathematical Reasoning; and when they cannot it's a sign our knowledge of them is very small and confus'd; and when a Mathematical Reasoning can be had it's as great a folly to make use of any other, as to grope for a thing in the dark, when you have a Candle standing by you.

JOHN ARBUTHNOT  
*Of the Laws of Chance (1692)*

Every thought is an afterthought.

HANNA ARENDE  
*speech, 28-Nov-1977*

It is not once nor twice but times without number that the same ideas make their appearance in the world.

ARISTOTLE  
*'On The Heavens', quoted in T. L. Heath, Manual of Greek Mathematics*

Such an event is probable in Agathon's sense of the word: 'it is probable,' he says, 'that many things should happen contrary to probability.'

ARISTOTLE  
*Poetics, ch. 18*

Accordingly, the poet should prefer probable impossibilities to improbable possibilities.

ARISTOTLE  
*Poetics, ch. 24*

The mathematical sciences particularly exhibit order, symmetry, and limitation; and these are the greatest forms of the beautiful.

ARISTOTLE  
*Metaphysica, 3-1078b*

That which we must learn to do, we learn by doing.

ARISTOTLE  
*Nicomachean Ethics II*

... if the consequences are the same it is always better to assume the more limited antecedent, since in things of nature the limited, as being better, is sure to be found, wherever possible, rather than the unlimited.

ARISTOTLE  
*Physics VIII*

To Thales the primary question was not what do we know, but how do we know it.

ARISTOTLE

It is the mark of an educated mind to be able to entertain a thought without accepting it.

ARISTOTLE

Those who educate children well are more to be honored than parents, for these only gave life, those the art of living well.

ARISTOTLE

It is the mark of an instructed mind to rest assured with that degree of precision that the nature of the subject admits, and not to seek exactness when only an approximation of the truth is possible.

ARISTOTLE

The gods too are fond of a joke.

ARISTOTLE

Statistics may be defined as the discipline concerned with the treatment of numerical data derived from groups of individuals.

PETER ARMITAGE

*Statistical Methods in Medical Research (1971)*

I don't let my mouth say nothin' my head can't stand.

LOUIS ARMSTRONG

Seeing consists of the grasping of structural features rather than the indiscriminate recording of detail.

RUDOLF ARNHEIM

Marke all Mathematicall heades, which be onely and wholly bent to those sciences, how solitarie they be themselues, how vnfit to liue with others, & how vnapte to serue in the world.

ROGER ASCHAM

*The Scholemaster (1570)*

The product of an arithmetical computation is the answer to an equation; it is not the solution to a problem.

G. O. ASHLEY

The most exciting phrase to hear in science, the one that heralds new discoveries, is not "Eureka!" (I found it!) but "That's funny...".

ISAAC ASIMOV

I do not fear computers. I fear the lack of them.

ISAAC ASIMOV

If knowledge can create problems, it is not through ignorance that we can solve them.

ISAAC ASIMOV

It pays to be obvious, especially if you have a reputation for subtlety.

ISAAC ASIMOV

Elizabeth told me of an American girl who spoke scoffingly of the Ten Commandments: 'They don't tell you what you ought to do and only put ideas in your head'.

EARL ASQUITH

*Letters to a Friend*

Thou shalt not do as the dean pleases,  
Thou shalt not write thy doctor's thesis  
On education,

Thou shalt not worship projects nor  
Shalt thou or thine bow down before  
Administration.

Thou shalt not answer questionnaires  
Or quizzes upon world affairs,

Nor with compliance

Take any test. Thou shalt not sit  
with statisticians nor commit

A social science.

W. H. AUDEN

*Under Which Lyre (1946)*

Nisi credideritis, non intelligitis.

*(If you don't believe it, you won't understand it.)*

SAINT AUGUSTINE OF HIPPO

*Del Libero Arbitrio*

The good Christian should beware of mathematicians, and all those who make empty prophecies. The danger already exists that the mathematicians have made a covenant with the devil to darken the spirit and to confine man in the bonds of Hell.

SAINT AUGUSTINE OF HIPPO

*Genesi ad Litteram, Book II, xviii, 37.*

If I am given a formula, and I am ignorant of its meaning, it cannot teach me anything, but if I already know it what does the formula teach me?

SAINT AUGUSTINE OF HIPPO

*De Magistro ch X, 23.*

The weaker the data available upon which to base one's conclusion, the greater the precision which should be quoted in order to give the data authenticity.

NORMAN R. AUGUSTINE

If you are distressed by anything external, the pain is not due to the thing itself, but to your own estimate of it; and this you have the power to revoke at any moment.

MARCUS AURELIUS

*Meditations*

The danger from computers is not that they will eventually get as smart as men, but that we will meanwhile agree to meet them halfway.

BERNARD AVISHAI

Meeting Dr. Wollaston one morning in the shop of a bookseller, I proposed this question: If two volumes of hydrogen and one of oxygen are mixed together in a vessel, and if by mechanical pressure they can be so condensed as to become of the same specific gravity as water, will the gases under these circumstances unite and form water? "What do you think they will do?" said Dr. W. I replied, that I should rather expect they would unite. "I see no reason to suppose it," said he. I then inquired whether he thought the experiment worth making. He answered, that he did not, for that he should think it would certainly not succeed.

A few days after, I proposed the same question to Sir Humphry Davy. He at once said, "they will become water, of course;" and on my inquiring whether he thought the experiment worth making, he observed that it was a good experiment, but one which it was hardly necessary to make, as it must succeed.

CHARLES BABBAGE

*Reflections on the Decline of Science in England, and on Some of Its Causes (1830)*

Errors using inadequate data are much less than those using no data at all.

CHARLES BABBAGE

'Every minute dies a man, / Every minute one is born'; I need hardly point out to you that this calculation would tend to keep the sum total of the world's population in a state of perpetual equipoise, whereas it is a well-known fact that the said sum total is constantly on the increase. I would therefore take the liberty of suggesting that in the next edition of your excellent poem the erroneous calculation to which I refer should be corrected as follows: 'Every moment dies a man / And one and a sixteenth is born.' I may add that the exact figures are 1.067, but something must, of course, be conceded to the laws of metre.

CHARLES BABBAGE

*Unpublished letter to Alfred, Lord Tennyson*

I wish to God these calculations had been executed by steam.

CHARLES BABBAGE

You will be able to appreciate the influence of such an Engine on the future progress of science. I live in a country which is incapable of estimating it.

CHARLES BABBAGE

On two occasions I have been asked [by members of Parliament], ‘Pray, Mr. Babbage, if you put into the machine wrong figures, will the right answers come out?’ I am not able rightly to apprehend the kind of confusion of ideas that could provoke such a question.

CHARLES BABBAGE

There is nothing to it. All one has to do is hit the right keys at the right time and the instrument plays itself.

JOHANN SEBASTIAN BACH

Isn’t it strange how much we know if only we ask ourselves instead of somebody else.

RICHARD BACH

*Illusions*

The only way to avoid all frightening choices is to leave society and become a hermit, and that is a frightening choice.

RICHARD BACH

*One*

We know nothing until intuition agrees.

RICHARD BACH

*Running From Safety*

Not being known doesn’t stop the truth from being true.

RICHARD BACH

*There’s No Such Place As Far Away*

If a man will begin with certainties, he shall end in doubts; but if he will be content to begin with doubts, he shall end in certainties.

FRANCIS BACON

*The Advancement of Learning (1605), I v 8*

They are ill discoverers that think there is no land, when they can see nothing but sea.

FRANCIS BACON

*The Advancement of Learning (1605), I vii 5*

And as for Mixed Mathematics, I may only make this prediction, that there cannot fail to be more kinds of them, as nature grows further disclosed.

FRANCIS BACON

*The Advancement of Learning (1605), II*

The ill and unfit choice of words wonderfully obstructs the understanding.

FRANCIS BACON

*Novum Organum (1620)*

Truth comes out of error more readily than out of confusion.

FRANCIS BACON

*Novum Organum (1620)*

The men of experiment are like the ant, they only collect and use; the reasoners resemble spiders, who make cobwebs out of their own substance. But the bee takes the middle course: it gathers its material from the flowers of the garden and field, but transforms and digests it by a power of its own. Not unlike this is the true business of philosophy (science); for it neither relies solely or chiefly on the powers of the mind, nor does it take the matter which it gathers from natural history and mechanical experiments and lay up in the memory whole, as it finds it, but lays it up in the understanding altered and digested. Therefore, from a closer and purer league between these two faculties, the experimental and the rational (such as has never been made), much may be hoped.

FRANCIS BACON

*Novum Organum (1620)*

... he that will not apply new remedies must expect new evils; for time is the greatest innovator.

FRANCIS BACON  
*Essays (1625): Of Innovations*

Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider.

FRANCIS BACON  
*Essays (1625): Of Studies*

Reading maketh a full man; conference a ready man; and writing an exact man.

FRANCIS BACON  
*Essays (1625): Of Studies*

So if a man's wit be wandering, let him study the mathematics; for in demonstrations, if his wit be called away never so little, he must begin again.

FRANCIS BACON  
*Essays (1625): Of Studies*

The master of superstition, is the people; and in all superstition, wise men follow fools; and arguments are fitted to practice, in a reversed order.

FRANCIS BACON  
*Essays (1625): Of Superstition*

If a man look sharply and attentively, he shall see Fortune; for though she is blind, she is not invisible.

FRANCIS BACON  
*Essays (1625): Of Fortune*

We must see whether the same clock with weights will go faster at the top of a mountain or at the bottom of a mine; it is probable, if the pull of the weights decreases on the mountain and increases in the mine, that the earth has real attraction.

FRANCIS BACON  
*quoted in Voltaire, Letters on England, 'On Chancellor Bacon'*

The root of all superstition is that men observe when a thing hits but not when it misses.

FRANCIS BACON

In mathematics I can report no deficiency, except it be that men do not sufficiently understand the excellent use of Pure Mathematics.

FRANCIS BACON

How can I take an interest in my work when I don't like it?

FRANCIS BACON (THE 20TH CENTURY PAINTER)

Prudens quaestio dimidium scientiae.

*Half of science is asking the right questions.*

ROGER BACON

Neglect of mathematics works injury to all knowledge, since one who is ignorant of it cannot know the other sciences of the things of this world. And what is worst, those who are thus ignorant are unable to perceive their own ignorance and so do not seek a remedy.

ROGER BACON

Any effect, constant, theorem or equation named after Professor  $X$  was first discovered by Professor  $Y$ , for some value of  $Y$  not equal to  $X$ .

JOHN BAEZ

Why speculate when you can calculate?

JOHN BAEZ

Does it follow that I reject all authority? Far from my mind is such a thought. In the matter of boots, I refer to the authority of the bootmaker; concerning houses, canals, or railroads, I consult that of the architect or engineer. For such and such knowledge I apply to such and such a specialist. But I allow neither the bootmaker nor the architect nor the specialist to impose his authority on me. I listen to them freely and with all the respect merited by their intelligence, their character, and their knowledge, though reserving always my incontestable right of criticism and censure.

MIKHAIL ALEKSANDROVICH BAKUNIN  
*Dieu et l'état*

Nobody is more dangerous than he who imagines himself pure in heart; for his purity, by definition, is unassailable.

JAMES BALDWIN  
*Nobody Knows My Name (1961)*

Nothing matters very much, and very few things matter at all.

ARTHUR, LORD BALFOUR

What egotism, what stupid vanity, to suppose that a thing could not happen because you could not conceive it!

EDWIN BALMER AND PHILIP WYLIE  
*When Worlds Collide (1932)*

We do not have to think alike in order to arrive at the same objective conclusion.

MANLY BANISTER  
*Conquest of Earth (1955)*

A sympathetic Scot summed it all up very neatly in the remark, 'You should make a point of trying every experience once, excepting incest and folk dancing.'

SIR ARNOLD BAX

The unknown is always worse than the known.

EANDO BINDER  
*Menace of the Saucers (1969)*

Never practice two vices at once.

TALLULAH BANKHEAD

Nobody can be exactly like me. Even I have trouble doing it.

TALLULAH BANKHEAD

One picture is worth ten thousand words.

FRED R. BARNARD  
*Printer's Ink (10-March-1927)*

We provisionally define statistics as *the study of how information should be employed to reflect on, and give guidance for action in, a practical situation involving uncertainty.*

V. BARNETT  
*Comparative Statistical Inference (2nd ed. 1982)*

What is algebra exactly; is it those three-cornered things?

JAMES MATTHEW BARRIE  
*Quality Street (1901), II*

Thus the metric system did not really catch on in the States, unless you count the increasing popularity of the nine-millimeter bullet.

DAVE BARRY

It may be meaningless, but at least it's a gesture.

DAVE BARRY



In fact, when you get right down to it, almost every explanation Man came up with for anything until about 1926 was stupid.

DAVE BARRY

Outside of the killings, Washington has one of the lowest crime rates in the country.

MARION BARRY (MAYOR OF WASHINGTON DC)

Be suspicious of anything that works perfectly—it's probably because two errors are canceling each other out.

DAVE BARTLEY

Even if it can't, it might.

A. J. BARTON

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

ORLANDO A. BATTISTA

It is by universal misunderstanding that all agree. For if, by ill luck, people understood each other, they would never agree.

CHARLES BAUDELAIRE

[On the Macintosh IIx]: It's so fast, it can do an infinite loop in thirty seconds.

BRIAN BECHTEL

We are all born mad. Some remain so.

SAMUEL BECKETT

*Waiting for Godot*

Absolutum obsoletum.

*(If it works it's out of date.)*

STAFFORD BEER

*Brain of the Firm*

When one door closes another door opens; but we often look so long and so regretfully upon the closed door that we do not see the ones which open for us.

ALEXANDER GRAHAM BELL

Wherever groups disclosed themselves, or could be introduced, simplicity crystallized out of comparative chaos.

ERIC TEMPLE BELL

*Mathematics, Queen and Servant of Science (1951)*

Abstractness, sometimes hurled as a reproach at mathematics, is its chief glory and its surest title to practical usefulness. It is also the source of such beauty as may spring from mathematics.

ERIC TEMPLE BELL

Any impatient student of mathematics or science or engineering who is irked by having algebraic symbolism thrust upon him should try to get along without it for a week.

ERIC TEMPLE BELL

I have always hated machinery, and the only machine I ever understood was a wheelbarrow, and that but imperfectly.

ERIC TEMPLE BELL

*in H. Eves, 'Mathematical Circles Adieu'*

To assert that the earth revolves around the sun is as erroneous as to claim that Jesus was not born of a virgin.

CARDINAL BELLARMINE

*during the trial of Galileo (1615)*

Statistics are the triumph of the quantitative method, and the quantitative method is the victory of sterility and death.

HILLAIRE BELLOC  
*The Silence of the Sea*

It has long been recognized by public men of all kinds... that statistics come under the head of lying, and that no lie is so false or inconclusive as that which is based on statistics.

HILLAIRE BELLOC

But scientists, who ought to know  
Assure us that it must be so.  
Oh, let us never, never doubt  
What nobody is sure about.

HILLAIRE BELLOC

A great many people have come up to me and asked how I manage to get so much done and still keep looking so dissipated.

ROBERT BENCHLEY  
*Chips Off the Old Benchley (1949): 'How to Get Things Done'*

FRANKLIN: Have you ever thought, headmaster, that your standards might perhaps be a little out of date?

HEADMASTER: Of course they're out of date. Standards are always out of date. That is what makes them standards.

ALAN BENNETT  
*Forty Years On (1969) act 2*

Consistency requires you to be as ignorant today as you were a year ago.

BERNARD BERENSON  
*Notebook (1892)*

The practising Bayesian is well advised to become friends with as many numerical analysts as possible.

JAMES O. BERGER  
*Statistical Decision Theory and Bayesian Analysis (1985)*

The eye sees only what the mind is prepared to comprehend.

HENRI BERGSON

Most problems have either many answers or no answer. Only a few problems have one answer.

EDMUND C. BERKELEY

Certainly he who can digest a second or third fluxion need not, methinks, be squeamish about any point in divinity.

BISHOP GEORGE BERKELEY  
*(1734)*

Esse est percipi.

*(To be is to be perceived.)*

BISHOP GEORGE BERKELEY

We define genius as the capacity for productive reaction against one's training.

DESMOND BERNAL

There are two futures, the future of desire and the future of fate, and man's reason has never learned to separate them.

BERNARD BERENSON  
*The Decline of Art*

We define the art of conjecture, or stochastic art, as the art of evaluating as exactly as possible the probabilities of things, so that in our judgments and actions we can always base ourselves on what has been found to be the best, the most appropriate, the most certain, the best advised; this is the only object of the wisdom of the philosopher and the prudence of the statesman.

JACQUES BERNOULLI

*Ars Conjectandi (1713), Transl. Bertrand de Jouvenal (1967)*

It is utterly implausible that a mathematical formula should make the future known to us, and those who think it can would once have believed in witchcraft.

JACQUES BERNOULLI

*Ars Conjectandi (1713), Transl. Bertrand de Jouvenal (1967)*

Ninety percent of the game is half mental.

YOGI BERRA

You can observe a lot just by watchin'.

YOGI BERRA

We made too many wrong mistakes.

YOGI BERRA

Bayesian statistics is difficult in the sense that thinking is difficult.

DONALD A. BERRY

*'Teaching Elementary Bayesian Statistics with Real Applications in Science'*

Go to, let us go down, and there confound their language, that they may not understand one another's speech.

THE BIBLE

*Genesis 11:7*

In much wisdom is much grief; and he that increaseth knowledge increaseth sorrow.

THE BIBLE

*Ecclesiastes 1:18*

Better is the end of a thing than the beginning thereof.

THE BIBLE

*Ecclesiastes 7:8*

I returned, and saw under the sun, that the race is not to the swift, nor the battle to the strong, neither yet bread to the wise, nor yet riches to men of understanding, nor yet favour to men of skill; but time and chance happeneth to them all.

THE BIBLE

*Ecclesiastes 9:11*

Then said Daniel to Melzar, whom the prince of the eunuchs had set over Daniel, Hananiah, Mishael, and Azariah,

Prove thy servants, I beseech thee, ten days; and let them give us pulse to eat, and water to drink.

Then let our countenances be looked upon before thee, and the countenance of the children that eat of the portion of the king's meat: and as thou seest, deal with thy servants.

THE BIBLE

*Daniel 1:11-13*

But let your communication be Yea, yea; Nay, nay: for whatsoever is more than these cometh of evil

THE BIBLE

*Matthew 5:37*

For we know in part, and we prophesy in part.

But when that which is perfect is come, then that which is in part shall be done away.

THE BIBLE

*1 Corinthians 13:9-10*

Yes, the lectures are optional. Graduation is also optional.

BOB BICKFORD

The covers of this book are too far apart.

AMBROSE GWINETT BIERCE

To be positive: To be mistaken at the top of one's voice.

AMBROSE GWINETT BIERCE

*The Devil's Dictionary (1911)*

Bigot: One who is obstinately and zealously attached to an opinion that you do not entertain.

AMBROSE GWINETT BIERCE

*The Devil's Dictionary (1911)*

Faith: Belief without evidence in what is told by one who speaks without knowledge, of things without parallel.

AMBROSE GWINETT BIERCE

*The Devil's Dictionary (1911)*

Certain old men prefer to rise at dawn, taking a cold bath and a long walk with an empty stomach and otherwise mortifying the flesh. They then point with pride to these practices as the cause of their sturdy health and ripe years; the truth being that they are hearty and old, not because of their habits, but in spite of them. The reason we find only robust persons doing this thing is that it has killed all the others who have tried it.

AMBROSE GWINETT BIERCE

*The Devil's Dictionary (1911)*

According to the most trustworthy statistics the number of adult Dullards in the United States is but little short of thirty millions, including the statisticians.

AMBROSE GWINETT BIERCE

*The Devil's Dictionary (1911)*

Be as decent as you can.

Don't believe without evidence.

Treat things divine with marked respect—don't have anything to do with them.

Do not trust humanity without collateral security; it will play you some scurvy trick.

Remember that it hurts no one to be treated as an enemy entitled to respect until he shall prove himself a friend worthy of affection.

Cultivate a taste for distasteful truths.

And, finally, most important of all, endeavor to see things as they are, not as they ought to be.

AMBROSE GWINETT BIERCE

I do not object to people looking at their watches when I am speaking. But I strongly object when they start shaking them to make certain they are still going.

LORD BIRKETT

*Observer, Sayings of the Week, 30-Oct-1960*

When a man says he approves of something in principle, it means he hasn't the slightest intention of putting it into practice.

BISMARCK

It is better that ten guilty persons escape than one innocent suffer.

SIR WILLIAM BLACKSTONE

*Commentary on the Laws of England (1765) IV 27*

A witness cannot give evidence of his age unless he can remember being born.

JUDGE BLAGDEN

*Observer, Sayings of the Week, 29-Jan-1950*

The overwhelming majority of authors have very little to say. If we suppose, rather charitably, that in a typical book of fifteen chapters there are only eight passages worthy of quotation, then simple mathematics will convince us that in short order there will be no original quotations left for chapter headings. The implication is obvious...

ARMAND BLAGUE  
*How to Write*

What is now proved was once only imagin'd.

WILLIAM BLAKE  
*The Marriage of Heaven and Hell (1790-3)*

A fool sees not the same tree that a wise man sees.

WILLIAM BLAKE  
*The Marriage of Heaven and Hell (1790-3)*

If the doors of perception were cleansed every thing would appear to man as it is, infinite.

WILLIAM BLAKE  
*The Marriage of Heaven and Hell (1790-3): A Memorable Fancy*

The man who never alters his opinion is like standing water, & breeds reptiles of the mind.

WILLIAM BLAKE  
*The Marriage of Heaven and Hell (1790-3): Proverbs of Hell*

God forbid that Truth should be confined to Mathematical Demonstration!

WILLIAM BLAKE  
*Notes on Reynold's Discourses (1808)*

Reason, or the ratio of all we have already known, is not the same that it shall be when we know more.

WILLIAM BLAKE

The manipulation of statistical formulas is no substitute for knowing what one is doing.

HUBERT M. BLALOCK, JR.  
*Social Statistics (2nd edition, 1972)*

A conclusion is the place where you got tired of thinking.

ARTHUR BLOCK

The last time somebody said, 'I find I can write much better with a word processor', I replied, 'They used to say the same thing about drugs'.

ROY BLOUNT, JR.

... a phenomenon that everybody who teaches mathematics has observed: the students always have to be taught what they should have learned in the preceding course. (We, the teachers, were of course exceptions; it is consequently hard for us to understand the deficiencies of our students.) The average student does not really learn to add fractions in an arithmetic class; but by the time he has survived a course in algebra he can add numerical fractions. He does not learn algebra in the algebra course; he learns it in calculus, when he is forced to use it. He does not learn calculus in a calculus class either; but if he goes on to differential equations he may have a pretty good grasp of elementary calculus when he gets through. And so on throughout the hierarchy of courses; the most advanced course, naturally, is learned only by teaching it. This is not just because each previous teacher did such a rotten job. It is because there is not time for enough practice on each new topic; and even if there were, it would be insufferably dull.

RALPH P. BOAS

An expert is a man who has made all the mistakes, which can be made, in a very narrow field.

NIELS HENRIK DAVID BOHR

Never express yourself more clearly than you can think.

NIELS HENRIK DAVID BOHR

We are trapped by language to such a degree that every attempt to formulate insight is a play on words.

NIELS HENRIK DAVID BOHR

The opposite of a correct statement is a false statement. But the opposite of a profound truth may well be another profound truth.

NIELS HENRIK DAVID BOHR

Prediction is very difficult, especially of the future.

NIELS HENRIK DAVID BOHR

We are all agreed that your theory is crazy. The question which divides us is whether it is crazy enough to have a chance of being correct. My own feeling is that it is not crazy enough.

NIELS HENRIK DAVID BOHR

If you think education is expensive, try ignorance.

DEREK BOK, PRESIDENT OF HARVARD UNIVERSITY

When evaluating a model, at least two broad standards are relevant. One is whether the model is consistent with the data. The other is whether the model is consistent with the 'real world.'

KENNETH A. BOLLEN

*Structural Equations with Latent Variables (1989)*

The solid wealth of insurance companies and the success of those who organise gambling are some indication of the profits to be derived from the efficient use of chance.

EDWARD DE BONO

I can't say I've ever been lost, but I was bewildered once for three days.

DANIEL BOONE

The heresies we should fear are those which can be confused with orthodoxy.

JORGE LUIS BORGES

*The Theologians*

C'est magnifique, mais ce n'est pas la guerre.

MARÉCHAL BOSQUET

*commenting on the charge of the Light Brigade (1854)*

Structures are the weapons of the mathematician.

BOURBAKI

The efforts of computer engineers have already produced a mechanical Briggs (who spent his lifetime computing logarithms) and a mechanical Barlow (whose famous Tables were a life's work), but no one has ever conceived of a mechanical Napier (for he *invented* logarithms).

B. V. BOWDEN

*Faster than Thought (1953)*

A knowledge of statistics is like a knowledge of foreign languages or of algebra; it may prove of use at any time under any circumstances.

A. L. BOWLEY

The various estimates of the height of the true summit vary considerably, but by taking an average of these figures it is possible to say confidently that the summit of Rum Doodle is 40,000 1/2 feet above sea level.

W. E. BOWMAN

*The Ascent of Rum Doodle (1956)*

In the first place, the best way to convey to the experimenter what the data tell him about  $\theta$  is to show him a picture of the posterior distribution.

G. E. P. BOX & G. C. TIAO

*Bayesian Inference in Statistical Analysis (1973)*

As the Bayesian approach sets us free from the yoke of sufficiency, so numerical integration and the availability of computers set us free from the need to worry about the “integrability in closed form” of the function.

G. E. P. BOX & G. C. TIAO  
*Bayesian Inference in Statistical Analysis (1973)*

All models are wrong, some models are useful.

G. E. P. BOX  
*Robustness in the Strategy of Scientific Model Building (1979)*

I take the view, and always have done, that if you cannot say what you have to say in twenty minutes, you should go away and write a book about it.

LORD BRABAZON  
*Speech in House of Lords, 21–June–1955*

THREEPIO: Sir, the possibility of successfully navigating an asteroid field is approximately three thousand, seven hundred and twenty to one.

HAN: Never tell me the odds!

LEIGH BRACKETT & LAWRENCE KASDAN  
*The Empire Strikes Back (1980)*

THREEPIO: The city’s central computer told you? Artoo-Detoo, you know better than to trust a strange computer.

LEIGH BRACKETT & LAWRENCE KASDAN  
*The Empire Strikes Back (1980)*

YODA: Do, or do not. There is no try.

LEIGH BRACKETT & LAWRENCE KASDAN  
*The Empire Strikes Back (1980)*

We are an impossibility in an impossible universe.

RAY BRADBURY

Without libraries what have we? We have no past and no future.

RAY BRADBURY

We use the classical theory on Mondays, Wednesdays and Fridays, and the quantum theory on Tuesdays, Thursdays and Saturdays.

SIR WILLIAM BRAGG

The important thing in science is not so much to obtain new facts as to discover new ways of thinking about them.

SIR WILLIAM BRAGG

It has been a fortunate fact in the modern history of physical science that the scientist constructing a new theoretical system has nearly always found that the mathematics...required...had already been worked out by pure mathematicians for their own amusement... The moral for statesmen would seem to be that, for proper scientific “planning”, pure mathematics should be endowed fifty years ahead of scientists.

R. B. BRAITHWAITE  
*Scientific Explanation (1953)*

How is it possible to suspend topaz in one cup of the balance and weigh it against amethyst in the other; or who in a single language can compare the tranquillizing grace of a maiden with the invigorating pleasure of witnessing a well-contested rat-fight?

ERNEST BRAMAH [E. B. SMITH]  
*Kai Lung’s Golden Hours (1900), ‘The Incredible Obtuseness of those who had opposed the Virtuous Kai-Lung’*

When struck by a thunderbolt it is unnecessary to consult the Book of Dates as to the precise meaning of the omen.

ERNEST BRAMAH [E. B. SMITH]  
*The Wallet of Kai-Lung (1900) 'The Transmutation of Ling'*

Historians will consider this a dark age. Science historians can read Galileos technical correspondence from the 1590s but not Marvin Minskys from the 1960s.

STEWART BRAND  
*'Written on the Wind', Civilization Magazine, Nov 1998*

Beware of programmers who carry screwdrivers.

LEONARD BRANDWEIN

Research is what I'm doing when I don't know what I'm doing.

WERNER VON BRAUN

I do not believe in things. I believe in relationships.

GEORGES BRAQUE  
*in J. Culler, 'Saussure', Ch. 4*

To define a thing is to substitute the definition for the thing itself.

GEORGES BRAQUE

The sensation of having experienced the profound, transcendent and sublime is caused by hearing something trite, melodramatic and cliched, uttered by someone you'd like to have sex with.

KRISTEN BRENNAN

My sources are unreliable, but their information is fascinating.

ASHLEIGH BRILLIANT

I don't have any solution, but I certainly admire the problem.

ASHLEIGH BRILLIANT

My play was a complete success. The audience was a failure.

ASHLEIGH BRILLIANT

The time for action is past! Now is the time for senseless bickering!

ASHLEIGH BRILLIANT

My opinions may have changed, but not the fact that I am right.

ASHLEIGH BRILLIANT

The plural of anecdote is not data.

ROGER BRINNER

Telling the future by looking at the past assumes that conditions remain constant. This is like driving a car by looking in the rearview mirror.

HERB BRODY

It is important that students bring a certain ragamuffin, barefoot, irreverence to their studies; they are not here to worship what is known, but to question it.

JACOB BRONOWSKI  
*The Ascent of Man (1973)*

The essence of science: ask an impertinent question, and you are on the way to a pertinent answer.

JACOB BRONOWSKI  
*The Ascent of Man (1973)*



The basis for poetry and scientific discovery is the ability to comprehend the unlike in the like and the like in the unlike.

JACOB BRONOWSKI

Whenever people say ‘we mustn’t be sentimental’, you can take it they are about to do something cruel. And if they add, ‘we must be realistic’, they mean they are going to make money out of it.

BRIGID BROPHY

There are a billion people in China. It’s not easy to be an individual in a crowd of more than a billion people. Think of it. More than a BILLION people. That means even if you’re a one-in-a-million type of guy, there are still a thousand guys exactly like you.

A. WHITNEY BROWN

*The Big Picture*

No one can tell time except approximately, time never stands still to be named.

FREDRIC BROWN

*The Lenient Beast (1956)*

To arrive at the simplest truth, as Newton knew and practiced, requires years of contemplation. Not activity. Not reasoning. Not calculating. Not busy behaviour of any kind. Not reading. Not talking. Not making an effort. Not thinking. Simply bearing in mind what it is one needs to know. And yet those with the courage to tread this path to real discovery are not only offered practically no guidance on how to do so, they are actively discouraged and have to set about it in secret, pretending meanwhile to be diligently engaged in the frantic diversions and to conform with the deadening personal opinions which are continually being thrust upon them.

GEORGE SPENCER BROWN

*The Laws of Form (1969)*

A deadline is negative inspiration. Still, it’s better than no inspiration at all.

RITA MAE BROWN

*Starting from Scratch: A Different Kind of Writer’s Manual*

Morals are private. Decency is public.

RITA MAE BROWN

*Starting from Scratch: A Different Kind of Writer’s Manual*

Novelty is not necessarily a virtue.

RITA MAE BROWN

*Starting from Scratch: A Different Kind of Writer’s Manual*

The statistics on sanity are that one out of every four Americans is suffering from some form of mental illness. Think of your three best friends. If they’re okay, then it’s you.

RITA MAE BROWN

Good judgment comes from experience, and often experience comes from bad judgment.

RITA MAE BROWN

The religion of one seems madness unto another.

SIR THOMAS BROWNE

No one should approach the temple of science with the soul of a money changer.

SIR THOMAS BROWNE

Since when was genius found respectable?

ELIZABETH BARRETT BROWNING

*Aurora Leigh (1857), Bk VI*

It is proof of a base and low mind for one to wish to think with the masses or majority, merely because the majority is the majority. Truth does not change because it is, or is not, believed by a majority of the people.

GIORDANO BRUNO

ART BUCHWALD: Put yourself in Hamlet's shoes. Suppose you were a prince, and you came back from college to discover that your uncle had murdered your father and married your mother, and you fell in love with a beautiful girl and mistakenly murdered her father, and then she went crazy and drowned herself. What would you do?

STUDENT: Go back for a masters?

ART BUCHWALD AND STUDENT  
*undated conversation*

We are what we think. All that we are arises with our thoughts. With our thoughts we make the world.

THE BUDDHA

Believe nothing, no matter where you read it, or who said it, no matter if I have said it, unless it agrees with your own reason and your own common sense.

THE BUDDHA

There are two mistakes one can make along the road to truth: not going all the way, and not starting.

THE BUDDHA

Le génie n'est qu'une plus grande aptitude à la patience.

COMTE DE BUFFON (GEORGE-LOUIS LECLERC)  
*in Hérault de Séchelles, 'Voyage à Montbar' (1803)*

The pessimist is the man who believes things couldn't possibly be worse, to which the optimist replies: 'Oh yes they could!'

VLADIMIR BUKOVSKY  
*in the 'Guardian Weekly', 10-July-1977*

Fate laughs at probabilities.

EDWARD GEORGE BULWER-LYTTON  
*Eugene Aram, Book I, Ch. 10*

History is the version of past events that people have decided to agree upon.

NAPOLEON BUONAPARTE

Imagination rules the world.

NAPOLEON BUONAPARTE

The advancement and perfection of mathematics are intimately connected with the prosperity of the State.

NAPOLEON BUONAPARTE

I would give my life for a man who is looking for the truth. But I would gladly kill a man who thinks that he has found the truth.

LUIS BUÑUEL  
*in 'the Guardian', 24-Feb-1989*

If in the last few years you haven't discarded a major opinion or acquired a new one, check your pulse. You may be dead.

GELET BURGESS

It is the nature of all greatness not to be exact.

EDMUND BURKE  
*On American Taxation (1775)*

An event has happened, upon which it is difficult to speak, and impossible to be silent.

EDMUND BURKE

*Speech on the Impeachment of Warren Hastings (5-May-1789)*

But the age of chivalry is gone. That of sophisters, economists, and calculators, has succeeded; and the glory of Europe is extinguished for ever.

EDMUND BURKE

*Reflections on the Revolution in France (1790)*

Example is the school of mankind, and they will learn at no other.

EDMUND BURKE

*Letters on a Regicidal Peace (1796), I*

Good judgment comes from experience and experience comes from bad judgment.

WHITEY BURNHAM

Look to the future, because that is where you'll spend the rest of your life.

GEORGE BURNS

If you live to be one hundred, you've got it made. Very few people die past that age.

GEORGE BURNS

A good sermon should have a good beginning and a good ending, and they should be as close together as possible.

GEORGE BURNS

The best-laid schemes o' mice an' men  
Gang aft a-gley.

ROBERT BURNS

*To a Mouse (1786)*

Nature's mighty law is change.

ROBERT BURNS

*Let Not Women E'er Complain (1794)*

So strong is the power of superstition that even though we know that we have been reverencing a sham, yet still we hesitate to admit the validity of our new-found convictions.

EDGAR RICE BURROUGHS

*Thuvia, Maid of Mars (1916)*

Could it be that there were other things more desirable than cold logic and undefiled brain power?

EDGAR RICE BURROUGHS

*The Chessmen of Mars (1922)*

Even theories must have foundations.

EDGAR RICE BURROUGHS

*Pirates of Venus (1934)*

Subconscious minds are no less fallible than the objective mind.

EDGAR RICE BURROUGHS

*Pirates of Venus (1934)*

I do not think that I am ever overconfident. I am merely wholly confident, and I maintain that there is all the difference in the world there.

EDGAR RICE BURROUGHS

*Llana of Gathol (1941)*

If you can't be just, be arbitrary.

WILLIAM SEWARD BURROUGHS

*The Naked Lunch (1959)*

A psychotic is a guy who has just found out what is going on.

WILLIAM SEWARD BURROUGHS

Language is a virus from outer space.

WILLIAM SEWARD BURROUGHS

I have opinions of my own—strong opinions—but I don't always agree with them.

GEORGE BUSH

It's no exaggeration to say the undecideds could go one way or another.

GEORGE BUSH

But to *us*, probability is the very guide of life.

BISHOP JOSEPH BUTLER

*The Analogy of Religion (1756), Preface*

An expert is one who knows more and more about less and less until he knows absolutely everything about nothing.

NICHOLAS MURRAY BUTLER

*Commencement address as President of Columbia University (1901)*

Life is the art of drawing sufficient conclusions from insufficient premises.

SAMUEL BUTLER

*Notebooks (1912), 'Life', 9*

Though analogy is often misleading, it is the least misleading thing we have.

SAMUEL BUTLER

*Notebooks (1912), 'Music, Pictures and Books: Thought and Word', 2*

The pursuit of truth is chimerical... What we should pursue is the most convenient arrangement of our ideas.

SAMUEL BUTLER

*Notebooks (1912)*

Everything is in a state of flux, including the status quo.

ROBERT BYRNE

Damn description, it is always disgusting.

LORD BYRON

*Letter (6-Aug-1809)*

There is something pagan in me that I cannot shake off. In short, I deny nothing, but doubt everything.

LORD BYRON

*Letter (4-Dec-1811)*

The best of prophets of the future is the past.

LORD BYRON

Opinions are made to be changed—or how is truth to be got at?

LORD BYRON

Who then will explain the explanation?

LORD BYRON

I can't understand why people are frightened of new ideas. I'm frightened of the old ones.

JOHN CAGE

Everything has already begun before, the first line of the first page of every novel refers to something that has already happened outside the book.

ITALO CALVINO

*If on a Winter's Night a Traveller, Ch. 7*

Know what I hate most? Rhetorical questions.

HENRY N. CAMP

No literature is sound, no philosophy of action workable, if it doesn't take a hard look at itself.

JOHN W. CAMPBELL

(1951)

Too darned good a machine can be a menace, not a help.

JOHN W. CAMPBELL

(1951)

There's nothing quite so stultifying as having someone around who has all the answers—and gives them to you.

JOHN W. CAMPBELL

(1951)

That's the trouble with languages. They have to be learned.

JOHN W. CAMPBELL

*The Space Beyond*

Intellectuel = celui qui se dédouble.

(*An intellectual is someone whose mind watches itself.*)

ALBERT CAMUS

*Carnets 1935–42 (1962)*

Some people talk in their sleep. Lecturers talk while other people sleep.

ALBERT CAMUS

You cannot create experience. You must undergo it.

ALBERT CAMUS

You have but to know an object by its proper name for it to lose its dangerous magic.

ELIAS CANETTI

*Auto da Fé, Part III, Ch. 2*

He would like to start from scratch. Where is scratch?

ELIAS CANETTI

*The Human Province (1965)*

I can prove anything by statistics except the truth.

GEORGE CANNING

Man is a tool-using animal. . . Without tools he is nothing, with tools he is all.

THOMAS CARLYLE

*Sartor Resartus (1834) bk. 1, ch. 5*

The end of a man is action and not a thought, though it were the noblest.

THOMAS CARLYLE

*Sartor Resartus (1834) bk. 2, ch. 6*

What is all knowledge too but recorded experience, and a product of history; of which, therefore, reasoning and belief, no less than action and passion, are essential materials?

THOMAS CARLYLE

*Critical and Miscellaneous Essays (1838) 'On History'*

A witty statesman said, you might prove anything by figures.

THOMAS CARLYLE

*Chartism (1839) ch. 2*

‘Genius’ (which means transcendent capacity of taking trouble, first of all).

THOMAS CARLYLE  
*History of Frederick the Great (1858-65) bk. 4, ch. 3*

A judicious man uses statistics, not to get knowledge, but to save himself from having ignorance foisted upon him.

THOMAS CARLYLE

As I grow older I pay less attention to what men say. I just watch what they do.

ANDREW CARNEGIE

Copying from one book is clearly cribbing; copying from two is research; and if one can get somebody else to do the copying this becomes a project.

F. G. G. CARR  
*Observer, Sayings of the Week, 7-Dec-1952*

You have not had thirty years’ experience . . . You have had one year’s experience 30 times.

J. L. CARR  
*The Harpole Report (1972) ch. 21*

When the going gets tough, the tough get empirical.

JON CARROLL

‘What is the use of a book,’ thought Alice, ‘without pictures or conversations?’

LEWIS CARROLL (CHARLES LUTWIDGE DODGSON)  
*Alice in Wonderland (1865)*

‘Why’, said the Dodo, ‘the best way to explain it is to do it.’

LEWIS CARROLL (CHARLES LUTWIDGE DODGSON)  
*Alice in Wonderland (1865)*

‘Would you tell me, please, which way I ought to go from here?’ ‘That depends a good deal on where you want to get to’, said the Cat. ‘I don’t much care where. . .’, said Alice. ‘Then it doesn’t matter which way you go’, said the Cat. ‘So long as I get somewhere’, Alice added as an explanation. ‘Oh, you’re sure to do that’, said the Cat, ‘if you only walk long enough.’

LEWIS CARROLL (CHARLES LUTWIDGE DODGSON)  
*Alice in Wonderland (1865)*

Alice laughed: ‘There’s no use trying,’ she said; ‘one can’t believe impossible things.’ ‘I daresay you haven’t had much practice,’ said the Queen. ‘When I was younger, I always did it for half an hour a day. Why, sometimes I’ve believed as many as six impossible things before breakfast.’

LEWIS CARROLL (CHARLES LUTWIDGE DODGSON)  
*Alice in Wonderland (1865)*

Now, *here*, you see, 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 (CHARLES LUTWIDGE DODGSON)  
*Through the Looking Glass (1872)*

‘What’s one and one and one and one and one and one and one and one and one and one and one and one?’ ‘I don’t know’ said Alice. ‘I lost count.’ ‘She can’t do addition.’ said the Red Queen.

LEWIS CARROLL (CHARLES LUTWIDGE DODGSON)  
*Through the Looking Glass (1872)*

A thing is obvious mathematically after you see it.

R. D. CARMICHAEL

A teacher is one who makes himself progressively unnecessary.

THOMAS CARRUTHERS

Just think of all the billions of coincidences that *don't* happen.

DICK CAVETT

Lotteries, a tax upon imbeciles.

COUNT CAMILLO BENSO DI CAVOUR

Los buenos pintores imitan la naturaleza, pero los malos la vomitan.

CERVANTES (MIGUEL DE CERVANTES SAAVEDRA)

*El Licienciado Vidriera (1613)*

By a small sample we may judge the whole piece.

CERVANTES (MIGUEL DE CERVANTES SAAVEDRA)

Individual human beings are so subtly developed through the centuries that it is strictly impermissible to compare any two men who are not contemporaries—that is to say are taken from two quite different times.

PIERRE TEILHARD DE CHARDIN

*The Appearance of Man*

The past has revealed to me the structure of the future.

PIERRE TEILHARD DE CHARDIN

*Letters from a Traveller*

ELWOOD: I've wrestled with reality for 35 years, and I'm happy, doctor, I finally won out over it.

MARY CHASE

*Harvey (film, 1950)*

Statistical methods . . . constitute the science of collecting, analysing and interpreting data in the best possible way.

C. CHATFIELD

*Statistics for Technology (3rd ed. 1983)*

Nowher so bisy a man as he there nas,

And yet he semed bisier than he was.

GEOFFREY CHAUCER

*The Canterbury Tales, 'The General Prologue', 1*

That lyf so short, the craft so long to lerne.

GEOFFREY CHAUCER

*The Parliament of Fowls 1.1*

Man is what he believes.

ANTON CHEKHOV

Years ago a statistician might have claimed that statistics deals with the processing of data. . . to-days statistician will be more likely to say that statistics is concerned with decision making in the face of uncertainty.

H. CHERNOFF AND L. E. MOSES

*Elementary Decision Theory (1959)*

The knowledge of the world is only to be acquired in the world, and not in a closet.

LORD CHESTERFIELD

*Letters to His Son (1746)*

You can only find truth with logic if you have already found truth without it.

GILBERT KEITH CHESTERTON

*In A. L. Maycock, 'The Man who was Orthodox' (1963)*

It isn't that they can't see the solution. It is that they can't see the problem.

GILBERT KEITH CHESTERTON  
*The Scandal of Father Brown (1935), 'The Point of a Pin'*

One may understand the cosmos, but never the ego; the self is more distant than any star.

GILBERT KEITH CHESTERTON

An adventure is only an inconvenience rightly considered. An inconvenience is only an adventure wrongly considered.

GILBERT KEITH CHESTERTON

[on old age]: Considering the alternative... it's not too bad at all.

MAURICE CHEVALIER

When my metaphysical friends tell me that the data on which the astronomers made their calculations, were necessarily obtained originally through the evidence of the senses, I say, "no." They might, in theory at any rate, be obtained by automatic calculating-machines set in motion by the light falling upon them without admixture of the human senses at any stage. When it is persisted that we should have to be told about the calculations and use our ears for that purpose, I reply that the mathematical process has a reality and virtue in itself, and that once discovered it constitutes a new and independent factor. I am also at this point accustomed to reaffirm with emphasis my conviction that the sun is real, and also that it is hot—in fact hot as Hell, and that if the metaphysicians doubt it they should go there and see.

WINSTON SPENCER CHURCHILL  
*My Early Life*

You cannot ask us to take sides against arithmetic.

WINSTON SPENCER CHURCHILL  
*speech in House of Commons, 31-Aug-1926*

Atomic energy might be as good as our present day explosives, but is unlikely to produce anything very much more dangerous.

WINSTON SPENCER CHURCHILL  
*(1939)*

It is a mistake to look too far ahead. Only one link of the chain of destiny can be handled at a time.

WINSTON SPENCER CHURCHILL  
*speech in House of Commons, 27-Feb-1945*

I gather, young man, that you wish to be a Member of Parliament. The first lesson that you must learn is, when I call for statistics about the rate of infant mortality, what I want is proof that fewer babies died when I was Prime Minister than when anyone else was Prime Minister. That is a political statistic.

WINSTON SPENCER CHURCHILL

I am always ready to learn, but I do not always like being taught.

WINSTON SPENCER CHURCHILL

That is probable which for the most part usually comes to pass, or which is a part of the ordinary beliefs of mankind.

MARCUS TULLIUS CICERO  
*De Inv. 46*

Nihil tam absurde dici potest, quod non dicatur ab aliquo philosophorum.  
*There is nothing so ridiculous but some philosopher has said it.*

MARCUS TULLIUS CICERO  
*De Divinatione*

When you wish to instruct, be brief; that men's minds take in quickly what you say, learn its lesson, and retain it faithfully. Every word that is unnecessary only pours over the side of a brimming mind.

MARCUS TULLIUS CICERO



It was one thing to have guessed it, another to have had that guess confirmed beyond possibility of refutation.

ARTHUR C. CLARKE  
*The City and the Stars (1953)*

When a distinguished but elderly scientist states that something is possible, he is almost certainly right. When he states that something is impossible, he is very probably wrong. When, however, the lay public rallies round an idea that is denounced by distinguished but elderly scientists and supports that idea with great fervour and emotion—the distinguished but elderly scientists are then, after all, probably right.

ARTHUR C. CLARKE  
*Profiles of the Future (1962)*

But the only way of discovering the limits of the possible is to venture a little way past them into the impossible.

ARTHUR C. CLARKE  
*Profiles of the Future (1962)*

Any sufficiently advanced technology is indistinguishable from magic.

ARTHUR C. CLARKE  
*Profiles of the Future (1962)*

Once you can reproduce a phenomenon, you are well on the way to understanding it.

ARTHUR C. CLARKE  
*The Winds of Space (1965)*

HAL: I can tell from your voice harmonics, Dave, that you're badly upset. Why don't you take a stress pill and get some rest?

ARTHUR C. CLARKE  
*2001: A Space Odyssey (film, 1968)*

Those meaningless and unanswerable questions the minds keep returning to, like a tongue exploring a broken tooth.

ARTHUR C. CLARKE  
*Transit of Earth (1971)*

When all else failed, you had to rely on eyeball instrumentation.

ARTHUR C. CLARKE  
*Rendezvous With Rama (1973)*

Training was one thing, reality another.

ARTHUR C. CLARKE  
*Rendezvous With Rama (1973)*

Getting information from the internet is like getting a glass of water from the Niagara Falls.

ARTHUR C. CLARKE  
*Observer, Quotes of the Year, 31-Dec-2000*

A faith that cannot survive collision with the truth is not worth many regrets.

ARTHUR C. CLARKE

Reading computer manuals without the hardware is as frustrating as reading sex manuals without the software.

ARTHUR C. CLARKE

Statistics are no substitute for judgment.

HENRY CLAY  
*(1850)*

Human beings are prone to believe the things they wish were true.

HAL CLEMENT  
*Close to Critical (1958)*

Some things are too hard to believe, however entertaining they might be to hear or read.

HAL CLEMENT  
*The Nitrogen Fix (1980)*

We may always depend upon it that algebra, which cannot be translated into good English and sound common sense, is bad algebra.

WILLIAM KINGDON CLIFFORD  
*Common Sense in the Exact Sciences (1885), Ch. 1 sec. 7*

For every credibility gap, there is a gullibility fill.

R. CLOPTON

*Action will furnish belief,—but will that belief be the true one? This is the point, you know.*

ARTHUR HUGH CLOUGH  
*Amours de voyage (1858) v.ii*

If you torture the data long enough, it will confess.

RONALD COASE

Never believe anything until it has been officially denied.

CLAUD COCKBURN

I can't imagine anything which isn't possible through imagination.

JOHN ANDREW COFFIN

Truth is shorter than fiction.

IRWIN COHEN

A lot of people I know believe in positive thinking, and so do I. I believe everything positively stinks.

LEW COL

That willing suspension of disbelief for the moment, which constitutes poetic faith.

SAMUEL TAYLOR COLERIDGE  
*Biographia Literaria (1817) ch. 14*

Men, I think, have to be weighed, not counted.

SAMUEL TAYLOR COLERIDGE

Economist Uses Theory to Explain Economy.

COLLINSVILLE HERALD-JOURNAL  
*headline*

When you have nothing to say, say nothing.

CHARLES CALEB COLTON  
*Lacon (1820) I:183*

Examinations are formidable even to the best prepared, for the greatest fool may ask more than the wisest men can answer.

CHARLES CALEB COLTON  
*Lacon (1820) I:322*

There is more difference within the sexes than between them.

IVY COMPTON-BURNETT  
*Mother and Son (1955), Ch. 10*

Prévoir pour pouvoir.  
(*Foreknowledge is power.*)

AUGUSTE COMTE

Study the past, if you would divine the future.

CONFUCIUS

*Analects*

Learning without thought is labor lost; thought without learning is perilous.

CONFUCIUS

*Analects*

Rotten wood cannot be carved.

CONFUCIUS

*Analects*

Real knowledge is to know the extent of one's ignorance.

CONFUCIUS

A man who has committed a mistake and doesn't correct it is committing another mistake.

CONFUCIUS

A common man marvels at uncommon things; a wise man marvels at the commonplace.

CONFUCIUS

If language is not correct, then what is said is not what is meant; if what is said is not what is meant, then what must be done remains undone; if this remains undone, morals and art will deteriorate; if justice goes astray, the people will stand about in helpless confusion. Hence there must be no arbitrariness in what is said. This matters above everything.

CONFUCIUS

By three methods we may learn wisdom: First, by reflection, which is noblest; Second, by imitation, which is easiest; and third by experience, which is the bitterest.

CONFUCIUS

We exchanged many frank words in our respective languages.

PETER COOK

*Beyond the Fringe*

Programming today is a race between software engineers striving to build bigger and better idiot-proof programs, and the Universe trying to produce bigger and better idiots. So far, the Universe is winning.

RICH COOK

As an absurdity it was so colossal that it took on the air of a great truth.

WILLIAM COOPER

*Scenes from Provincial Life, IV, Ch. 4*

Mathemata mathematicus scribuntur.

(*Mathematics is written for mathematicians.*)

NICHOLAUS COPERNICUS

*De Revolutionibus (1543), Preface*

Behind the wall, the gods play; they play with numbers, of which the universe is made.

LE CORBUSIER

Between 1984 and 1988 the number of centenarian men in Britain had gone up from 100 to 210. According to my pocket calculator, if this alarming trend continues, in a mere sixty-six years' time the entire male population of this country will be over 100.

ALAN COREN

*Seems Like Old Times (1991), 'February'*

The generation of random numbers is too important to be left to chance.

ROBERT R. COVEYOU

People tend to assume everyone else should think the same way they do, and this contributes to much human misery.

KEITH COWAN

The objective of statistical analysis is to discover what conclusions can be drawn from data and to present these conclusions in as simple and lucid a form as is consistent with accuracy.

D. R. COX AND E. J. SNELL  
*Applied Statistics (1981), section 4.1*

The one real object of education is to leave a man in the condition of continually asking questions.

BISHOP MANDELL CREIGHTON

Theories are just fantasies. And they change.

MICHAEL CRICHTON

Chance is the only source of true novelty.

FRANCIS HARRY COMPTON CRICK  
*Life Itself (1982)*

In my experience most mathematicians are intellectually lazy and especially dislike reading experimental papers. He [René Thom] seemed to have very strong biological intuitions but unfortunately of negative sign.

FRANCIS HARRY COMPTON CRICK  
*What Mad Pursuit (1988)*

... it occurred to me that if the automobile had followed the same development cycle as the computer, a Rolls-Royce would today cost \$100, get a million miles per gallon, and explode once a year, killing everyone.

ROBERT X. CRINGELY  
*InfoWorld, 6-Mar-1989*

To say a thing is natural is to condone it, never to praise it.

QUENTIN CRISP  
*(5-Feb-1978)*

Health consists of having the same diseases as one's neighbors.

QUENTIN CRISP

I beseech you, in the bowels of Christ, think it possible you may be mistaken.

OLIVER CROMWELL  
*Letter to the Church of Scotland (3-Aug-1650)*

all ignorance toboggans into know  
and trudges up to ignorance again.

E. E. CUMMINGS  
*(1959)*

There are, of course, several things in Ontario that are more dangerous than wolves. For instance, the step-ladder.

J. W. CURRAN

Inability is often the mother of restriction, and restriction is the great mother of inventive performance.

HOLGER CZUKAY

If a train station is where the train stops, what's a work station?

ROGER B. DANNENBERG

A mathematician is a blind man in a dark room looking for a black cat which isn't there.

CHARLES R. DARWIN

I'll play with it first and tell you what it is later.

MILES DAVIS

All too many mathematical textbooks today have a nervous, breathless quality in which a fixed goal is systematically and inexorably pursued. The goal having been attained, one is left not with a feeling of exhilaration but of anticlimax. Nowhere in such books is any appreciation to be found of why or how the goal is important, other, possibly, than the statement that the goal may now be used as the starting point for reaching other, deeper goals, which considerations of space, alas, prevent the author from pursuing. Blame it on Euclid, if you want, for the tendency was already in his exposition.

PHILIP J. DAVIS & REUBEN HERSH

*The Mathematical Experience (1983), Chapter 3*

Most writers on the subject seem to agree that the typical working mathematician is a Platonist on weekdays and a formalist on Sundays.

PHILIP J. DAVIS & REUBEN HERSH

*The Mathematical Experience (1983), Chapter 7*

In the realm of ideas, of mental objects, those ideas whose properties are reproducible are called mathematical objects, and *the study of mental objects with reproducible properties is called mathematics*.

PHILIP J. DAVIS & REUBEN HERSH

*The Mathematical Experience (1983), Chapter 8*

As mathematicians, we know that we invent ideal objects, and then try to discover the facts about them. Any philosophy which cannot accommodate this knowledge is too small. We need not retreat to formalism when attacked by philosophers. Neither do we have to admit that our belief in the objectivity of mathematical truth is Platonic in the sense of requiring an ideal reality apart from human thought. Lakatos' and Popper's work shows that modern philosophy is capable of accepting the truth of mathematical experience. This means accepting the legitimacy of mathematics as it is: fallible, correctible, and meaningful.

PHILIP J. DAVIS & REUBEN HERSH

*The Mathematical Experience (1983), Chapter 8*

"Just go on," Jean Le Rond d'Alembert is supposed to have assured a hesitating mathematical friend, "and faith [in infinitesimals] will soon return."

PHILIP J. DAVIS & REUBEN HERSH

*The Mathematical Experience (1983)*

The most important of my discoveries have been suggested to me by my failures.

HUMPHREY DAVY

Language is not only the vehicle of thought, it is a great and efficient instrument in thinking.

HUMPHREY DAVY

Suppose we loosely define a religion as any discipline whose foundations rest on an element of faith, irrespective of any element of reason which may be present. Quantum mechanics for example would be a religion under this definition. But mathematics would hold the unique position of being the only branch of theology possessing a rigorous demonstration of the fact that it should be so classified.

F. DE SUA

(1956)

A marveilous newtrality have these things mathematicall, and also a strange participation between things supernaturall and things naturall.

JOHN DEE

I believe that professional wrestling is clean and everything else in the world is fixed.

FRANK DEFORD

A problem of statistical inference or, more simply, a statistics problem is a problem in which data that have been generated in accordance with some unknown probability distribution must be analyzed and some type of inference about the unknown distribution must be made.

M. H. DEGROOT  
*Probability and Statistics (2nd ed. 1989)*

Misinterpretation is the most deadly of human sins.

LESTER DEL REY  
*Pstalemate (1971)*

The only useful function of a statistician is to make predictions, and thus to provide a basis for action.

WILLIAM EDWARDS DEMING  
*JASA*

It is not necessary to change. Survival is not mandatory.

WILLIAM EDWARDS DEMING

Nothing exists except atoms and empty space; everything else is opinion.

DEMOCRITES OF ABDERA  
*Diogenes Laertius IX*

Nothing is so easy as to deceive one's self; for what we wish, that we readily believe.

DEMOSTHENES

The juvenile sea squirt wanders through the sea searching for a suitable rock or hunk of coral to cling to and make its home for life. For this task, it has a rudimentary nervous system. When it finds its spot and takes root, it doesn't need its brain anymore so it eats it! (It's rather like getting tenure.)

DANIEL C. DENNETT  
*Consciousness Explained (1991)*

There is no such thing as philosophy-free science; there is only science whose philosophical baggage is taken on board without examination.

DANIEL C. DENNETT

... thus each truth discovered was a rule available in the discovery of subsequent ones.

RENÉ DESCARTES  
*Discourse on Method (1637)*

For to be possessed of a vigorous mind is not enough; the prime requisite is rightly to apply it.

RENÉ DESCARTES  
*Discourse on Method (1637)*

If you would be a real seeker after truth, you must at least once in your life doubt, as far as possible, all things.

RENÉ DESCARTES  
*Discourse on Method (1637)*

It is very certain that, when it is not in our power to determine what is true, we ought to act according to what is most probable.

RENÉ DESCARTES  
*Discourse on Method (1637)*

I hope that posterity will judge me kindly, not only as to the things which I have explained, but also as to those which I have intentionally omitted so as to leave to others the pleasure of discovery.

RENÉ DESCARTES  
*(1637)*

I write when I'm inspired, and I see to it that I'm inspired at nine o'clock every morning.

PETER DEVRIES  
*Observer, Sayings of the Week, 28-Sept-1980*

We have already noticed the difference in the attitude of a spectator and of an agent or participant. The former is indifferent to what is going on; one result is just as good as another, since each is just something to look at. The latter is bound up with what is going on; its outcome makes a difference to him.

JOHN DEWEY  
*Democracy and Education (1916), Ch. 10*

It (*science*) involves an intelligent and persistent endeavor to revise current beliefs so as to weed out what is erroneous, to add to their accuracy, and, above all, to give them such shape that the dependencies of the various facts upon one another may be as obvious as possible.

JOHN DEWEY  
*Democracy and Education (1916), Ch. 13*

The empiric easily degenerates into the quack. He does not know where his knowledge begins or leaves off, and so when he gets beyond routine conditions he begins to pretend—to make claims for which there is no justification, and to trust to luck and to ability to impose upon others—to “bluff.”

JOHN DEWEY  
*Democracy and Education (1916), Ch. 20*

We only think when confronted with a problem.

JOHN DEWEY

Those who refused to respond to new stimulus would perish. Adapt or perish.

PHILIP K. DICK  
*Time Out of Joint (1959)*

Sometimes one must try anything, it is no disgrace. On the contrary, it is a sign of wisdom.

PHILIP K. DICK  
*The Man in the High Castle (1962)*

I'm not much but I'm all I have.

PHILIP K. DICK  
*Martian Time Slip (1964)*

I never liked the idea of doing what a machine says. I hate having to salute something built in a factory.

PHILIP K. DICK  
*(1976)*

It's not what happened but how it is told.

PHILIP K. DICK  
*(1976)*

Reality is that which, when you stop believing in it, doesn't go away.

PHILIP K. DICK  
*How to Build A Universe That Doesn't Fall Apart Two Days Later (1978)*

Either I've invented a whole new logic or, ahem, I'm not playing with a full deck.

PHILIP K. DICK  
*(1978)*

How much of what we call 'reality' is actually out there or rather within our own head?

PHILIP K. DICK  
*(1978)*

Can we consider the universe real, and if so, in what way?

PHILIP K. DICK  
*(1978)*

Should we have a leader or should we think for ourselves? Obviously the latter in principle. But—sometimes there lies a gulf between what is theoretically right and that which is practical.

PHILIP K. DICK  
(1978)

It is futile to try to make the universe add up. But I guess we must go on anyhow.

PHILIP K. DICK  
(1981)

What is possible and what is not possible is not objectively known but is, rather, a subjective belief on the part of the author and of the reader.

PHILIP K. DICK  
(1981)

The bearings of this observation lays in the application of it.

CHARLES DICKENS  
*Dombey and Son* (1848) ch. 23

Now what I want is Facts . . . Facts alone are wanted in life.

CHARLES DICKENS  
*Hard Times* (1854) bk. 1, ch. 1

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. It is essential that the observation of nature be assiduous, that reflection be profound, and that experimentation be exact. Rarely does one see these abilities in combination. And so, creative geniuses are not common.

DENIS DIDEROT  
*On the Interpretation of Nature* (1753), XV

I think that there is a moral to this story, namely that it is more important to have beauty in one's equations than to have them fit experiment. If Schroedinger had been more confident of his work, he could have published it some months earlier, and he could have published a more accurate equation . . . It seems that if one is working from the point of view of getting beauty in one's equations, and if one has really a sound insight, one is on a sure line of progress. If there is not complete agreement between the results of one's work and experiment, one should not allow oneself to be too discouraged, because the discrepancy may well be due to minor features that are not properly taken into account and that will get cleared up with further development of the theory.

PAUL ADRIEN MAURICE DIRAC  
*Scientific American* (May 1963)

Mathematics is the tool specially suited for dealing with abstract concepts of any kind and there is no limit to its power in this field.

PAUL ADRIEN MAURICE DIRAC

Computer Science is no more about computers than astronomy is about telescopes.

EDSGER WYBE DIJKSTRA

If you can dream it, you can do it.

WALT DISNEY

It's kind of fun to do the impossible.

WALT DISNEY

I hate definitions.

BENJAMIN DISRAELI  
*Vivian Grey* (1826)

Where knowledge ends, religion begins.

BENJAMIN DISRAELI



It is much easier to be critical than to be correct.

BENJAMIN DISRAELI

To be conscious that you are ignorant is a great step to knowledge.

BENJAMIN DISRAELI

As a rule, he or she who has the most information will have the greatest success in life.

BENJAMIN DISRAELI

You know how dumb the average guy is? Well, by definition, half of them are even dumber than *that*

J. R. 'BOB' DOBBS

The average Ph.D. thesis is nothing but a transference of bones from one graveyard to another.

J. FRANK DOBIE  
*A Texan in England (1945)*

The best way to accelerate a Macintosh is at 9.8 m/sec/sec.

MARCUS DOLENGO

Basic research is not the same as development. A crash programme for the latter may be successful; but for the former it is like trying to make nine women pregnant at once in the hope of getting a baby in a month's time.

SIR WILLIAM RICHARD SHABOE DOLL  
*New Scientist, 18-Nov-1976, page 375*

How often have I said to you that when you have eliminated the impossible, whatever remains, *however improbable*, must be the truth?

SIR ARTHUR CONAN DOYLE  
*The Sign of Four (1890) ch. 6*

You know my methods. Apply them.

SIR ARTHUR CONAN DOYLE  
*The Sign of Four (1890) ch. 6*

You see, but you do not observe.

SIR ARTHUR CONAN DOYLE  
*The Adventures of Sherlock Holmes (1892) 'A Scandal in Bohemia'*

It is a capital mistake to theorise before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts.

SIR ARTHUR CONAN DOYLE  
*The Adventures of Sherlock Holmes (1892) 'A Scandal in Bohemia'*

My life is spent in one long effort to escape from the commonplaces of existence. These little problems help me to do so.

SIR ARTHUR CONAN DOYLE  
*The Adventures of Sherlock Holmes (1892) 'The Red-headed League'*

Depend upon it, there is nothing so unnatural as the commonplace.

SIR ARTHUR CONAN DOYLE  
*The Adventures of Sherlock Holmes (1892) 'A Case of Identity'*

It has long been an axiom of mine that the little things are infinitely the most important.

SIR ARTHUR CONAN DOYLE  
*The Adventures of Sherlock Holmes (1892) 'A Case of Identity'*

It is true that you have missed everything of importance, but you have hit upon the method.

SIR ARTHUR CONAN DOYLE  
*The Adventures of Sherlock Holmes (1892) 'A Case of Identity'*

You know my method. It is founded upon the observance of trifles.

SIR ARTHUR CONAN DOYLE

*The Adventures of Sherlock Holmes (1892) 'The Boscombe Valley Mystery'*

"I can see nothing," said I, handing it back to my friend.

"On the contrary, Watson, you can see everything. You fail, however, to reason from what you see. You are too timid in drawing your inferences."

SIR ARTHUR CONAN DOYLE

*The Adventures of Sherlock Holmes (1892) 'The Adventure of the Blue Carbuncle'*

It is an old maxim of mine that when you have excluded the impossible, whatever remains, however improbable, must be the truth.

SIR ARTHUR CONAN DOYLE

*The Adventures of Sherlock Holmes (1892) 'The Adventure of the Beryl Coronet'*

"Data! data! data!" he cried impatiently. "I can't make bricks without clay."

SIR ARTHUR CONAN DOYLE

*The Adventures of Sherlock Holmes (1892) 'The Adventure of the Copper Beeches'*

Ah! my dear Watson, there we come into those realms of conjecture, where the most logical mind may be at fault. Each may form his own hypothesis upon the present evidence, and yours is as likely to be correct as mine.

SIR ARTHUR CONAN DOYLE

*The Return of Sherlock Holmes (1905) 'The Adventure of the Empty House'*

We all learn by experience, and your lesson this time is that you should never lose sight of the alternative.

SIR ARTHUR CONAN DOYLE

*The Return of Sherlock Holmes (1905) 'The Adventure of Black Peter'*

Still, it is an error to argue in front of your data. You find yourself insensibly twisting them round to fit your theories.

SIR ARTHUR CONAN DOYLE

*His Last Bow (1917) 'The Adventure of Wisteria Lodge'*

"You see everything."

"I see no more than you, but I have trained myself to notice what I see."

SIR ARTHUR CONAN DOYLE

*The Case-Book of Sherlock Holmes (1927) 'The Adventure of the Blanched Soldier'*

"That process," said I, "starts upon the supposition that when you have eliminated all which is impossible, then whatever remains, however improbable, must be the truth."

SIR ARTHUR CONAN DOYLE

*The Case-Book of Sherlock Holmes (1927) 'The Adventure of the Blanched Soldier'*

One forms provisional theories and then waits for time or fuller knowledge to explode them.

SIR ARTHUR CONAN DOYLE

*The Case-Book of Sherlock Holmes (1927) 'The Adventure of the Sussex Vampire'*

'I don't admit that a fresh illustration is an explanation,' said I with some asperity. 'Bravo, Watson! A very dignified and logical remonstrance.'

SIR ARTHUR CONAN DOYLE

*'The Disappearance of Lady Frances Carfax'*

As I get older I seem to believe less and less and yet to believe what I do believe more and more.

BISHOP OF DURHAM

*Observer, Sayings of the Week, 6-Nov-1988*

You know, Billy is a very sensitive child. . . . He's a *peculiarly* sensitive child—I'm afraid he's not quite like other children, and he simply *hates* Mathematics.

RUTH DRAPER  
*The Italian Lesson*

If a coin falls heads repeatedly one hundred times; then the statistically ignorant would claim that the 'law of averages' must almost compel it to fall tails next time, any statistician would point out the independence of each trial, and the uncertainty of the next outcome. But any fool can see that the coin must be double headed.

LUDWIK DRAZWK

There is nothing so useless as doing efficiently that which should not be done at all.

PETER F. DRUCKER

Wherever you see a successful business, someone once made a courageous decision.

PETER F. DRUCKER

Consequences, shmonsequences! So long as I'm rich!

DAFFY DUCK

All generalizations are dangerous, even this one.

ALEXANDRE DUMAS

Logic, like whiskey, loses its beneficial effect when taken in too large quantities.

LORD DUNSANY

Education is a progressive discovery of our own ignorance.

WILL DURANT

It takes immense genius to represent, simply and sincerely, what we see right in front of us.

EDMOND DURANTY

And since geometry is the right foundation of all painting, I have decided to teach its rudiments and principles to all youngsters eager for art. . . .

ALBRECHT DÜRER  
*Course in the Art of Measurement*

If you want a guarantee, buy a toaster.

CLINT EASTWOOD

History teaches that men and nations behave wisely once they have exhausted all other alternatives.

ABBA EBAN  
*Speech, 16-Dec-1970*

His ignorance is encyclopaedic.

ABBA EBAN

Science is not a sacred cow. Science is a horse. Don't worship it. Feed it.

AUBREY EBEN

[A novel is] a machine for generating interpretations.

UMBERT ECO  
*Observer, 7-Apr-1985*

Human life is proverbially uncertain; few things are more certain than the solvency of a life-insurance company.

SIR ARTHUR STANLEY EDDINGTON

It is also a good rule not to put overmuch confidence in the observational results that are put forward until they are confirmed by theory.

SIR ARTHUR STANLEY EDDINGTON

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

Genius is one percent inspiration, ninety-nine percent perspiration.

THOMAS ALVA EDISON  
(1903)

I believe that the motion picture is destined to revolutionize our educational system and that in a few years it will supplant largely, if not entirely, the use of textbooks.

THOMAS ALVA EDISON  
(1922)

We don’t know a millionth of one percent about anything.

THOMAS ALVA EDISON

I have not failed. I’ve just found 10,000 ways that won’t work.

THOMAS ALVA EDISON

Just because something doesn’t do what you planned it to do doesn’t mean it’s useless.

THOMAS ALVA EDISON

I am not discouraged, because every wrong attempt discarded is another step forward.

THOMAS ALVA EDISON

There is no expedient to which a man will not go to avoid the labor of thinking.

THOMAS ALVA EDISON

What used to be called prejudice is now called a null hypothesis.

A. W. F. EDWARDS  
*Nature 233: 18*

### **Why God Never Received Tenure at the University**

1. Because He had only one major publication.
2. And it was in Hebrew.
3. And it had no references.
4. And it wasn’t published in a refereed journal.
5. And some even doubt He wrote it himself.
6. It may be true that He created the world but what has He published/done since ?
7. His cooperative efforts have been quite limited.
8. The scientific community has had a very rough time trying to repeat His results.

ALON EFRAT

A theory has only the alternative of being right or wrong. A model has a third possibility: it may be right, but irrelevant.

MANFRED EIGEN  
*The Physicist’s Conception of Nature (1973), ed. Jagdish Mehra*

Raffiniert ist der Herr Gott, aber boshaft ist er nicht.

(*God is subtle, but he is not malicious.*)

ALBERT EINSTEIN  
*Remark, May 1921*

As far as the laws of mathematics refer to reality, they are not certain; and as far as they are certain, they do not refer to reality.

ALBERT EINSTEIN  
*Address to Prussian Academy of Science, 27-Jan-1921*

If my theory of relativity is proven successful, Germany will claim me as a German and France will declare that I am a citizen of the world. Should my theory prove untrue, France will say that I am a German and Germany will declare that I am a Jew.

ALBERT EINSTEIN  
*Address at the Sorbonne, Paris (1929).*

I never think of the future. It comes soon enough.

ALBERT EINSTEIN  
*Interview (Dec. 1930)*

Most of the fundamental ideas of science are essentially simple, and may, as a rule, be expressed in a language comprehensible to everyone.

ALBERT EINSTEIN  
*The Evolution of Physics (1938)*

God does not care about our mathematical difficulties. He integrates empirically.

ALBERT EINSTEIN  
*in L. Infeld, 'Quest' (1942)*

Perfection of means and confusion of goals seem, in my opinion, to characterize our age.

ALBERT EINSTEIN  
*Out of My Later Years (1950)*

I am enough of an artist to draw freely upon my imagination. Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world.

ALBERT EINSTEIN  
*On Science*

Commonsense is nothing more than a deposit of prejudices laid down by the mind before you reach eighteen.

ALBERT EINSTEIN  
*in E. T. Bell 'Mathematics, Queen and Servant of the Sciences' (1952)*

I learned many years ago never to waste time trying to convince my colleagues.

ALBERT EINSTEIN  
*in R. G. Colodny ed., 'Logic, Laws and Life' (1977)*

Everything should be made as simple as possible, but not simpler.

ALBERT EINSTEIN  
*quoted in 'Reader's Digest', Oct. 1977*

The human mind has first to construct forms, independently, before we can find them in things.

ALBERT EINSTEIN

We should take care not to make the intellect our god; it has, of course, powerful muscles, but no personality.

ALBERT EINSTEIN

If we knew what we were doing, it wouldn't be called research, would it?

ALBERT EINSTEIN

The most incomprehensible thing about the world is that it is comprehensible.

ALBERT EINSTEIN

Art is the expression of the profoundest thoughts in the simplest way.

ALBERT EINSTEIN

But in physics I soon learned to scent out the paths that led to the depths, and to disregard everything else, all the many things that clutter up the mind, and divert it from the essential. The hitch in all this was, of course, the fact that one had to cram all this stuff into ones mind for the examination, whether one liked it or not.

ALBERT EINSTEIN

Gott würfelt nicht.

*(God does not play dice.)*

ALBERT EINSTEIN

Reality is merely an illusion, albeit a very persistent one.

ALBERT EINSTEIN

When I examine myself and my methods of thought, I come to the conclusion that the gift of fantasy has meant more to me than my talent for absorbing positive knowledge.

ALBERT EINSTEIN

The formulation of a problem is often more essential than its solution which may be merely a matter of mathematical or experimental skill.

ALBERT EINSTEIN

Not everything that can be counted counts; and not everything that counts can be counted.

ALBERT EINSTEIN

Only two things are infinite, the universe and human stupidity, and I'm not sure about the former.

ALBERT EINSTEIN

Don't be too hard on me. Everyone has to sacrifice at the altar of stupidity from time to time.

ALBERT EINSTEIN

The important thing is not to stop questioning.

ALBERT EINSTEIN

No amount of experimentation can ever prove me right; a single experiment can prove me wrong.

ALBERT EINSTEIN

If I can't picture it, I can't understand it.

ALBERT EINSTEIN

The right to search for the truth implies also a duty; one must not conceal any part of what one has recognized to be the truth.

ALBERT EINSTEIN

The wireless telegraph is not difficult to understand. The ordinary telegraph is like a very long cat. You pull the tail in New York, and it meows in Los Angeles. The wireless is the same, only without the cat.

ALBERT EINSTEIN

If the facts don't fit the theory, change the facts.

ALBERT EINSTEIN

Marvellous, what ideas the young people have these days. But I don't believe a word of it.

ALBERT EINSTEIN

If a cluttered desk signs a cluttered mind,  
Of what, then, is an empty desk a sign?

ALBERT EINSTEIN

The search for truth is more precious than its possession.

ALBERT EINSTEIN

Everything that is really great and inspiring is created by the individual who can labor in freedom.

ALBERT EINSTEIN

We should take care not to make the intellect our god; it has, of course, powerful muscles, but no personality.

ALBERT EINSTEIN

It is a miracle that curiosity survives formal education.

ALBERT EINSTEIN

It has become appallingly obvious that our technology has exceeded our humanity.

ALBERT EINSTEIN

What really interests me is whether God had any choice in the creation of the world.

ALBERT EINSTEIN

I want to know God's thoughts. . . the rest are details.

ALBERT EINSTEIN

It is a precarious undertaking to say anything reliable about aims and intentions.

ALBERT EINSTEIN

The further the spiritual evolution of mankind advances, the more certain it seems to me that the path to genuine religiosity does not lie through the fear of life, and the fear of death, and blind faith, but through striving after rational knowledge.

ALBERT EINSTEIN

Things are more like they are now than they ever were before.

DWIGHT D. EISENHOWER

Plans are nothing. Planning is everything.

DWIGHT D. EISENHOWER

Farming looks easy when your plow is a pencil and you're a thousand miles from a cornfield.

DWIGHT D. EISENHOWER

Blessed is the man who, having nothing to say, abstains from giving in words evidence of the fact.

GEORGE ELIOT

*Impressions of Theophrastus Such (1879)*

A good deal of confusion could be avoided, if we refrained from setting before the group, what can be the aim only of the individual; and before society as a whole, what can be the aim only of the group.

T. S. ELIOT

*Mass Civilization and Minority Culture*

Where is the wisdom we have lost in knowledge? Where is the knowledge we have lost in information?

T. S. ELIOT

*The Rock (1934)*

You are in big trouble when you start writing software to impress girls.

BRUCE ELLIS

*The Hitchhiker's Guide to VMS*

What we call 'progress' is the exchange of one nuisance for another nuisance.

HENRY HAVELOCK ELLIS

*Impressions and Comments (1914) 31-July-1912*

It is here [in mathematics] that the artist has the fullest scope of his imagination.

HENRY HAVELOCK ELLIS

*The Dance of Life (1923)*

BLACKADDER: Try again. One... two... three... *four!* So how many are there?

BALDRICK: Three.

BLACKADDER: What?

BALDRICK: ...and that one.

BEN ELTON

*Blackadder II: Head (1986)*

BALDRICK: I think I can explain, sir.

BLACKADDER: Can you, Baldrick?

BALDRICK: ...No.

BEN ELTON

*Blackadder IV: Corporal Punishment (1989)*

A foolish consistency is the hobgoblin of little minds, adored by little statesmen and philosophers and divines. With consistency a great soul has simply nothing to do.

RALPH WALDO EMERSON

*Essays (1841): Self Reliance*

Every opinion reacts on him who utters it.

RALPH WALDO EMERSON

*Essays (1841): Compensation*

People see only what they are prepared to see.

RALPH WALDO EMERSON

*Journals (1863)*

In my walks, every man I meet is my superior in some way, and in that I learn from him.

RALPH WALDO EMERSON

There is no knowledge that is not power.

RALPH WALDO EMERSON

I wish to say what I think & feel today, with the proviso that tomorrow perhaps I shall contradict it all.

RALPH WALDO EMERSON

The religion that is afraid of science dishonors God and commits suicide.

RALPH WALDO EMERSON

The things taught in colleges and schools are not an education, but the means of education.

RALPH WALDO EMERSON

By necessity, by proclivity, and by delight, we all quote. In fact, it is as difficult to appropriate the thoughts of others as it is to invent.

RALPH WALDO EMERSON

Do not go where the path may lead; go instead where there is no path and leave a trail.

RALPH WALDO EMERSON

Truth is beautiful, without doubt; but so are lies.

RALPH WALDO EMERSON

In science, each new point of view calls forth a revolution in nomenclature.

FRIEDRICH ENGELS

*Marr-Engels Collected Works*

An ounce of action is worth a ton of theory.

FRIEDRICH ENGELS



Without analysis, no synthesis.

FRIEDRICH ENGELS

Make an exhaustive list of everything you might do & do the last thing on the list.

BRIAN ENO AND PETER SCHMIDT

*Oblique Strategies (1975)*

It is impossible for a man to learn what he thinks he already knows.

EPICETETUS

Nothing is enough for the man for whom enough is too little.

EPICURUS

The abdomen, the chest, and the brain will forever be shut from the intrusion of the wise and humane surgeon.

SIR JOHN ERIC ERICKSEN

Although to penetrate into the intimate mysteries of nature and thence to learn the true causes of phenomena is not allowed to us, nevertheless it can happen that a certain fictive hypothesis may suffice for explaining many phenomena.

LEONHARD EULER

*(1748)*

Chance fights ever on the side of the prudent.

EURIPIDES

Talk sense to a fool and he calls you foolish.

EURIPIDES

A formal manipulator in mathematics often experiences the discomfoting feeling that his pencil surpasses him in intelligence.

HOWARD W. EVES

*In Mathematical Circles (1969)*

When it is not necessary to change, it is necessary not to change.

LUCIUS CARY (LORD FALKLAND)

*Discourses of Infallibility (1660)*

It is rather naive to think that, just because two entities are intelligent, they can and will find ways to talk to each other.

NEWTON FALL

*Nomvenian Chronicles*

The lecturer should give the audience full reason to believe that all his powers have been exerted for their pleasure and instruction.

MICHAEL FARADAY

Work, finish, publish.

MICHAEL FARADAY

A centre of excellence is, by definition, a place where second class people may perform first class work.

MICHAEL FARADAY

To err is human, but to really foul things up requires a computer.

FARMERS' ALMANAC (1978)

Intellectual brilliance is no guarentee against being dead wrong.

DAVID FASOLD

Between grief and nothing I will take grief.

WILLIAM FAULKNER

An education isn't how much you have committed to memory, or even how much you know. It's being able to differentiate between what you do know and what you don't. It's knowing where to go to find out what you need to know; and it's knowing how to use the information you get.

WILLIAM FEATHER

Before I came here I was confused about this subject. Having listened to your lecture I am still confused. But on a higher level.

ENRICO FERMI

The principle of science, the definition, almost, is the following: The test of all knowledge is experiment. Experiment is the sole judge of scientific "truth." But what is the source of knowledge? Where do the laws that are to be tested come from? Experiment, itself, helps to produce these laws, in the sense that it gives us hints. But also needed is imagination to create from these hints the great generalizations—to guess at the wonderful, simple, but very strange patterns beneath them all, and then to experiment to check again whether we have made the right guess.

RICHARD PHILLIPS FEYNMAN

*The Feynman Lectures on Physics (1963)*

We have a habit in writing articles published in scientific journals to make the work as finished as possible, to cover up all the tracks, to not worry about the blind alleys or describe how you had the wrong idea at first, and so on. So there isn't any place to publish, in a dignified manner, what you actually did in order to get to do the work.

RICHARD PHILLIPS FEYNMAN

*Nobel Lecture (1966)*

It is necessary for the very existence of science that minds exist which do not allow that nature must satisfy some preconceived conditions.

RICHARD PHILLIPS FEYNMAN

*The Character of Physical Law (1967)*

Science is the belief in the ignorance of experts.

RICHARD PHILLIPS FEYNMAN

*What is Science? (1969)*

For a successful technology, reality must take precedence over public relations, for Nature cannot be fooled.

RICHARD PHILLIPS FEYNMAN

*What Do You Care What Other People Think? (1988)*

I was born not knowing and have had only a little time to change that here and there.

RICHARD PHILLIPS FEYNMAN

Our imagination is stretched to the utmost, not, as in fiction, to imagine things which are not really there, but just to comprehend those things which *are* there.

RICHARD PHILLIPS FEYNMAN

When a scientist doesn't know the answer to a problem, he is ignorant. When he has a hunch as to what the result is, he is uncertain. And when he is pretty darn sure of what the result is going to be, he is in some doubt.

RICHARD PHILLIPS FEYNMAN

When a scientist doesn't know the answer to a problem, he is ignorant. When he has a hunch as to what the result is, he is uncertain. And when he is pretty darn sure of what the result is going to be, he is in some doubt.

RICHARD PHILLIPS FEYNMAN

Economists state their GNP growth projections to the nearest tenth of a percentage point to prove they have a sense of humor.

EDGAR R. FIEDLER

Ask five economists and you'll get five different explanations (six if one went to Harvard).

EDGAR R. FIEDLER

I am free of all prejudices. I hate everyone equally.

W. C. FIELDS

Horse sense is the thing a horse has which keeps it from betting on people.

W. C. FIELDS

The solution of problems is one of the lowest forms of mathematical research, . . . yet its educational value cannot be overestimated. It is the ladder by which the mind ascends into higher fields of original research and investigation. Many dormant minds have been aroused into activity through the mastery of a single problem.

BENJAMIN FRANKLIN FINKEL

*American Mathematical Monthly, no. 1*

One of the main causes of the fall of the Roman Empire was that, lacking zero, they had no way to indicate successful termination of their C programs.

ROBERT FIRTH

To call in the statistician after the experiment is done may be no more than asking him to perform a post-mortem examination: he may be able to say what the experiment died of.

SIR RONALD AYLMER FISHER

*address to Indian Statistical Congress (1938?)*

Natural selection is a mechanism for generating an exceedingly high degree of improbability.

SIR RONALD AYLMER FISHER

"I was counting the waves", replied Amory gravely, "I'm going in for statistics".

F. SCOTT FITZGERALD

*This Side of Paradise (1920), bk. 2 ch. 4*

The test of a first-rate intelligence is the ability to hold two opposed ideas in the mind at the same time, and still retain the ability to function.

F. SCOTT FITZGERALD

*The Crack-Up (1936)*

You don't write because you want to say something. You write because you've got something to say.

F. SCOTT FITZGERALD

The only reason some people get lost in thought is because it's unfamiliar territory.

PAUL FIX

Nothing is more humiliating than to see idiots succeed in enterprises we have failed in.

GUSTAVE FLAUBERT

*Sentimental Education (1869)*

All you have to do to make something interesting is to look at it long enough.

GUSTAVE FLAUBERT

Education's purpose is to replace an empty mind with an open one.

MALCOLM S. FORBES

Whether you believe you can, or whether you believe you can't, you're absolutely right.

HENRY FORD

The best we can do is size up the chances, calculate the risks involved, estimate our ability to deal with them, and then make our plans with confidence.

HENRY FORD

Don't find fault, find a remedy.

HENRY FORD

Failure is the opportunity to begin again more intelligently.

HENRY FORD

Spoon feeding in the long run teaches us nothing but the shape of the spoon.

E. M. FORSTER

*Observer, Sayings of the Week, 7-Oct-1951*

I would rather live in a world where my life is surrounded by mystery than live in a world so small that my mind could comprehend it.

HARRY EMERSON FOSDICK

*Riverside Sermons (1958)*

It is always hard when reality intrudes on belief.

ALAN DEAN FOSTER

*Cyber Way*

To know is nothing at all; to imagine is everything.

ANATOLE FRANCE (JACQUES-ANATOLE-FRAN COIS THIBAUT)

*The Crime of Sylvester Bernard (1881)*

When a thing has been said and said well, have no scruple. Take it and copy it.

ANATOLE FRANCE (JACQUES-ANATOLE-FRAN COIS THIBAUT)

I prefer the errors of enthusiasm to the indifference of wisdom.

ANATOLE FRANCE (JACQUES-ANATOLE-FRAN COIS THIBAUT)

Chance is the pseudonym God uses when He'd rather not sign His own name.

ANATOLE FRANCE (JACQUES-ANATOLE-FRAN COIS THIBAUT)

If 50 million people believe a foolish thing, it is still a foolish thing.

ANATOLE FRANCE (JACQUES-ANATOLE-FRAN COIS THIBAUT)

An education isn't how much you have committed to memory, or even how much you know. It's being able to differentiate between what you do know and what you don't.

ANATOLE FRANCE (JACQUES-ANATOLE-FRAN COIS THIBAUT)

Start by doing what's necessary; then do what's possible; and suddenly you are doing the impossible.

ST. FRANCIS OF ASSISI

I continu'd this method some few years, but gradually left it, retaining only the habit of expressing myself in terms of modest diffidence; never using, when I advanced any thing that may possibly be disputed, the words certainly, undoubtedly, or any others that give the air of positiveness to an opinion; but rather say, I conceive or apprehend a thing to be so and so; it appears to me, or I should think it so or so, for such and such reasons; or I imagine it to be so; or it is so, if I am not mistaken. This habit, I believe, has been of great advantage to me when I have had occasion to inculcate my opinions, and persuade men into measures that I have been from time to time engag'd in promoting; and, as the chief ends of conversation are to inform or to be informed, to please or to persuade, I wish well-meaning, sensible men would not lessen their power of doing good by a positive, assuming manner, that seldom fails to disgust, tends to create opposition, and to defeat every one of those purposes for which speech was given to us, to wit, giving or receiving information or pleasure.

BENJAMIN FRANKLIN

*The Autobiography of Benjamin Franklin (1791)*

Man is a tool-making animal

BENJAMIN FRANKLIN

*quoted in Boswell's 'Life of Samuel Johnson' 7-Apr-1778*

All mankind is divided into three classes: those who are immovable, those who are movable; and those who move.

BENJAMIN FRANKLIN

Just as no one can be forced into belief, so no one can be forced into unbelief.

SIGMUND FREUD

*The Future of an Illusion (1927)*

The only relevant test of the validity of a hypothesis is comparison of prediction with experience.

MILTON FRIEDMAN

*Essays in Positive Economics (1953)*

We dance round in a ring and suppose,  
But the Secret sits in the middle and knows.

ROBERT FROST

*The Secret Sits (1942)*

Education is the ability to listen to almost anything without losing your temper.

ROBERT FROST

You can be a rank insider as well as a rank outsider.

ROBERT FROST

Love me or hate me, but spare me your indifference.

LIBBIE FUDIM

God, to me, it seems  
is a verb  
not a noun  
proper or improper.

RICHARD BUCKMINSTER FULLER

*No More Secondhand God (1963)*

Everything you've learned in school as "obvious" becomes less and less obvious as you begin to study the universe. For example, there are no solids in the universe. There's not even a suggestion of a solid. There are no absolute continuums. There are no surfaces. There are no straight lines.

RICHARD BUCKMINSTER FULLER

When I am working on a problem, I never think about beauty. I only think of how to solve the problem. But when I am finished, if the solution is not beautiful, I know it is wrong.

RICHARD BUCKMINSTER FULLER

All things are difficult before they are easy.

THOMAS FULLER

*We renounce* in a line, its descriptive value; in real life there are no descriptive lines, description is an accidental trace of a man on things, it is not bound up with the essential life and constant structure of the body.

NAUM GABO

*The Realistic Manifesto (1920)*

One of the best ways of avoiding necessary and even urgent tasks is to seem to be busily employed on things that are already done.

JOHN KENNETH GALBRAITH

*The Affluent Society (1958) ch. 2, sect. ii*

In the world of minor lunacy the behaviour of both the utterly rational and the totally insane seems equally odd.

JOHN KENNETH GALBRAITH  
*The Affluent Society (1958) ch. 20, sect. ii*

There can be no question, however, that prolonged commitment to mathematical exercises in economics can be damaging. It leads to the atrophy of judgement and intuition. . .

JOHN KENNETH GALBRAITH  
*Economics, Peace, and Laughter*

Politics is not the art of the possible. It consists in choosing between the disastrous and the unpalatable.

JOHN KENNETH GALBRAITH

The conventional view serves to protect us from the painful job of thinking.

JOHN KENNETH GALBRAITH

Economics is extremely useful as a form of employment for economists.

JOHN KENNETH GALBRAITH

When people are least sure, they are often most dogmatic.

JOHN KENNETH GALBRAITH

In questions of science the authority of a thousand is not worth the humble reasoning of a single individual.

GALILEO GALILEI  
*in Arago's Eulogy on Laplace; Smithsonian Report (1874) p. 164*

Measure what is measurable, and make measurable what is not so.

GALILEO GALILEI

I have never met a man so ignorant that I couldn't learn something from him.

GALILEO GALILEI

All truths are easy to understand once they are discovered; the point is to discover them.

GALILEO GALILEI

The Universe is a grand book which cannot be read until one first learns to comprehend the language and become familiar with the characters in which it is composed. It is written in the language of mathematics.

GALILEO GALILEI

A complex system that works is invariably found to have evolved from a simple system that worked.

JOHN GALL  
*Systemantics*

Whenever you can, count.

FRANCIS GALTON

I know of scarcely anything so apt to impress the imagination as the wonderful form of cosmic order expressed by the "Law of Frequency of Error". The law would have been personified by the Greeks and deified, if they had known of it. It reigns with serenity and in complete self-effacement, amidst the wildest confusion. The huger the mob, and the greater the apparent anarchy, the more perfect is its sway. It is the supreme law of Unreason. Whenever a large sample of chaotic elements are taken in hand and marshaled in the order of their magnitude, an unsuspected and most beautiful form of regularity proves to have been latent all along.

FRANCIS GALTON  
*In J. R. Newman (ed.) The World of Mathematics*

[Statistics are] the only tools by which an opening can be cut through the formidable thicket of difficulties that bars the path of those who pursue the Science of Man.

FRANCIS GALTON  
*quoted in: Karl Pearson, 'The Life, Letters and Labours of Francis Galton' (1914)*

It is unwise to be too sure of one's own wisdom. It is healthy to be reminded that the strongest might weaken and the wisest might err.

MAHATMA GANDHI

Mathematics is not only real, but it is the only reality. That is that entire universe is made of matter, obviously. And matter is made of particles. It's made of electrons and neutrons and protons. So the entire universe is made out of particles. Now what are the particles made out of? They're not made out of anything. The only thing you can say about the reality of an electron is to cite its mathematical properties. So there's a sense in which matter has completely dissolved and what is left is just a mathematical structure.

MARTIN GARDNER

*Focus 14, December 1994.*

Biographical history, as taught in our public schools, is still largely a history of boneheads: ridiculous kings and queens, paranoid political leaders, compulsive voyagers, ignorant generals—the flotsam and jetsam of historical currents. The men who radically altered history, the great scientists and mathematicians, are seldom mentioned, if at all.

MARTIN GARDNER

A painting is never finished—it simply stops in interesting places.

PAUL GARDNER

640K ought to be enough for anybody.

BILL GATES

*(1981)*

If you can't make it good, make it *look* good.

BILL GATES

*(1981)*

The obvious mathematical breakthrough would be development of an easy way to factor large prime numbers.

BILL GATES

*The Road Ahead*

Imagination is the one weapon in the war against reality.

JULES DE GAULTIER

It is not knowledge, but the act of learning, not possession but the act of getting there, which grants the greatest enjoyment. When I have clarified and exhausted a subject, then I turn away from it, in order to go into darkness again; the never-satisfied man is so strange if he has completed a structure, then it is not in order to dwell in it peacefully, but in order to begin another. I imagine the world conqueror must feel thus, who, after one kingdom is scarcely conquered, stretches out his arms for others.

KARL FRIEDRICH GAUSS

*Letter to Bolyai, 1808.*

I have had my results for a long time: but I do not yet know how I am to arrive at them.

KARL FRIEDRICH GAUSS

You know that I write slowly. This is chiefly because I am never satisfied until I have said as much as possible in a few words, and writing briefly takes far more time than writing at length.

KARL FRIEDRICH GAUSS

Lest men suspect your tale untrue,  
Keep probability in view.

JOHN GAY

*Fables (1727)*

BLASTER: Most human problems can be solved by an appropriate charge of high explosive.

JOE GAYTON  
*Uncommon Valor (film, 1983)*

The older I get, the more I believe that at the bottom of most deep mathematical problems there is a combinatorial problem.

I. M. GEL'FAND  
*Lecture to Courant Institute (1990)*

No one can possibly achieve any real and lasting success or get rich in business by being a conformist.

J. PAUL GETTY

The laws of probability, so true in general, so fallacious in particular.

EDWARD GIBBON

One of the principal objects of theoretical research in my department of knowledge is to find the point of view from which the subject appears in its greatest simplicity.

JOSIAH WILLARD GIBBS

Mathematics *is* a language

JOSIAH WILLARD GIBBS

Backward ran sentences until reeled the mind.

WOLCOTT GIBBS  
*New Yorker, 28 November 1936*

Perplexity is the beginning of knowledge.

KAHLIL GIBRAN

It doesn't matter how fast your modem is if you're being shelled by ethnic separatists.

WILLIAM GIBSON  
*'The Net', BBC interview 20-Jan-1997*

One does not discover new lands without consenting to lose sight of the shore for a very long time.

ANDRÉ GIDE

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

ANDRÉ GIDE

Merely corroborative detail, intended to give artistic verisimilitude to an otherwise bald and unconvincing narrative.

WILLIAM SCHWENCK GILBERT  
*The Mikado (1885), act 2*

The mathematician requires tact and good taste at every step of his work, and he has to learn to trust to his own instinct to distinguish between what is really worthy of his efforts and what is not.

JAMES WHITBREAD LEE GLAISHER

A science is any discipline in which the fool of this generation can go beyond the point reached by the genius of the last generation.

MAX GLUCKMAN

Self-respect to be nourished in the mind of the pupil, is one of the most valuable results of a well conducted education.

WILLIAM GODWIN  
*Thoughts on Man (1831): Of the Distribution of Talents*



It is however the rarest thing in the world, for any one to found his opinion, simply upon the evidence that presents itself to him of the truth of the proposition which comes before him to be examined. Where is the man that breaks loose from all the shackles that in his youth had been imposed upon him, and says to Truth, "Go on; whithersoever thou leadest, I am prepared to follow?" To weigh the evidence for and against a proposition, in scales so balanced, that the "division of the twentieth part of one poor scruple, the estimation of a hair," shall be recognised and submitted to, is the privilege of a mind of no ordinary fairness and firmness.

WILLIAM GODWIN  
*Thoughts on Man (1831): Of Belief*

Human mathematics, so to speak, like the length of life, are subject to the doctrine of chances.

WILLIAM GODWIN  
*Thoughts on Man (1831): Of Astronomy*

The subtleties of mathematics defecate the grossness of our apprehension, and supply the elements of a sounder and severer logic.

WILLIAM GODWIN  
*Thoughts on Man (1831): On the Material Universe*

Natur hat weder Kern  
Noch Schale.

(*Nature has neither kernel  
Nor shell.*)

JOHANN WOLFGANG VON GOETHE  
*Allerdings. Dem Physiker 1819/20*

Nothing is more terrible than to see ignorance in action.

JOHANN WOLFGANG VON GOETHE  
*Maxims and Reflections (1819)*

It has been said that figures rule the world. Maybe. But I am sure that figures show us whether it is being ruled well or badly.

JOHANN WOLFGANG VON GOETHE

It is not enough to have knowledge, one must also apply it. It is not enough to have wishes, one must also accomplish.

JOHANN WOLFGANG VON GOETHE

We are never deceived; we deceive ourselves.

JOHANN WOLFGANG VON GOETHE

When ideas fail, words come in very handy.

JOHANN WOLFGANG VON GOETHE

It is easier to perceive error than to find truth, for the former lies on the surface and is easily seen, while the latter lies in the depth, where few are willing to search for it.

JOHANN WOLFGANG VON GOETHE

The thinker makes a great mistake when he asks after cause and effect. They both together make up the indivisible phenomenon.

JOHANN WOLFGANG VON GOETHE

I can promise to be sincere, but not to be impartial.

JOHANN WOLFGANG VON GOETHE

Mathematicians are like Frenchmen: whatever you say to them they translate into their own language, and forthwith it is something entirely different.

JOHANN WOLFGANG VON GOETHE

‘Normal’ is nothing more than a cycle on a washing machine.

WHOOPI GOLDBERG

While modern technology has given people powerful new communication tools, it apparently can do nothing to alter the fact that many people have nothing useful to say.

LEE GOMES

*San Jose Mercury News*

[on Shere Hite] She goes in with a prejudice and comes out with a statistic.

ELLEN GOODMAN

*Time, October 12, 1987*

There are no deep theorems—only theorems that we have not understood very well.

NICHOLAS P. GOODMAN

*Mathematical Intelligencer* 5(3)

Either I’ve been missing something or nothing has been going on.

KAREN ELIZABETH GORDON

If arithmetic overflow is a fatal error, some fascist pig with a read-only mind is trying to enforce machine independence.

BILL GOSPER

*HAKMEM (MIT AI Memo 239, 1972), Item 154. Quoted in Jargon File 2.9.10 (1992), eds. Eric S. Raymond & Guy L. Steele*

The invalid assumption that correlation implies cause is probably among the two or three most serious and common errors of human reasoning.

STEPHEN JAY GOULD

*The Mismeasure of Man (1981)*

All science is intelligent inference; excessive literalism is delusion, not a humble bowing to evidence.

STEPHEN JAY GOULD

Theory-free science makes about as much sense as value-free politics.

STEPHEN JAY GOULD

No one-liner can ever be optimal.

STEPHEN JAY GOULD

Fantasy, abandoned by reason, produces impossible monsters; united with it, she is the mother of the arts and the origin of marvels.

GOYA

A few weeks later, still frustrated by this question, I came across a passage in Douglas Adams’ science fiction/comedy novel *The Hitchhiker’s Guide to the Galaxy*. There, Zaphod Beeblebrox, who has been acting unaccountably (even to himself), decides to run a series of tests on his two brains to see what is wrong. Having tried all the “standard” tests and having found nothing wrong, he proceeds to superimpose the X-rays of his two brains and look at the image through a green filter, which exposes, to his astonishment, the cauterized initials of the culprit who has been tampering with his heads!

It occurred to me to try a similar approach to our problem with Pascal’s triangle.

ANDREW GRANVILLE

*Zaphod Beeblebrox’s brain and the fifty-ninth row of Pascal’s triangle*

Economists draw straight lines through two points.

Psychologists draw straight lines through one point.

Sociologists do not require any points to draw straight lines.

Botanists can accumulate as many as 1.0E+09 points without drawing any lines.

Theoretical physicists use as many line segments as necessary to connect the points that they have.

CARLO GRAZIANI

*rec.humor.funny, 13-Nov-92*

The way to do research is to attack the facts at the point of greatest astonishment.

CELIA GREEN  
*The Decline and Fall of Science (1976)*

We all live to a formula. Maybe the secret lies in keeping that formula secret.

PETER GREENAWAY  
*Dear Boullée (1987)*

However great a man's fear of life . . . suicide remains the courageous act, the clear-headed act of a mathematician. The suicide has judged by the laws of chance—so many odds against one, that to live will be more miserable than to die. His sense of mathematics is greater than his sense of survival.

GRAHAM GREENE  
*The Comedians (1966) I.4.i*

What money can buy has very little value beyond the necessities of life.

GEORGE GRIFFITH  
*From Pole to Pole (1904)*

The little I know I owe to my ignorance.

SACHA GUITRY

GUIs normally make it simple to accomplish simple actions and impossible to accomplish complex actions.

DOUG GWYN  
*comp.unix.wizards, 22-June-1991*

My mother's menu consisted of two choices: Take it or leave it.

BUDDY HACKETT

The shortest path between two truths in the real domain passes through the complex domain.

JACQUES HADAMARD  
*in the 'Mathematical Intelligencer' 13(1), 1991*

The object of mathematical rigor is to sanction and legitimize the conquests of intuition, and there was never any other object for it.

JACQUES HADAMARD

This book fills a much-needed gap.

MOSES HADAS

Thank you for sending me a copy of your book. I'll waste no time reading it.

MOSES HADAS

Don't be afraid to ask dumb questions. They're more easily handled than dumb mistakes.

WILLIAM WISTER HAINES

When your hammer is C++, everything begins to look like a thumb.

STEVE HAFLICH  
*in comp.lang.c++*

I have no doubt that in reality the future will be vastly more surprising than anything I can imagine. Now my own suspicion is that the universe is not only queerer than we suppose, but queerer than we can suppose.

JOHN BURDON SANDERSON HALDANE  
*Possible Worlds and Other Papers (1927)*

'The results so far obtained are consistent with the view that...' has taken the place of 'Thus saith the Lord...' as an introduction to a new theory.

JOHN BURDON SANDERSON HALDANE  
*Possible Worlds (1927): The Duty of Doubt*

The great general is the man who stakes everything on his hypothesis while realizing that it is only a hypothesis and must be modified from moment to moment.

JOHN BURDON SANDERSON HALDANE  
*Possible Worlds (1927): The Duty of Doubt*

In scientific thought we adopt the simplest theory which will explain all the facts under consideration and enable us to predict new facts of the same kind. The catch in this criterion lies in the word 'simplest'. It is really an aesthetic canon such as we find implicit in our criticisms of poetry or painting.

JOHN BURDON SANDERSON HALDANE  
*Possible Worlds (1927): Science and theology as Art-Forms*

Christians almost all believe that prayer is sometimes answered. Now, all prayers are not answered, and desired events often occur for which no one has prayed. Hence individual instances of answered prayers are useless. We must have statistical evidence. It has been proposed from time to time that a group of believers should pray for the recovery of the patients in one wing of a hospital over a period of some months, and the number of deaths in it be compared with that in the other wing. The experiment has always been refused, partly on the ground that 'Thou shalt not tempt the Lord thy God', partly through lack of faith. Until it has been made, I do not propose to ask for the prayers of any congregation on my behalf.

JOHN BURDON SANDERSON HALDANE  
*Possible Worlds (1927): Science and theology as Art-Forms*

We are part of history ourselves, and we cannot avoid the consequences of being unable to think impartially.

JOHN BURDON SANDERSON HALDANE  
*Heredity and Politics (1938)*

If you enunciate your theorem before you prove it you are apt to give the impression, as Euclid does, that you are producing rabbits from a hat. Whereas if you lead up to it gently you create less impression of cleverness, but your reader may find your argument much easier to follow.

JOHN BURDON SANDERSON HALDANE  
*How to Write a Popular Scientific Article*

I'd lay down my life for two brothers or eight cousins.

JOHN BURDON SANDERSON HALDANE  
*New Scientist 8-Aug-1974 p. 325*

Either you deal with what is the reality, or you can be sure that the reality is going to deal with you.

ALEX HALEY

... the source of all great mathematics is the special case, the concrete example. It is frequent in mathematics that every instance of a concept of seemingly great generality is in essence the same as a small and concrete special case.

PAUL R. HALMOS  
*I Want to be a Mathematician (1985)*

Mathematics is not a deductive science—that's a cliché. When you try to prove a theorem, you don't just list the hypotheses, and then start to reason. What you do is trial and error, experimentation, guesswork.

PAUL R. HALMOS  
*I Want to be a Mathematician (1985)*

A good stack of examples, as large as possible, is indispensable for a thorough understanding of any concept, and when I want to learn something new, I make it my first job to build one.

PAUL R. HALMOS

We learn to do something by doing it. There is no other way.

JOHN HALT

A definition is death. A definition is the answer to which you must look up the question in the back of your book.

PETER HAMMILL  
*Killers, Angels, Refugees (1974) 'Catechism'*

He is trying to decide which of two daydreams he will inhabit.

PETER HAMMILL  
*Killers, Angels, Refugees (1974) 'Options'*

The purpose of computing is insight, not numbers.

RICHARD W. HAMMING  
*(1962)*

Does anyone believe that the difference between the Lebesgue and Riemann integrals can have physical significance, and that whether say, an airplane would or would not fly could depend on this difference? If such were claimed, I should not care to fly in that plane.

RICHARD W. HAMMING

Asking a working writer what he thinks about critics is like asking a lamppost how it feels about dogs.

CHRISTOPHER HAMPTON

Isolated, so-called “pretty theorems” have even less value in the eyes of a modern mathematician than the discovery of a new “pretty flower” has to the scientific botanist, though the layman finds in these the chief charm of the respective sciences.

HERMAN HANKEL

The word ‘politics’ is derived from the word ‘poly’, meaning ‘many’, and the word ‘ticks’, meaning ‘blood sucking parasites’.

LARRY HARDIMAN

In great mathematics there is a very high degree of unexpectedness, combined with inevitability and economy.

GODFREY HAROLD HARDY  
*A Mathematician's Apology (1941)*

I believe that mathematical reality lies outside us, that our function is to discover or observe it, and that the theorems which we prove, and which we describe grandiloquently as our “creations”, are simply the notes of our observations.

GODFREY HAROLD HARDY  
*A Mathematician's Apology (1941)*

The mathematician's patterns, like the painter's or the poet's must be beautiful; the ideas, like the colors or the words must fit together in a harmonious way. Beauty is the first test: there is no permanent place in this world for ugly mathematics.

GODFREY HAROLD HARDY  
*A Mathematician's Apology (1941)*

A science is said to be useful if its development tends to accentuate the existing inequalities in the distribution of wealth, or more directly promotes the destruction of human life.

GODFREY HAROLD HARDY  
*A Mathematician's Apology (1941)*

Pure mathematics is on the whole distinctly more useful than applied. For what is useful above all is technique, and mathematical technique is taught mainly through pure mathematics.

GODFREY HAROLD HARDY

A mathematician, like a painter or poet, is a maker of patterns. If his patterns are more permanent than theirs, it is because they are made with ideas.

GODFREY HAROLD HARDY

Estimated amount of glucose used by an adult human brain each day, expressed in M&Ms: 250

HARPER'S INDEX  
*(October 1989)*

Without going out of my door  
I can know all things on Earth.

GEORGE HARRISON  
*The Inner Light (1968)*

Where there is sewage there must be food.

HARRY HARRISON  
*Bill the Galactic Hero (1965)*

Doubt is the first step to belief.

HARRY HARRISON  
*Bill the Galactic Hero (1965)*

If there is a 50-50 chance that something can go wrong, then 9 times out of ten it will.

PAUL HARVEY NEWS  
*(1979)*

If you are doing things the same way as two years ago, you are almost certainly doing them wrong.

SIR JOHN HARVEY-JONES

God not only plays dice. He also sometimes throws the dice where they cannot be seen.

STEPHEN WILLIAM HAWKING  
*Nature 257:362 (1975)*

A theory is a good theory if it satisfies two requirements: it must accurately describe a large class of observations on the basis of a model that contains only a few arbitrary elements, and it must make definite predictions about the results of future observations.

STEPHEN WILLIAM HAWKING  
*A Brief History of Time (1988)*

Thirty years ago I was diagnosed with motor neurone disease, and given two and a half years to live. I have always wondered how they could be so precise about the half.

STEPHEN WILLIAM HAWKING  
*BBC interview, 18-Feb-1996*

Why does the universe go to all the bother of existing?

STEPHEN WILLIAM HAWKING

My goal is simple. It is complete understanding of the universe, why it is as it is and why it exists as all.

STEPHEN WILLIAM HAWKING

Rules and models destroy genius and art.

WILLIAM HAZLITT  
*Sketches and Essays (1839), 'On Taste'*

To me, the main weakness of EDA is its failure to enquire why the data were collected in the first place and its consequent tendency to apply ingenious methods largely because they are so attractively ingenious.

M. J. R. HEALY  
*In discussion of C. Chatfield, 'The initial examination of data', J. R. S. S. A. 148:245 (1985)*

Problems worthy of attack  
prove their worth by hitting back.

PIET HEIN

Ordinarily he is insane, but he has lucid moments when he is only stupid.

HEINRICH HEINE

Anyone who cannot cope with mathematics is not fully human. At best he is a tolerable subhuman who has learned to wear shoes, bathe, and not make messes in the house.

ROBERT A. HEINLEIN  
*Time Enough for Love (1973)*

If it cannot be expressed in figures, it is not science, it is opinion.

ROBERT A. HEINLEIN  
*Notebooks of Lazarus Long*

There is no such thing as luck; only adequate and inadequate preparation to cope with the statistical universe.

ROBERT A. HEINLEIN  
*Have Space Suit Will Travel*

Never worry about theory as long as the machinery does what it's supposed to do.

ROBERT A. HEINLEIN

Ein Fachmann ist ein Mann, der einige der größten Fehler kennt, die man in dem betreffenden Fach machen kann und der sie deshalb zu vermeiden versteht.

*(An expert is someone who knows some of the worst mistakes that can be made in his subject, and who manages to avoid them.)*

WERNER HEISENBERG  
*Der Teil und das Ganze (1969)*

Hungry Joe collected lists of fatal diseases and arranged them in alphabetical order so that he could put his finger without delay on any one he wanted to worry about.

JOSEPH HELLER  
*Catch-22 (1961), Ch. 17*

Never mistake motion for action.

ERNEST HEMINGWAY

The propositions of mathematics have, therefore, the same unquestionable certainty which is typical of such propositions as "All bachelors are unmarried," but they also share the complete lack of empirical content which is associated with that certainty: The propositions of mathematics are devoid of all factual content; they convey no information whatever on any empirical subject matter.

CARL G. HEMPEL  
*On the Nature of Mathematical Truth, in J. R. Newman (ed.) The World of Mathematics (1956)*

The first draft of anything is shit.

ERNEST HEMINGWAY

Under the bludgeonings of chance  
My head is bloody, but unbowed.

W. E. HENLEY  
*Invictus (1888)*

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

O. HENRY (WILLIAM SIDNEY PORTER)  
*Gentle Grafter (1908), 'Octopus Marooned'*

If you do not expect the unexpected, you will not find it; for it is hard to be sought out, and difficult.

HERACLITUS OF EPHEBUS

The fairest order in the world is a heap of random sweepings.

HERACLITUS OF EPHEBUS

Everything flows, nothing stays still.

HERACLITUS OF EPHEBUS

Religions often partake of the myth of progress that shields us from the terrors of an uncertain future.

FRANK HERBERT

*Dune (1965)*

Woe be to him that reads but one book.

GEORGE HERBERT

*Jacula Prudentum (1651)*

The value of a problem is not so much coming up with the answer as in the ideas and attempted ideas it forces on the would be solver.

I.N. HERSTEIN

One cannot escape the feeling that these mathematical formulae have an independent existence and an intelligence of their own, that they are wiser than we are, wiser than their discoverers, that we get more out of them than was originally put into them.

HEINRICH RUDOLF HERTZ

I do not think that the radio waves I have discovered will have any practical application.

HEINRICH RUDOLF HERTZ

There is no reality except the one contained within us.

HERMANN HESSE

He who seeks for methods without having a definite problem in mind seeks for the most part in vain.

DAVID HILBERT

*Mathematical Problems; Bull. Amer. Math. Soc. 8: 444*

The art of doing mathematics consists in finding that special case which contains all the germs of generality.

DAVID HILBERT

Mathematics is a game played according to certain simple rules with meaningless marks on paper.

DAVID HILBERT

The further a mathematical theory is developed, the more harmoniously and uniformly does its construction proceed, and unsuspected relations are disclosed between hitherto separated branches of the science.

DAVID HILBERT

Very few people do anything creative after the age of thirty-five. The reason is that very few people do anything creative before the age of thirty-five.

JOEL HILDEBRAND

A novice was trying to fix a broken Lisp machine by turning the power off and on.

Knight, seeing what the student was doing, spoke sternly: "You cannot fix a machine by just power-cycling it with no understanding of what is going wrong."

Knight turned the machine off and on.

The machine worked.

DANNY HILLIS

*AI Koan, in Jargon File 2.9.10 (1992), eds. Eric S. Raymond & Guy L. Steele*

In the days when Sussman was a novice, Minsky once came to him as he sat hacking at the PDP-6.

"What are you doing?", asked Minsky.

"I am training a randomly wired neural net to play Tic-Tac-Toe" Sussman replied.

"Why is the net wired randomly?", asked Minsky.

"I do not want it to have any preconceptions of how to play", Sussman said.

Minsky then shut his eyes.

"Why do you close your eyes?", Sussman asked his teacher.

"So that the room will be empty."

At that moment, Sussman was enlightened.

DANNY HILLIS

*AI Koan, in Jargon File 2.9.10 (1992), eds. Eric S. Raymond & Guy L. Steele*



Dew knot trussed yore spell chequer two fined awl yore mistakes.

BRENDAN HILLS

Declare the past, diagnose the present, foretell the future.

HIPPOCRATES OF COS  
*Epidemics Book I, section 11*

When doing everything according to indications, although things may not turn out agreeably to indication, we should not change to another while the original appearances remain.

HIPPOCRATES OF COS  
*Aphorisms II.52*

And he will manage the cure best who has foreseen what is to happen from the present state of matters.

HIPPOCRATES OF COS  
*The Book of Prognostics*

...there are two ways of constructing a software design: One way is to make it so simple that there are *obviously* no deficiencies and the other way is to make it so complicated that there are no *obvious* deficiencies. The first method is far more difficult.

CHARLES ANTONY RICHARD HOARE  
*'The Emperor's Old Clothes' (1980 Turing Award Lecture)*

The thing with high-tech is that you always end up using scissors.

DAVID HOCKNEY  
*Observer, Sayings of the Week, 10–July–1994*

[on ESP] Some things have to be believed to be seen.

RALPH HODGSON

I will listen to any hypothesis but on one condition—that you show me a method by which it can be tested.

AUGUST WILLIAM VON HOFFMANN

But we must not underestimate the potency of the mathematical process of abstraction. A surprising variety of things happen to have both magnitude and direction and to combine according to the parallelogram law; and many of them are not at all reminiscent of journeys.

BANISH HOFFMAN

Mathematics is a discipline practised in every university in the world, and it is at least as broad a field as biology, in which one researcher tries to understand the AIDS virus while another studies the socialization of wombats.

PAUL HOFFMAN  
*Archimedes' Revenge (1988), Introduction*

Hofstadter's Law: It always takes longer than you expect, even when you take into account Hofstadter's Law.

DOUGLAS R. HOFSTADTER  
*Goedel, Escher, Bach (1979)*

It is well to remember that the entire universe, with one trifling exception, is composed of others.

JOHN ANDREW HOLMES

The universe is not hostile, nor yet is it unfriendly. It is simply indifferent.

REV. JOHN H. HOLMES

What a satire, by the way, is that machine [Babbage's engine] on the mere mathematician! A Frankenstein-monster, a thing without brains and without heart, too stupid to make a blunder; that turns out results like a corn-sheller, and never grows any wiser or better, though it grind a thousand bushels of them!

OLIVER WENDELL HOLMES  
*The Autocrat of the Breakfast Table (1858)*

Every probability—and most of our common, working beliefs are probabilities—is provided with BUFFERS at both ends, which break the force of opposite opinions clashing against it; but scientific certainty has no spring in it, no courtesy, no possibility of yielding. All this must react on the minds which handle these forms of truth.

OLIVER WENDELL HOLMES  
*The Autocrat of the Breakfast Table (1858)*

Your patient has no more right to all the truth you know than he has to all the medicine in your saddlebags. . . . He should get only just so much as is good for him.

OLIVER WENDELL HOLMES  
*(1871)*

For the rational study of the law the black letter man may be the man of the present, but the man of the future is the man of statistics and the master of economics.

OLIVER WENDELL HOLMES  
*The Path of the Law (1897)*

Certitude is not the test of certainty. We have been cocksure of many things that are not so.

OLIVER WENDELL HOLMES

The human mind once stretched to a new idea never goes back to its original dimensions.

OLIVER WENDELL HOLMES

Why can't somebody give us a list of things that everybody thinks and nobody says, and another list of things that everybody says and nobody thinks?

OLIVER WENDELL HOLMES

The Wall will stand for a hundred years.

ERICH HONECKER  
*(1988)*

It is commonly believed that anyone who tabulates numbers is a statistician. This is like believing that anyone who owns a scalpel is a surgeon.

R. HOOKE  
*How to tell the Liars from the Statisticians (1983)*

It's always easier to apologize than to ask permission.

GRACE MURRAY HOPPER

The nice thing about standards is that there are so many of them to choose from.

GRACE MURRAY HOPPER

Omne tulit punctum qui miscuit utile dulci,  
Lectorem delectando pariterque monendo.

*(He has gained every point who has mixed practicality with pleasure,  
by delighting the reader at the same time as instructing him.)*

HORACE (QUINTUS HORATIUS FLACCUS)  
*Ars Poetica 343*

Misce stultitiam consiliis brevem:

Dulce est desipere in loco.

*(Mix a little foolishness with your prudence:  
It's lovely to be silly at the right moment.)*

HORACE (QUINTUS HORATIUS FLACCUS)  
*Epistles III xii.27*

I don't see the logic of rejecting data just because they seem incredible.

SIR FRED HOYLE

There is a coherent plan in the universe, though I don't know what it's a plan for.

SIR FRED HOYLE

One machine can do the work of fifty ordinary men. No machine can do the work of one extraordinary man.

ELBERT HUBBARD

*Thousand and one Epigrams (1911)*

Little minds are interested in the extraordinary; great minds in the commonplace.

ELBERT HUBBARD

*Thousand and one Epigrams (1911)*

Life is just one damned thing after another.

ELBERT HUBBARD

*Thousand and one Epigrams (1911)*

Le mot, c'est le Verbe, et le Verbe, c'est Dieu.

VICTOR HUGO

*Contemplations (1856) bk. 1, no. 8*

La symétrie, c'est l'ennui, et l'ennui est le fonde même du deuil. Le désespoir bâille.  
(*Symmetry is tedious, and tedium is the very basis of mourning. Despair yawns.*)

VICTOR HUGO

*Les Misérables (1862), vol. 2, bk. 4, ch. 1*

On résiste à l'invasion des armées; on ne résiste pas à l'invasion des idées.

(*One can resist invasion by armies; one cannot resist invasion by ideas.*)

VICTOR HUGO

*Histoire d'un Crime (1877), pt. 5, sect. 10*

If we take in our hand any volume; of divinity or school metaphysics, for instance; let us ask, *Does it contain any experimental reasoning concerning matter of fact and existence?* No. Commit it then to the flames: for it can contain nothing but sophistry and illusion.

DAVID HUME

*An Enquiry Concerning Human Understanding (1748)*

A wise man proportions his belief to the evidence; in particular, he never simply takes for granted the truth of the testimony of witnesses, but subjects that testimony to test. David Hume *An Enquiry Concerning Human Understanding (1748)*, 'Of Miracles' Beauty is no quality in things themselves. It exists merely in the mind which contemplates them.

DAVID HUME

*Essays, Moral, Political, and Literary (ed. T. H. Green and T. H. Grose), 'Of the Standard of Taste' (1757)*

A wise man proportions his belief to the evidence.

DAVID HUME

The right to be heard does not automatically include the right to be taken seriously.

HUBERT HUMPHREY

An undefined problem has an infinite number of solutions.

ROBERT A. HUMPHREY

1. If quality and productivity are to improve from current levels, changes must be made in the way things are presently being done.
2. We should like to have good data to serve as a rational basis on which to make these changes.
3. The twin question must then be addressed: what data should be collected, and, once collected, how should they be analyzed?
4. Statistics is the science that addresses this twin question.

W. G. HUNTER

That action is best, which procures the greatest happiness for the greatest numbers.

FRANCIS HUTCHESON

*An Inquiry into the Original of our Ideas of Beauty and Virtue (1725), Treatise 2, sect. 3, subsect. 8*

‘A mental carminative,’ said Mr Scogan reflectively. ‘That’s what you need.’

ALDOUS LEONARD HUXLEY

*Crome Yellow (1921)*

Consistency is contrary to nature, contrary to life. The only completely consistent people are the dead.

ALDOUS LEONARD HUXLEY

*Do What you Will (1927), ‘Wordsworth in the Tropics’*

Alpha children wear grey. They work much harder than we do, because they’re so frightfully clever. I’m really awfully glad I’m a Beta, because I don’t work so hard. And then we are much better than the Gammas and Deltas. Gammas are stupid. They all wear green, and Delta children wear khaki. Oh no, I don’t want to play with Delta children. And Epsilons are still worse. They’re too stupid to be able to read or write. Besides, they wear black, which is such a beastly colour. I’m so glad I’m a Beta.

ALDOUS LEONARD HUXLEY

*Brave New World (1932)*

I admit that mathematical science is a good thing. But excessive devotion to it is a bad thing.

ALDOUS LEONARD HUXLEY

*Contemporary Mind (1934)*

In real life there is no such thing as the average man.

ALDOUS LEONARD HUXLEY

*Brave New World Revisited (1958)*

Higher education is not necessarily a guarantee of higher virtue.

ALDOUS LEONARD HUXLEY

*Brave New World Revisited (1958)*

Man must learn to simplify, but not to the point of falsification.

ALDOUS LEONARD HUXLEY

*Brave New World Revisited (1958)*

Assembled in a crowd, people lose their powers of reasoning and their capacity for moral choice.

ALDOUS LEONARD HUXLEY

*Brave New World Revisited (1958)*

Technological progress has merely provided us with more efficient means for going backwards.

ALDOUS LEONARD HUXLEY

Experience is not what happens to you. It is what you do with what happens to you.

ALDOUS LEONARD HUXLEY

Facts do not cease to exist because they are ignored.

ALDOUS LEONARD HUXLEY

Sooner or later, false thinking brings wrong conduct.

SIR JULIAN HUXLEY

*Essays of a Biologist (1924), VII*

Mathematics may be compared to a mill of exquisite workmanship, which grinds you stuff of any degree of fineness; but, nevertheless, what you get out depends on what you put in; and as the grandest mill in the world will not extract wheat flour from peascods, so pages of formulae will not get a definite result out of loose data.

THOMAS HENRY HUXLEY

*Quart. J. Geol. Soc. 25 (1869): 38*

The great end of life is not knowledge but action. What men need is as much knowledge as they can organize for action; give them more and it may become injurious. Some men are heavy and stupid from undigested learning

THOMAS HENRY HUXLEY  
*Technical Education (1877)*

If a little knowledge is dangerous, where is the man who has so much as to be out of danger?

THOMAS HENRY HUXLEY  
*(1877)*

It is the customary fate of new truths to begin as heresies and to end as superstitions.

THOMAS HENRY HUXLEY  
*The Coming of Age of the Origin of Species (1881)*

Irrationally held truths may be more harmful than reasoned errors.

THOMAS HENRY HUXLEY  
*The Coming of Age of the Origin of Species (1881)*

I am too much of a sceptic to deny the possibility of anything.

THOMAS HENRY HUXLEY  
*Letter to Herbert Spencer, 22-Mar-1886*

Science is nothing but trained and organized common sense differing from the latter only as a veteran may differ from a raw recruit.

THOMAS HENRY HUXLEY  
*Collected Essays (1893-4): The Method of Zadig*

The great tragedy of Science—the slaying of a beautiful hypothesis by an ugly fact.

THOMAS HENRY HUXLEY  
*Collected Essays (1893-4): Biogenesis and Abiogenesis*

It is the first duty of a hypothesis to be intelligible.

THOMAS HENRY HUXLEY

The chess board is the world, the pieces are the phenomena of the universe, the rules of the game are what we call the laws of Nature. The player on the other side is hidden from us. We know that his play is always fair, just and patient. But we also know, to our cost, that he never overlooks a mistake, or makes the smallest allowance for ignorance.

THOMAS HENRY HUXLEY

Try to learn something about everything and everything about something.

THOMAS HENRY HUXLEY

Nothing shocks me. I'm a scientist.

WILLARD HUYCK & GLORIA KATZ  
*Indiana Jones and the Temple of Doom (film, 1989)*

All parts should go together without forcing. You must remember that the parts you are reassembling were disassembled by you. Therefore, if you can't get them together again, there must be a reason. By all means, do not use a hammer.

IBM MAINTENANCE MANUAL  
*(1925)*

Geometry enlightens the intellect and sets one's mind right. All of its proofs are very clear and orderly. It is hardly possible for errors to enter into geometrical reasoning, because it is well arranged and orderly. Thus, the mind that constantly applies itself to geometry is not likely to fall into error. In this convenient way, the person who knows geometry acquires intelligence.

IBN KHALDUN  
*The Muqaddimah: An Introduction to History*

To live is to war with trolls.

HENRIK IBSEN

My mind is a handgrenade, catch.

ICE-T

*'Mind Over Matter' on 'O.G.' (1991)*

I write rhymes with addition and algebra,  
mental geometry.

ICE-T

*'Mind Over Matter' on 'O.G.' (1991)*

A superstition is a premature explanation that overstays its time.

GEORGE ILES

The aim of education is the knowledge not of fact but of values.

WILLIAM RALPH INGE, DEAN OF ST. PAUL'S

*'The Training of the Reason' in A. C. Benson (ed.), Cambridge Essays on Education (1917) Ch. 2*

The vulgar mind always mistakes the exceptional for the important.

WILLIAM RALPH INGE, DEAN OF ST. PAUL'S

*More Lay Thoughts of a Dean (1931), III.1*

It is not the answer that enlightens but the question.

EUGÈNE IONESCO

Statistics show that of those who contract the habit of eating, very few survive.

WILLIAM WALLACE IRWIN

The road to truth is long, and lined the entire way with annoying bastards.

ALEXANDER JABLOKOV

*The Place of No Shadows, in Isaac Asimovs Science Fiction Magazine (1990)*

In our Universe, matter is arranged in a hierarchy of structures by successive integrations.

FRANÇOIS JACOB

*The Possible and the Actual (1982)*

Man muss immer generalisieren.

*(One should always generalize.)*

CARL JACOBI

The real end of science is the honor of the human mind.

CARL JACOBI

We must grant the artist his subject, his idea, his *donné*: our criticism is applied only to what he makes of it.

HENRY JAMES

*Partial Portraits (1888), 'The Art of Fiction'*

There is no more miserable human being than one in whom nothing is habitual but indecision.

WILLIAM JAMES

*The Principles of Psychology (1890), vol. 1, ch. 4*

The art of being wise is the art of knowing what to overlook.

WILLIAM JAMES

*The Principles of Psychology (1890), vol. 2, ch. 22*

If I should throw down a thousand beans at random upon a table, I could doubtless, by eliminating a sufficient number of them, leave the rest in almost any geometrical pattern you might propose to me, and you might then say that that pattern was the thing prefigured beforehand, and that the other beans were mere irrelevance and packing material. Our dealings with Nature are just like this.

WILLIAM JAMES

*The Varieties of Religious Experience (1902), Lecture XVIII, 'Philosophy'*

A good hypothesis in science must have other properties than those of the phenomenon it is immediately invoked to explain, otherwise it is not prolific enough.

WILLIAM JAMES

*The Varieties of Religious Experience (1902), Lectures XIV, XV, 'Saintliness'*

If WE claim only reasonable probability, it will be as much as men who love the truth can ever at any given moment hope to have within their grasp.

WILLIAM JAMES

*The Varieties of Religious Experience (1902), Lecture XX, 'Conclusions'*

There is no worse lie than a truth misunderstood by those who hear it.

WILLIAM JAMES

*The Varieties of Religious Experience (1902)*

The moral flabbiness born of the exclusive worship of the bitch-goddess *success*. That—with the squalid cash interpretation put on the word success—is our national disease.

WILLIAM JAMES

*Letter to H. G. Wells, 11-Sept-1906*

When a thing was new people said 'It is not true'. Later, when its truth became obvious, people said, 'Anyway, it is not important', and when its importance could not be denied, people said, 'Anyway, it is not new'.

WILLIAM JAMES

*in Lord Ritchie Calder 'Leonardo' (1970)*

A great many people think they are thinking when they are merely rearranging their prejudices.

WILLIAM JAMES

It was our use of probability theory as logic that has enabled us to do so easily what was impossible for those who thought of probability as a physical phenomenon associated with "randomness". Quite the opposite; we have thought of probability distributions as *carriers of information*.

E. T. JAYNES

*The Logic of Probability (1993) Chapter 4*

From the intrinsic evidence of his creation, the Great Architect of the Universe now begins to appear as a pure mathematician.

SIR JAMES JEANS

*The Mysterious Universe (1930), Ch. 5*

I am a great believer in luck, and I find that the harder I work, the more I have of it.

THOMAS JEFFERSON

I hold that a little rebellion is a good thing.

THOMAS JEFFERSON

Nature does not consist entirely, or even largely, of problems designed by a Grand Examiner to come out neatly in finite terms, and whatever subject we tackle the first need is to overcome timidity about approximating.

H. & B. S. JEFFREYS

*Methods of Mathematical Physics*

Some of the most important results (e.g. Cauchy's theorem) are so surprising at first sight that nothing short of a proof can make them credible.

H. & B. S. JEFFREYS  
*Methods of Mathematical Physics*

Perhaps only mathematicians are aware of the enormity of what the Government did this week. It took a risk that is statistically negligible and exploited it as an act of insufferable nannying. Beef ribs, T-bones and oxtails present a public health risk publicised as "very small" and "a chance of one case per year" (though none of Britain's 22 nvCJD cases has been positively linked to beef). Most newspapers cluelessly converted "a chance" into a certainty, and ridiculed the risk as a tiny one in 56 million. But that is not what the scientists said. They suggested the chance was "5 per cent", so the risk is nearer to one in 1.1 billion, or one in 560 million among the half of the population that eats beef. There can have been no more tenuous basis for an infringement of personal liberty.

SIMON JENKINS  
*in 'the Times', 6-Dec-1997*

I like work; it fascinates me. I can sit and look at it for hours.

JEROME K. JEROME

If they give you ruled paper, write the other way.

JUAN RAMON JIMENEZ

People must not attempt to impose their own 'truth' on others. The right to profess the truth must always be upheld, but not in a way that involves contempt for those who may think differently. Truth imposes itself solely by the force of its own truth.

POPE JOHN PAUL II  
*1-Jan-91*

*Network.* Anything reticulated or decussated at equal distances, with interstices between the intersections.

SAMUEL JOHNSON  
*A Dictionary of the English Language (1755)*

The business of the poet, said Imlac, is to examine, not the individual, but the species.

SAMUEL JOHNSON  
*Rasselas (1759), Ch. 10*

Example is always more efficacious than precept.

SAMUEL JOHNSON  
*Rasselas (1759), Ch. 30*

Integrity without knowledge is weak and useless, and knowledge without integrity is dangerous and dreadful.

SAMUEL JOHNSON  
*Rasselas (1759), Ch. 41*

All intellectual improvement arises from leisure.

SAMUEL JOHNSON  
*Boswell's 'Life of Samuel Johnson' 13-Apr-1773*

Knowledge is of two kinds. We know a subject ourselves, or we know where we can find information on it.

SAMUEL JOHNSON  
*Boswell's 'Life of Samuel Johnson' 18-Apr-1775*

Round numbers are always false.

SAMUEL JOHNSON  
*Boswell's 'Life of Samuel Johnson' 30-Mar-1778*



Lectures were once useful; but now, when all can read, and books are so numerous, lectures are unnecessary. If your attention fails, and you miss a part of a lecture, it is lost; you cannot go back as you do upon a book. . . People have nowadays got a strange opinion that everything should be taught by lectures. Now, I cannot see that lectures can do as much good as reading the books from which the lectures are taken. I know nothing that can be best taught by lectures, except where experiments are to be shown. You may teach chymistry by lectures. You might teach making shoes by lectures!

SAMUEL JOHNSON  
*Boswell's 'Life of Samuel Johnson', 15-Apr-1781*

Sir, I have found you an argument; but I am not obliged to find you an understanding.

SAMUEL JOHNSON  
*Boswell's 'Life of Samuel Johnson' June 1784*

Actions are visible, though motives are secret.

SAMUEL JOHNSON

A successful tool is one that was used to do something undreamed of by its author.

STEPHEN C. JOHNSON

The farther it gets from the bench it was worked on, the more real the real world becomes.

TODD JOHNSON

Suddenly a caravan of police cars escorting a large truck with "Bob's Slide Rules" painted on the sides pulled in front of the Physics building. Before they could come to a stop, a horde of people rushed out, turned over the truck, and began looting it, screaming and ripping open boxes of slide rules.

The few cops who got too close were quickly mauled. Some of the mathematicians didn't even try to get away; they just sat down and began doing functions, right in front of everyone. I turned away, retching.

My God, I thought. The computers must be on the fritz. . . and they haven't used the chalkboards in years. . . they must be out of chalk. If they act this way for slide rules. . . what will happen when the chalk truck arrives?

WAYNE JOHNSON  
*Excerpt from sci.astro post, 1995*

Experience is that marvelous thing that enables you recognize a mistake when you make it again.

FRANKLIN P. JONES

Honest criticism is hard to take, particularly from a relative, a friend, an acquaintance, or a stranger.

FRANKLIN P. JONES

Don't know what I want but I know how to get it.

STEVE JONES, GLEN MATLOCK, PAUL COOK & JOHNNY ROTTEN  
*Anarchy in the U.K. (1977)*

Advice is what we ask for when we already know the answer but wish we didn't.

ERICA JONG

No matter where you go or what you do, you live your entire life within the confines of your head.

TERRY JOSEPHSON

The worst thing about new books is that they keep us from reading the old ones.

JOSEPH JOUBERT

It is better to debate a question without settling it than to settle a question without debating it.

JOSEPH JOUBERT

Those who never retract their opinions love themselves more than they love truth.

JOSEPH JOUBERT

We have to reinvent the wheel every once in a while, not because we need a lot of wheels; but because we need a lot of inventors

BRUCE JOYCE

I can't understand it. I can't even understand the people who can understand it.

QUEEN JULIANA OF THE NETHERLANDS

The pendulum of the mind oscillates between sense and nonsense, not between right and wrong.

CARL G. JUNG

*Memories, Dreams, Reflections (1961), Ch. 5*

“Everything you say is boring and incomprehensible,” she said, “but that alone doesn't make it true.”

FRANZ KAFKA

There is infinite hope, but not for us.

FRANZ KAFKA

Problems are only opportunities in work clothes.

HENRY J. KAISER

I make progress by having people around who are smarter than I am—and listening to them. And I assume that everyone is smarter about something than I am.

HENRY J. KAISER

It is important to keep an open mind, but not so open that your brains fall out.

STEPHEN A. KALLIS, JR.

The purpose of models is not to fit the data but to sharpen the question.

SAMUEL KARLIN

*11th R. A. Fisher Memorial Lecture, Royal Society, 20-Apr-1983*

THREEPIO: It's against my programming to impersonate a deity.

LAWRENCE KASDAN & GEORGE LUCAS

*Return of the Jedi (1983)*

OBI-WAN KENOBI: Many of the truths we cling to depend greatly on our point of view.

LAWRENCE KASDAN & GEORGE LUCAS

*Return of the Jedi (1983)*

Mathematics is the science which uses easy words for hard ideas.

E. KASNER AND J. R. NEWMAN

*Mathematics and the Imagination (1940)*

The testament of science is so continually in a flux that the heresy of yesterday is the gospel of today and the fundamentalism of tomorrow.

E. KASNER AND J. R. NEWMAN

*Mathematics and the Imagination (1940)*

In computers, every 'new explosion' was set off by a software product that allowed users to program differently.

ALAN KAY

Now I feel as if I should succeed in doing something in mathematics, although I cannot see why it is so very important. . . The knowledge doesn't make life any sweeter or happier, does it?

HELEN KELLER

*The Story of My Life (1903)*

I didn't read it all, but the beginning and the end were pretty good.

E. E. KELLETT  
*The Lady Automaton (1901)*

We are confronted with insurmountable opportunities.

WALT KELLY

At the Day of Judgment, we shall not be asked what we have read, but what we have done.

THOMAS À KEMPIS

[Referring to Bayesians]: If they would only do as he did and publish posthumously we should all be saved a lot of trouble.

MAURICE G. KENDALL  
*J.R.S.S.A. 131:185*

### Hiawatha Designs an Experiment

Hiawatha, mighty hunter,  
He could shoot ten arrows upward,  
Shoot them with such strength and swiftness  
That the last had left the bow-string  
Ere the first to earth descended.  
This was commonly regarded  
As a feat of skill and cunning.

Several sarcastic spirits  
Pointed out to him, however,  
That it might be much more useful  
If he sometimes hit the target.  
“Why not shoot a little straighter  
And employ a smaller sample?”

Hiawatha, who at college  
Majored in applied statistics,  
Consequently felt entitled  
To instruct his fellow man  
In any subject whatsoever,  
Waxed exceedingly indignant,  
Talked about the law of errors,  
Talked about truncated normals,  
Talked of loss of information,  
Talked about his lack of bias,  
Pointed out that (in the long run)  
Independent observations,  
Even though they missed the target,  
Had an average point of impact  
Very near the spot he aimed at,  
With the possible exception  
of a set of measure zero.

“This,” they said, “was rather doubtful;  
Anyway it didn't matter.  
What resulted in the long run:  
Either he must hit the target  
Much more often than at present,  
Or himself would have to pay for  
All the arrows he had wasted.”

Hiawatha, in a temper,  
Quoted parts of R. A. Fisher,

Quoted Yates and quoted Finney,  
Quoted reams of Oscar Kempthorne,  
Quoted Anderson and Bancroft  
(practically *in extenso*)  
Trying to impress upon them  
That what actually mattered  
Was to estimate the error.

Several of them admitted:  
“Such a thing might have its uses;  
Still,” they said, “he would do better  
If he shot a little straighter.”

Hiawatha, to convince them,  
Organized a shooting contest.  
Laid out in the proper manner  
Of designs experimental  
Recommended in the textbooks,  
Mainly used for tasting tea  
(but sometimes used in other cases)  
Used factorial arrangements  
And the theory of Galois,  
Got a nicely balanced layout  
And successfully confounded  
Second order interactions.

All the other tribal marksmen,  
Ignorant benighted creatures  
Of experimental setups,  
Used their time of preparation  
Putting in a lot of practice  
Merely shooting at the target.

Thus it happened in the contest  
That their scores were most impressive  
With one solitary exception.  
This, I hate to have to say it,  
Was the score of Hiawatha,  
Who as usual shot his arrows,  
Shot them with great strength and swiftness,  
Managing to be unbiased,  
Not however with a salvo  
Managing to hit the target.

“There!” they said to Hiawatha,  
“That is what we all expected.”

Hiawatha, nothing daunted,  
Called for pen and called for paper.  
But analysis of variance  
Finally produced the figures  
Showing beyond all peradventure,  
Everybody else was biased.  
And the variance components  
Did not differ from each other’s,  
Or from Hiawatha’s.

(This last point it might be mentioned,  
Would have been much more convincing  
If he hadn’t been compelled to

Estimate his own components  
From experimental plots on  
Which the values all were missing.)

Still they couldn't understand it,  
So they couldn't raise objections.  
(Which is what so often happens  
with analysis of variance.)

All the same his fellow tribesmen,  
Ignorant benighted heathens,  
Took away his bow and arrows,  
Said that though my Hiawatha  
Was a brilliant statistician,  
He was useless as a bowman.

As for variance components  
Several of the more outspoken  
Make primeval observations  
Hurtful of the finer feelings  
Even of the statistician.

In a corner of the forest  
Sits alone my Hiawatha  
Permanently cogitating  
On the normal law of errors.  
Wondering in idle moments  
If perhaps increased precision  
Might perhaps be sometimes better  
Even at the cost of bias,  
If one could thereby now and then  
Register upon a target.

MAURICE G. KENDALL  
*The American Statistician 13:23-24 (1959)*

Statistics is the branch of scientific method which deals with the data obtained by counting or measuring the properties of populations of natural phenomena.

SIR M. G. KENDALL AND A. STUART  
*The Advanced Theory of Statistics*

Don't ever take a fence down until you know the reason it was put up.

JOHN FITZGERALD KENNEDY  
*Notebooks (1945), paraphrasing Chesterton*

Too often we enjoy the comfort of opinion without the discomfort of thought.

JOHN FITZGERALD KENNEDY

If we cannot now end our differences, at least we can help make the world safe for diversity.

JOHN FITZGERALD KENNEDY

The Unthinkable is not something we are thinking about at the moment. [On the prospect of being knocked out of the Champion's League]

PETER KENYON, CHIEF EXECUTIVE OF MANCHESTER UNITED  
*Observer, Quotes of the Year, 31-Dec-2000*

Trivia rarely affect efficiency. Are all the machinations worth it, when their primary effect is to make the code less readable?

B. W. KERNIGHAN AND P. J. PLAUGER  
*The Elements of Programming Style*

In the long run, we are all dead.

JOHN MAYNARD KEYNES

*A Tract on Monetary Reform (1923), ch. 3*

It has been pointed out already that no knowledge of probabilities, less in degree than certainty, helps us to know what conclusions are true, and that there is no direct relation between the truth of a proposition and its probability. Probability begins and ends with probability.

JOHN MAYNARD KEYNES

*The Application of Probability to Conduct*

The avoidance of taxes is the only intellectual pursuit that still carries any reward.

JOHN MAYNARD KEYNES

In the long run, we are all dead.

JOHN MAYNARD KEYNES

When the facts change, I change my mind. What do you do, sir?

JOHN MAYNARD KEYNES

The critical mathematician has abandoned the search for truth. He no longer flatters himself that his propositions are or can be known to him or to any other human being to be true; and he contents himself with aiming at the correct, or the consistent.

C. J. KEYSER

*Science 35: 107*

Algebras are geometric facts which are proved.

OMAR KHAYYAM

Life can only be understood backwards; but it must be lived forwards.

SØREN KIERKEGAARD

Metropolis

Is something new.

LEMMY KILMINSTER, FAST EDDIE CLARK & PHILTHY ANIMAL TAYLOR

*'Metropolis'*

A little uncertainty is good for everyone.

HENRY KISSINGER

*Observer, Sayings of the Week, 12-Dec-1976*

A first-rate theory predicts; a second-rate theory forbids and a third-rate theory explains after the event.

ALEKSANDER ISAAKOVICH KITAIGORODSKII

*Lecture, IUC Amsterdam, August 1975*

It is only at long intervals that the researcher enjoys the feeling (or illusion) of solid accomplishment that the administrator can enjoy merely by emptying his in-box.

SPENCER KLAW

*Science 163 (1969): 60*

Kunst gibt nicht das Sichtbare wieder, sondern macht sichtbar.

*(Art does not reproduce the visible; rather, it makes visible.)*

PAUL KLEE

*Creative Credo (1920)*

Eine aktive Linie, die sich frei ergeht, ein Spaziergang um seiner selbst willen, ohne Ziel.

*(An active line on a walk moving freely, without goal. A walk for walk's sake.)*

PAUL KLEE

*Pedagogical Sketchbook (1925) I.1*

The father of the arrow is the thought: how do I expand my reach?

PAUL KLEE

*Pedagogical Sketchbook (1925) I.1*

The greatest mathematicians, as Archimedes, Newton, and Gauss, always united theory and applications in equal measure.

FELIX KLEIN

*Elementarmathematik vom höheren Standpunkte aus 2 p 392*

A proof tells us where to concentrate our doubts.

MORRIS KLINE

Statistics: The mathematical theory of ignorance.

MORRIS KLINE

What can there be concerning outer space but ignorance?

NIGEL KNEALE

*The Quatermass Experiment (1953)*

We've got to express our views. We're men, not mechanical computers.

NIGEL KNEALE

*Quatermass and the Pit (1958)*

It is now proved beyond doubt that smoking is one of the leading causes of statistics.

FLETCHER KNEBEL

*in Reader's Digest, Dec. 1961*

Figures won't lie, but liars can figure.

FLETCHER KNEBEL

An economist is a man who states the obvious in terms of the incomprehensible.

ALFRED A. KNOPF

The most important thing in the programming language is the name. A language will not succeed without a good name. I have recently invented a very good name and now I am looking for a suitable language.

DONALD E. KNUTH

Beware of bugs in the above code; I have only proved it correct, not tried it.

DONALD E. KNUTH

The more original a discovery, the more obvious it seems afterwards.

ARTHUR KOESTLER

There are two ways to slide easily through life: to believe everything or to doubt everything. Both ways save us from thinking.

ALFRED KORZYBSKI

*Manhood of Humanity*

If you could lead through testing, the U.S. would lead the world in all education categories. When are people going to understand you don't fatten your lambs by weighing them?

JONATHAN KOZOL

Die ganze Zahl schuf der liebe Gott, alles Übrige est Menschenwerk.

*(God made the integers, man made all the rest.)*

LEOPOLD KRONECKER

*Jahresberichte der deutschen Mathematiker Vereinigung 2 (1919)*

There are not many joys in human life equal to the joy of sudden birth of a generalization. . . . He who has once in his life experienced this joy of scientific creation will never forget it.

PETER ALEKSEYEVICH KROPOTKIN

Kuhn is fashionable because he refuted the Popperian theory that theories are discarded because they are refuted, replacing it with the theory that theories are discarded because they are unfashionable.

PAUL KUBE

*Internet posting 1987*

TURGIDSON: Well I don't think it's quite fair to condemn a whole program because of a single slip up sir.

STANLEY KUBRICK, TERRY SOUTHER & PETER GEORGE

*Dr. Strangelove (1963)*

There is no appropriate scale available with which to weigh the merits of alternative paradigms: they are incommensurable.

THOMAS KUHN

*The Structure of Scientific Revolution*

Any sufficiently advanced bug is indistinguishable from a feature.

KULAWI

When patterns are broken, new worlds can emerge.

TULI KUPFERBERG

When we ask advice, we are usually looking for an accomplice.

JOSEPH-LOUIS LAGRANGE

Blind commitment to a theory is not an intellectual virtue: it is an intellectual crime.

IMRE LAKATOS

*Philosophical Papers vol. 1*

Nothing puzzles me more than time and space; and yet nothing troubles me less, as I never think about them.

CHARLES LAMB

John P. Rouillard wants a style file to allow text to flow around floated figures.  $\text{\TeX}$  is Turing-equivalent, so this is of course possible. The easiest way to do it is to write a  $\text{\TeX}$  macro that simulates a Turing machine and then re-implement  $\text{\LaTeX}$  as a Turing-machine program, adding the desired extra functionality.

LESLIE LAMPORT

*TeXhax Digest V89 #41, 27-Apr-1989*

A distributed system is one that stops you from getting any work done when a machine you've never even heard of crashes.

LESLIE LAMPORT

Formatting is no substitute for writing.

LESLIE LAMPORT

When I write a paper, I change my notation much more than I change my concepts.

LESLIE LAMPORT

If it ain't broke, don't fix it.

BERT LANCE

*Nation's Business (May 1977), p. 27*

One out of four people in this country is mentally unbalanced. Think of your three closest friends—and if they seem okay then you're the one!

ANN LANDERS

*in Kiss Me Hardy, ed. Roger Kilroy*

A well-known mathematician once told me that the great thing about liking both math and sex was that he could do either one while thinking about the other.

STEVEN E. LANDSBURG

*sci.math posting, 2-June-1993*



He uses statistics as a drunken man uses lamp-posts—for support rather than illumination.

ANDREW LANG

I can't give you brains, but I can give you a diploma.

NOEL LANGLEY, FLORENCE RYERSON & EDGAR ALLAN WOLFE

*The Wizard of Oz (film, 1939)*

Clay is moulded to make a vessel, but the utility of the vessel lies in the space where there is nothing. . . Thus taking advantage of what is, we recognise the utility of what is not.

LAO TZE

*Tao Te Ching, Chapter 11*

The theory of probabilities is at bottom nothing but common sense reduced to calculus; it enables us to appreciate with exactness that which accurate minds feel with a sort of instinct for which oftentimes they are unable to account.

PIERRE SIMON DE LAPLACE

*Théorie Analytique des Probabilités, Introduction*

Such is the advantage of a well constructed language that its simplified notation often becomes the source of profound theories.

PIERRE SIMON DE LAPLACE

Men might as well project a voyage to the Moon as attempt to employ steam navigation against the stormy North Atlantic Ocean.

DR. DIONYSUS LARDNER

Rail travel at high speeds above 20 miles per hour is not possible, because passengers, unable to breathe, would die of asphyxia.

DR. DIONYSUS LARDNER

Shut up he explained.

RING LARDNER

*The Young Immigrants (1920) ch. 10*

Get stewed: / Books are a load of crap.

PHILIP LARKIN

*A Study of Reading Habits*

An optimist thinks this is the best of all worlds. A pessimist fears the same may be true.

DOUG LARSON

A major part of my life is spent in that state of resentful coma which at universities is called research.

HAROLD LASKI

*23-Jan-1938*

Reality's always a little dull to whoever's involved in it.

KEITH LAUMER

*The Other Side of Time (1965)*

The art of drawing conclusions from experiments and observations consists in evaluating probabilities and in estimating whether they are sufficiently great or numerous enough to constitute proofs.

ANTOINE LAVOISIER

You can't invent a design. You recognise it, in the fourth dimension. That is, with your blood and your bones, as well as with your eyes.

DAVID HERBERT LAWRENCE

*Phoenix (1936): Art and Morality*

Thought is not a trick, or an exercise, or a set of dodges.  
Thought is a man in his wholeness wholly attending.

DAVID HERBERT LAWRENCE  
*Thought*

The entire economy of the Western world is built on things that cause cancer.

RAY LAWRENCE & PETER CAREY  
*Bliss (film, 1985)*

Sometime this job is just one thing after another.

NIGEL LAWSON  
*Observer, Sayings of the Week, 4-Dec-1988*

A desk is a dangerous place from which to view the world.

JOHN LE CARRÉ

Despite all disclaimer, it is only when science asks why, instead of simply describing how, that it becomes more than technology. When it asks why, it discovers Relativity. When it only shows how, it invents the atomic bomb, and then puts its hands over its eyes and says, 'My God what have I done?'

URSULA K. LE GUIN  
*The Stalin In the Soul (1973)*

Today's truths become errors tomorrow.

URSULA K. LE GUIN  
*The Stalin In the Soul (1973)*

In the twenty-first century, whoever controls the screen controls consciousness, information and thought.

TIMOTHY LEARY

There is a time in the life of every problem when it is big enough to see, yet small enough to solve.

MIKE LEAVITT

In one word he told me the secret of success in mathematics: plagiarize... only be sure always to call it please research.

THOMAS ANDREW LEHRER  
*Lobachevski (1953)*

If you give me your attention, I will tell you what I am.  
I'm a brilliant math'matician—also something of a ham.  
I have tried for numerous degrees, in fact I've one of each;  
Of course that makes me eminently qualified to teach.  
I understand the subject matter thoroughly, it's true,  
And I can't see why it isn't all as obvious to *you*.  
Each lecture is a masterpiece, meticulously planned,  
Yet everybody tells me that I'm hard to understand,  
And I can't think why.

THOMAS ANDREW LEHRER  
*The Professor's Song (1974), American Mathematical Monthly 81:745*

I feel that if a person has problems communicating the very least he can do is to shut up.

THOMAS ANDREW LEHRER

The art of discovering the causes of phenomena, or true hypothesis, is like the art of decyphering, in which an ingenious conjecture greatly shortens the road.

GOTTFREID WILHELM VON LEIBNIZ  
*New Essays Concerning Human Understanding, IV, XII.*

It is unworthy of excellent men to lose hours like slaves in the labour of calculation which could safely be relegated to anyone else if machines were used.

GOTTFREID WILHELM VON LEIBNIZ

Stand firm in your refusal to remain conscious during algebra. In real life, I assure you, there is no such thing as algebra

FRAN LEIBOWITZ

I figure you have the same chance of winning the lottery whether you play or not.

FRAN LEIBOWITZ

You're ignoring Leichter's First Law of Computing: If you don't know how to do something, you don't know how to do it on a computer.

JERRY LEICHTER

It is absurd to deny the role of fantasy in even the strictest science.

LENIN (VLADIMIR ILYICH ULYANOV)  
*Polnoe Sobranie Sochinenii*

Reality leaves a lot to the imagination.

JOHN LENNON

How come you never see a headline like 'Psychic Wins Lottery'?

JAY LENO

Nessuna humana investigazione si può dimandare vera scienza s'essa non passa per le matematiche dimostrazione.

*(No human investigation can be called real science if it cannot be demonstrated mathematically.)*

LEONARDO DA VINCI  
*Treatise on Painting, Ch. 1*

Iron rusts from disuse; stagnant water loses its purity and in cold weather becomes frozen; even so does inaction sap the vigor of the mind.

LEONARDO DA VINCI

The supreme misfortune is when theory outstrips performance.

LEONARDO DA VINCI

Whoever despises the high wisdom of mathematics nourishes himself on delusion and will never still the sophistic sciences whose only product is an eternal uproar.

LEONARDO DA VINCI

Inequality is the cause of all local movements.

LEONARDO DA VINCI

You do ill if you praise, but worse if you censure, what you do not understand.

LEONARDO DA VINCI

He who loves practice without theory is like the sailor who boards ship without a rudder and compass and never knows where he may cast.

LEONARDO DA VINCI

John Wilder Tukey, one of the most influential statisticians of the last 50 years and a wide-ranging thinker credited with inventing the word "software," died on Wednesday in New Brunswick, N.J. He was 85.

The cause was a heart attack after a short illness, said Phyllis Anscombe, his sister-in-law.

Mr. Tukey developed important theories about how to analyze data and compute series of numbers quickly. He spent decades as both a professor at Princeton University and a researcher at AT&T's Bell Laboratories, and his ideas continue to be a part of both doctoral statistics courses and high school math classes. In 1973, President Richard M. Nixon awarded him the National Medal of Science.

But Mr. Tukey frequently ventured outside of the academy as well, working as a consultant to the government and corporations and taking part in social debates.

In the 1950's, he criticized Alfred C. Kinsey's research on sexual behavior. In the 1970's, he was chairman of a research committee that warned that aerosol spray cans damaged the ozone layer. More recently, he

recommended that the 1990 Census be adjusted by using statistical formulas in order to count poor urban residents whom he believed it had missed.

“The best thing about being a statistician,” Mr. Tukey once told a colleague, “is that you get to play in everyone’s backyard.”

An intense man who liked to argue and was fond of helping other researchers, Mr. Tukey was also an amateur linguist who made significant contributions to the language of modern times. In a 1958 article in *American Mathematical Monthly*, he became the first person to define the programs on which electronic calculators ran, said Fred R. Shapiro, a librarian at Yale Law School who is editing a book on the origin of terms. Three decades before the founding of Microsoft, Mr. Tukey saw that “software,” as he called it, was gaining prominence. “Today,” he wrote at the time, it is “at least as important” as the “‘hardware’ of tubes, transistors, wires, tapes and the like.”

Twelve years earlier, while working at Bell Laboratories, he had coined the term “bit,” an abbreviation of “binary digit” that described the 1’s and 0’s that are the basis of computer programs.

Both words caught on, to the chagrin of some computer scientists who saw Mr. Tukey as an outsider. “Not everyone was happy that he was naming things in their field,” said Steven M. Schultz, a spokesman for Princeton.

Mr. Tukey had no immediate survivors. His wife of 48 years, Elizabeth Rapp Tukey, an antiques appraiser and preservation activist, died in 1998.

Mr. Tukey was born in 1915 in New Bedford, a fishing town on the southern coast of Massachusetts, and was the only child of Ralph H. Tukey and Adah Tasker Tukey. His mother was the valedictorian of the class of 1898 at Bates College in Lewiston, Me., and her closest competition was her eventual husband, who became the salutatorian. Classmates referred to them as the couple most likely to give birth to a genius, said Marc G. Glass, a Bates spokesman.

The elder Mr. Tukey became a Latin teacher at New Bedford’s high school, but, because of a rule barring spouses from teaching at the school, Mrs. Tukey was a private tutor, Mrs. Anscombe said. Mrs. Tukey’s main pupil became her son, who attended regular classes only for special subjects like French. “They were afraid that if he went to school, he’d get lazy,” said Howard Wainer, a friend and former student of John Tukey’s.

In 1936, Mr. Tukey graduated from nearby Brown University with a bachelor’s degree in chemistry, and in the next three years earned three graduate degrees, one in chemistry at Brown and two in mathematics at Princeton, where he would spend the rest of his career. At the age of 35, he became a full professor, and in 1965 he became the founding chairman of Princeton’s statistics department.

Mr. Tukey worked for the United States government during World War II. Friends said he did not discuss the details of his projects, but Mrs. Anscombe said he helped design the U-2 spy plane.

In later years, much of his important work came in a field that statisticians call robust analysis, which allows researchers to devise credible conclusions even when the data with which they are working are flawed. In 1970, Mr. Tukey published “Exploratory Data Analysis,” which gave mathematicians new ways to analyze and present data clearly.

One of those tools, the stem-and-leaf display, continues to be part of many high school curriculums. Using it, students arrange a series of data points in a series of simple rows and columns and can then make judgments about what techniques, like calculating the average or median, would allow them to analyze the information intelligently.

That display was typical of Mr. Tukey’s belief that mathematicians, professional or amateur, should often start with their data and then look for a theorem, rather than vice versa, said Mr. Wainer, who is now the principal research scientist at the Educational Testing Service.

“He legitimized that, because he wasn’t doing it because he wasn’t good at math,” Mr. Wainer said. “He was doing it because it was the right thing to do.”

Along with another scientist, James Cooley, Mr. Tukey also developed the Fast Fourier Transform, an algorithm with wide application to the physical sciences. It helps astronomers, for example, determine the spectrum of light coming from a star more quickly than previously possible.

As his career progressed, he also became a hub for other scientists. He was part of a group of Princeton professors that gathered regularly and included Lyman Spitzer Jr., who inspired the Hubble Space Telescope. Mr. Tukey also persuaded a group of the nation’s top statisticians to spend a year at Princeton in the early 1970’s working together on robust analysis problems, said David C. Hoaglin, a former student of Mr. Tukey.

Mr. Tukey was a consultant to the Educational Testing Service, the Xerox Corporation and Merck & Company. From 1960 to 1980, he helped design the polls that the NBC television network used to predict and analyze elections.

His first brush with publicity came in 1950, when the National Research Council appointed him to a committee to evaluate the Kinsey Report, which shocked many Americans by describing the country's sexual habits as far more diverse than had been thought. From their first meeting, when Mr. Kinsey told Mr. Tukey to stop singing a Gilbert and Sullivan tune aloud while working, the two men clashed, according to "Alfred C. Kinsey," a biography by James H. Jones.

In a series of meetings over two years, Mr. Kinsey vigorously defended his work, which Mr. Tukey believed was seriously flawed, relying on a sample of people who knew each other. Mr. Tukey said a random selection of three people would have been better than a group of 300 chosen by Mr. Kinsey.

DAVIS LEONHARDT

*John Tukey, 85, Statistician Who Coined 2 Crucial Words, obituary in the 'New York Times', 28-July-2000*

You are in the process of being indoctrinated. We have not yet evolved a system of education that is not a system of indoctrination. We are sorry, but it is the best we can do. What you are being taught here is an amalgam of current prejudice and the choices of this particular culture. The slightest look at history will show how impermanent these must be. You are being taught by people who have been able to accommodate themselves to a regime of thought laid down by their predecessors. It is a self-perpetuating system. Those of you who are more robust and individual than others, will be encouraged to leave and find ways of educating yourself—educating your own judgment. Those that stay must remember, always and all the time, that they are being moulded and patterned to fit into the narrow and particular needs of this society.

DORIS LESSING

*The Golden Notebook*

That is what learning is. You suddenly understand something you've understood all your life, but in a new way.

DORIS LESSING

Fine art and pizza delivery: what we do falls neatly in between.

DAVID LETTERMAN

There's no business like show business, but there are several businesses like accounting

DAVID LETTERMAN

Somewhere on this globe, every ten seconds, there is a woman giving birth to a child. She must be found and stopped.

SAM LEVENSON

Statistics are like a bikini. What they reveal is suggestive, but what they conceal is vital.

AARON LEVENSTEIN

Le savant n'est pas l'homme qui fournit les vrais réponses; c'est celui qui pose les vraies questions.

*(The scientist isn't the one who provides the right answers; it's the one asks the right questions.)*

CLAUDE LÉVI-STRAUSS

*Le Cru et le Cuit*

Some ideas are so stupid that only intellectuals could believe them.

MICHAEL LEVINE

There are lots of nice things you can do with sand; but do not try building a house on it.

CLIVE STAPLES LEWIS

*Mere Christianity*

No clever arrangement of bad eggs ever made a good omelette.

CLIVE STAPLES LEWIS

We all want progress, but if you're on the wrong road, progress means doing an about-turn, and walking back to the right road; in that case, the man who turns back soonest is the most progressive.

CLIVE STAPLES LEWIS

"Give us a copper, Guv" said the beggar to the Treasury statistician, when he waylaid him in Parliament square. "I haven't eaten for three days." "Ah," said the statistician, "and how does that compare with the same period last year?"

RUSSELL LEWIS

A good means to discovery is to take away certain parts of a system and to find out how the rest behaves.

GEORG CHRISTOPH LICHTENBERG

Nothing is more conducive to peace of mind than not having any opinions at all.

GEORG CHRISTOPH LICHTENBERG

We are too much accustomed to attribute to a single cause that which is the product of several, and the majority of our controversies come from that.

JUSTUS VON LIEBIG

People who like this sort of thing will find this the sort of thing they like.

ABRAHAM LINCOLN

*Judgment on a book. In G. W. E. Russell, 'Collections and Reflections' (1898) ch. 30*

If I had eight hours to chop down a tree, I'd spend six sharpening my axe.

ABRAHAM LINCOLN

The best thing about the future is that it only comes one day at a time.

ABRAHAM LINCOLN

I'm a slow walker, but I never walk back.

ABRAHAM LINCOLN

'Tis better to be silent and be thought a fool, than to speak and remove all doubt.

ABRAHAM LINCOLN

I believe that almost all important, useful ideas are simple. Peter Whittle has recently put it nicely in an autobiographical essay. 'If a piece of work is heavy and complicated then it is wrong.' dots Some writers feel that to express their ideas in simple terms is degrading. Some use complexity to disguise the paucity of their material. In fact, simplicity is a virtue and when, as here, it is both original and useful, it can represent a real advance in knowledge.

D. V. LINDLEY

*'Simplicity', RSS News, April 1995*

[Comment to Poincaré on the Gaussian curve]: Les expérimentateurs s'imaginent que c'est un théorème de mathématique, et les mathématiciens d'être un fait expérimental.

GABRIEL LIPPMANN

*in D'Arcy Thompson, 'On Growth and Form' (1917)*

Time sneaks up on you like a windshield on a bug.

JON LITHGOW

Schoolmaster: 'Suppose  $x$  is the number of sheep in the problem'. Pupil: 'But, Sir, suppose  $x$  is not the number of sheep'. [I asked Prof. Wittgenstein was this not a profound philosophical joke, and he said it was.]

J. E. LITTLEWOOD

*A Mathematician's Miscellany (1953)*

In a Spectator competition, the following won a prize; subject: what would you most like to read on opening the morning paper?

#### OUR SECOND COMPETITION

The First Prize in the second of this year's competitions goes to Mr. Arthur Robinson, whose witty entry was easily the best of those we received. His choice of what he would like to see on opening his paper was headed 'Our Second Competition', and was as follows: 'The First Prize in the second of this year's competitions goes to Mr. Arthur Robinson, whose witty entry was easily the best of those we received. His choice of what he would like to see on opening his paper was headed 'Our Second Competition', but owing to paper restrictions we cannot print all of it.

J. E. LITTLEWOOD  
*A Mathematician's Miscellany (1953)*

Erasmus Darwin had a theory that once in a while one should perform a damn-fool experiment. It almost always fails, but when it does come off is terrific. Darwin played the trombone to his tulips. The result of this particular experiment was negative.

J. E. LITTLEWOOD  
*A Mathematician's Miscellany (1953)*

Mathematics (by which I shall mean pure mathematics) has no grip on the real world; if probability is to deal with the real world it must contain elements outside mathematics; the *meaning* of 'probability' must relate to the real world, and there must be one or more 'primitive' propositions about the real world, from which we can then proceed deductively (i.e. mathematically).

J. E. LITTLEWOOD  
*A Mathematician's Miscellany (1953)*

Attempts are made to sublimate the limit into some Pickwickian sense—'limit' in inverted commas. But either you *mean* the ordinary limit, or else you have the problem of explaining how 'limit' behaves, and you are no further. You do not make an illegitimate conception legitimate by putting it into inverted commas.

J. E. LITTLEWOOD  
*A Mathematician's Miscellany (1953)*

'Perfect numbers' certainly never did any good, but then they never did any particular harm.

J. E. LITTLEWOOD  
*A Mathematician's Miscellany (1953)*

Improbabilities are apt to be overestimated. It is true that I should have been surprised in the past to learn that Professor Hardy had joined the Oxford Group. But one could not say the adverse chance was  $10^6 : 1$ . Mathematics is a dangerous profession; an appreciable proportion of us go mad, and then this particular event would be quite likely.

J. E. LITTLEWOOD  
*A Mathematician's Miscellany (1953)*

We come finally, however, to the relation of the ideal theory to real world, or "real" probability. If he is consistent a man of the mathematical school washes his hands of applications. To someone who wants them he would say that the ideal system runs parallel to the usual theory: "If this is what you want, try it: it is not my business to justify application of the system; that can only be done by philosophizing; I am a mathematician". In practice he is apt to say: "try this; if it works that will justify it". But now he is not merely philosophizing; he is committing the characteristic fallacy. Inductive experience that the system works is not evidence.

J. E. LITTLEWOOD  
*A Mathematician's Miscellany (1953)*

You cannot feed the hungry on statistics.

DAVID LLOYD GEORGE  
*Speech (1904)*

Don't be afraid to take a big step. You can't cross a chasm in two small jumps.

DAVID LLOYD GEORGE

There is no branch of mathematics, however abstract, which may not some day be applied to phenomena of the real world.

NICOLAI IVANOVICH LOBACHEVSKII

New opinions are always suspected and usually opposed without any other reason but because they are not already common.

JOHN LOCKE

*An Essay Concerning Human Understanding (1690)*

It is one thing to show a man that he is in error, and another to put him in possession of truth.

JOHN LOCKE

*An Essay Concerning Human Understanding (1690)*

It is one thing to show a man that he is in error, and another to put him in possession of truth.

JOHN LOCKE

*An Essay Concerning Human Understanding (1690)*

Hell is truth seen too late.

JOHN LOCKE

Überhaupt ist es für den Forscher ein guter Morgensport, täglich vor dem Frühstück eine Lieblingshypothese einzustampfen—das erhält jung.

*(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

*Das Sogenannte Böse (1966), ch. 2*

Every man gets a narrower and narrower field of knowledge in which he must be an expert in order to compete with other people. The specialist knows more and more about less and less and finally knows everything about nothing.

KONRAD LORENZ

Machines should work. People should think.

LARRY LORENZONI

The most merciful thing in the world... is the inability of the human mind to correlate all its contents.

H. P. LOVECRAFT

*The Call of Cthulu (1926)*

Ignorance simplifies *any* problem.

R. LUCKE

I wouldn't trust AI techniques with monitoring large dynamic systems of the class of a medium-sized municipal toilet.

MAREK LUGOWSKI

*mod. ai, 27-Mar-1987*

Advice is a form of nostalgia. Dispensing it is a way of fishing the past from the disposal, wiping it off, painting over the ugly parts, and recycling it for more than its worth.

BAZ LUHRMANN

*Everybody's Free (To Wear Sunscreen) (1999)*

Die Arznei macht kranke, die Mathematik traurige und die Theologie sündhafte Leute.

*(Medicine makes people ill, mathematics makes them sad and theology makes them sinful.)*

MARTIN LUTHER

I'm afraid he's at an even greater disadvantage in understanding economics, Prime Minister. He's an economist.

JONATHAN LYNN & SIR ANTHONY JAY

*Yes Prime Minister, 'A Real Partnership'*



The mathematician who pursues his studies without clear views of this matter, must often have the uncomfortable feeling that his paper and pencil surpass him in intelligence.

ERNST MACH  
*The Economy of Science*

Every statement in physics has to state relations between observable quantities.

ERNST MACH

Wisdom consists in being able to distinguish among dangers and make a choice of the least harmful.

NICCOLÒ MACHIAVELLI  
*The Prince (1513)*

Let us remember the unfortunate econometrician who, in one of the major functions of his system, had to use a proxy for risk and a dummy for sex.

FRITZ MACHLUP  
*Journal of Political Economy July/August 1974, p. 892*

How can we have any new ideas or fresh outlooks when 90 per cent of all the scientists who have ever lived have still not died?

ALAN LINDSAY MACKAY  
*Scientific World 13 (1969): 17-21*

Whatever man can design, man can figure out.

LARY MADDOCK  
*The Flying Saucer Gambit (1966)*

Science would be ruined if (like sports) it were to put competition above everything else, and if it were to clarify the rules of competition by withdrawing entirely into narrowly defined specialties. The rare scholars who are nomads-by-choice are essential to the intellectual welfare of the settled disciplines.

BENOIT MANDELBROT

I tell them that if they will occupy themselves with the study of mathematics they will find in it the best remedy against the lusts of the flesh.

THOMAS MANN  
*The Magic Mountain (1927)*

A great truth is a truth whose opposite is also a great truth.

THOMAS MANN  
*Essay on Freud (1937)*

Report writing, like motor-car driving and love-making, is one of those activities which almost every Englishman thinks he can do well without instruction. The results are of course usually abominable.

TOM MARGERISON  
*in 'A Random Walk in Science' compiled by R. L. Weber, edited by E. Mendoza*

now and then  
there is a person born  
who is so unlucky  
that he runs into accidents  
which started to happen  
to somebody else.

DON MARQUIS  
*archys life of mehitabel (1933), 'archy says'*

An idea isn't responsible for the people who believe in it.

DON MARQUIS  
*The Sun Dial*

Education must have an end in view, for it is not an end in itself.

SYBIL MARSHALL  
*An Experiment in Education, Ch. 4*

A child of five would understand this. Send somebody to fetch a child of five.

GROUCHO MARX  
*Duck Soup (1933)*

Those are my principles, and if you don't like them... well, I have others.

GROUCHO MARX

Now there sits a man with an open mind. You can feel the draft from here.

GROUCHO MARX

From the moment I picked up your book until I laid it down, I was convulsed with laughter. Some day I intend reading it.

GROUCHO MARX

The philosophers have only interpreted the world in various ways; the point is to change it.

KARL MARX  
*Theses on Feuerbach (1845), no. 11*

When the only tool you have is a hammer, every problem begins to resemble a nail.

ABRAHAM HAROLD MASLOW

How do you explain school to a higher intelligence?

MELISSA MATHISON  
*E. T. (film, 1982)*

L'exactitude n'est pas la vérité.

HENRI MATISSE  
*Essay (1947)*

Fast cars, fast women, fast algorithms... what more could a man want?

JOE MATTIS

Like all weak men he laid an exaggerated stress on not changing one's mind.

WILLIAM SOMERSET MAUGHAM  
*Of Human Bondage (1915), Ch. 37*

You can't learn too soon that the most useful thing about a principle is that it can always be sacrificed to expediency.

WILLIAM SOMERSET MAUGHAM  
*The Circle (1921), Act 3*

It is bad enough to know the past; it would be intolerable to know the future.

WILLIAM SOMERSET MAUGHAM  
*in Richard Hughes 'Foreign Devil' (1972)*

People ask for criticism, but they only want praise.

WILLIAM SOMERSET MAUGHAM

It is a great nuisance that knowledge can only be acquired by hard work.

WILLIAM SOMERSET MAUGHAM

Excess on occasion is exhilarating. It prevents moderation from acquiring the deadening effect of a habit.

WILLIAM SOMERSET MAUGHAM

I feel like a fugitive from the law of averages.

WILLIAM H. MAULDIN

I think it would be totally inappropriate for me to even contemplate what I am thinking about.

DON MAZANKOWSKI (CANADIAN FINANCE MINISTER)

Any clod can have the facts, but having opinions is an art

CHARLES MCCABE  
*San Francisco Chronicle*

Hard work never killed anybody, but why take a chance?

CHARLIE MCCARTHY (EDGAR BERGEN)

There are no new truths, but only truths that have not been recognized by those who have perceived them without noticing.

MARY MCCARTHY  
*On the Contrary (1961) 'Vita Activa'*

Don't bite my finger—look where it's pointing.

WARREN S. MCCULLOCH  
*in Stafford Beer 'Platform for Change' (1975)*

Shakespeare would have grasped wave functions, Donne would have understood complementarity and relative time. They would have been excited. What richness! They would have plundered this new science for their imagery. And they would have educated their audiences too. But you 'arts' people, you're not only ignorant of these magnificent things, You're rather proud of knowing nothing.

IAN MCEWAN  
*The Child in Time (1987), ch. 2*

There is only on thing more painful than learning from experience, and that is not learning from experience.

ARCHIBALD MCLEISH

The mediam is the message

MARSHALL MCLUHAN  
*Understanding Media (1964) ch. 2*

I don't necessarily agree with everything I say.

MARSHALL MCLUHAN

*Sequential Analysis: A means of stopping a trial before it becomes useful.*

GUERNSEY MCPEARSON

If at first it doesn't fit, fit, fit again.

JOHN MCPHEE  
*In Suspect Terrain (1983)*

There are in this world optimists who feel that any symbol that starts off with an integral sign must necessarily denote something that will have every property that they should like an integral to possess. This of course is quite annoying to us rigorous mathematicians; what is even more annoying is that by doing so they often come up with the right answer.

E. J. MCSHANE  
*Bull. Amer. Math. Soc. 69 (1963): 611*

While attending a recent baseball game with my 7-year old daughter, she asked me how many people I thought were there. I replied "About 27,000". She looked around for a moment, then turned to me and asked, "Are you counting yourself?"

HOLT MEBANE  
*Internet posting (rec.humor.funny), 10-Apr-1997*

People who write obscurely are either unskilled in writing or up to mischief.

SIR PETER BRIAN MEDAWAR  
*Pluto's Republic (1984): Science and Literature*

If a person (a) is sick, (b) receives treatment intended to make him better, and (c) gets better, then no power of reasoning known to medical science can convince him that it may not have been the treatment that restored his health.

SIR PETER BRIAN MEDAWAR  
*The Art of the Soluble*

The human mind treats a new idea the way the body treats a strange protein. It rejects it.

SIR PETER BRIAN MEDAWAR

There is no substitute for understanding what you are doing.

LOREN P. MEISSNER

If the mathematical expression of our ideas leads to equations which cannot be integrated, the working hypothesis will either have to be verified some other way, or else relegated to the great repository of unverified speculations.

J. W. MELLOR  
*Higher Mathematics for Students of Chemistry and Physics (1902)*

A man thinks that by mouthing hard words he understands hard things.

HERMAN MELVILLE

It is now quite lawful for a Catholic woman to avoid pregnancy by a resort to mathematics, though she is still forbidden to resort to physics and chemistry.

HENRY LOUIS MENCKEN  
*Notebooks (1956), 'Minority Report', 62*

Science, at bottom, is really anti-intellectual. It always distrusts pure reason, and demands the production of objective fact.

HENRY LOUIS MENCKEN  
*Notebooks (1956), 'Minority Report', 412*

Criticism is prejudice made plausible.

HENRY LOUIS MENCKEN

Conscience is the inner voice that warns us that someone might be looking.

HENRY LOUIS MENCKEN

There are some people who read too much: the bibliobibuli. I know some who are constantly drunk on books, as other men are drunk on whiskey or religion. They wander through this most diverting and stimulating of worlds in a haze, seeing nothing and hearing nothing.

HENRY LOUIS MENCKEN

I never lecture, not because I am shy or a bad speaker, but simply because I detest the sort of people who go to lectures and don't want to meet them.

HENRY LOUIS MENCKEN

We are here and it is now. Further than that all human knowledge is moonshine.

HENRY LOUIS MENCKEN

For every complex problem, there is a solution that is simple, neat, and wrong.

HENRY LOUIS MENCKEN

Windows NT 5.0 is an evolutionary, not revolutionary, release of the Windows NT operating system. While there are important new features in this release, version 5.0 will build on a proven system architecture and incorporate tens of thousands of bug fixes from version 4.0.

MICROSOFT  
from <http://www.microsoft.com/ntserver/community/>

An Englishman, even if he is alone, forms an orderly queue of one.

GEORGE MIKES  
*How to be an Alien (1946)*

... all ideas need to be heard, because each idea contains one aspect of the truth. By examining that aspect, we add to our own idea of the truth. Even ideas that have no truth in them whatsoever are useful because by disproving them, we add support to our own ideas.

JOHN STUART MILL  
*On Liberty*

Induction is a process of inference; it proceeds from the known to the unknown.

JOHN STUART MILL

Mathematics is the science of saving thought.

G. A. MILLER  
*Amer. Math. Monthly 15 (1908): 197*

Even if it doesn't work, there is something healthy and invigorating about direct action.

HENRY MILLER

"It wasn't an easy sum to do,  
But that's what it is," said Pooh, said he.  
"That's what it is," said Pooh.

ALAN ALEXANDER MILNE  
*Now We Are Six (1927) 'Us Two'*

I am a Bear of Very Little Brain, and long words Bother me.

ALAN ALEXANDER MILNE

One of the advantages of being disorderly is that one is constantly making exciting discoveries.

ALAN ALEXANDER MILNE

In my music, I'm trying to play the truth of what I am. The reason it's difficult is because I'm changing all the time.

CHARLIE MINGUS

Reality is something you rise above.

LIZA MINNELLI

I bet the human brain is a kluge.

MARVIN MINSKY

If you steal from one author, it's plagiarism; if you steal from many, it's research.

WILSON MIZNER  
*in Alva Johnston 'The Legendary Mizners' (1953)*

I respect faith, but doubt is what gives you an education.

WILSON MIZNER

For God's sake, stop researching for a while and begin to think.

SIR WALTER HAMILTON MOBERLEY  
*The Crisis in the University*

'I have 25 years' experience' equals 'I have one year's experience, and it is 25 years old'.

CLAUS MOLLER  
*in BBC TV program Business Matters, 11-Apr-1988*

TEver notice that 'what the hell' is always the right decision?

MARILYN MONROE

There is no course of life so weak and sottish as that which is managed by order, method, and discipline.

MONTAIGNE (MICHEL EYQUEM DE MONTAIGNE)

We can be knowledgeable with other men's knowledge, but we cannot be wise with other men's wisdom.

MONTAIGNE (MICHEL EYQUEM DE MONTAIGNE)

The moving power of mathematical invention is not reasoning but imagination.

AUGUSTUS DE MORGAN

The words figure and fictitious both derive from the same Latin root, *figere*. Beware!

M. J. MORONEY

*Facts from Figures*

Education costs money, but then so does ignorance.

SIR CLAUS MOSER

*Speech at British Association, Swansea, 20-Aug-1990*

Truth I have no trouble with, it's the facts I get all screwed up.

FARLEY MOWAT

When we try to pick out anything by itself, we find it hitched to everything else in the universe.

JOHN MUIR

If you fall in love with a machine there is something wrong with your love life. If you worship a machine there is something wrong with your religion.

LEWIS MUMFORD

*Art and Technics*

[Murphy's Law]: If there are two or more ways to do something, and one of those ways can result in a catastrophe, then someone will do it.

EDWARD A. MURPHY JR.

(1949)

Everyone is a prisoner of his own experiences. No one can eliminate prejudices—just recognize them.

EDWARD R. MURROW

Anyone who isn't confused doesn't really understand the situation.

EDWARD R. MURROW

Like so many aging college people, Pnin had long ceased to notice the existence of students on the campus.

VLADIMIR NABOKOV

*Pnin, Ch. 3, Sect. vi*

Discussion in class, which means letting twenty young blockheads and two cocky neurotics discuss something that neither their teacher nor they know.

VLADIMIR NABOKOV

*Pnin, Ch. 6, Sect. x*

You can tell whether a man is clever by his answers. You can tell whether a man is wise by his questions.

MAHFOUZ NAGUIB

A University without students is like ointment without a fly.

ED NATHE

There's certainly a growing atmosphere of academic totalitarianism. It shows up in things like the attacks on the legitimacy of the more eclectic and interdisciplinary fields, or in the increasing constraints on student choice.

TOM NAYLOR

We do not have censorship. What we have is a limitation on what newspapers can report.

LOUIS NEL (SOUTH AFRICAN DEPUTY MINISTER OF INFORMATION)

My favorite (unit) is the megaparsec-barn, a convenient unit of volume roughly 3.1 millilitres, if somewhat long and thin.

CHRISTOPHER NEUFELD

*alt.folklore.computers, 19-May-1993*

Young man, in mathematics you don't understand things. You just get used to them.

JOHN VON NEUMANN

*in G. Zukav 'The Dancing Wu Li Masters'*

It would appear that we have reached the limits of what it is possible to achieve with computer technology, although one should be careful with such statements, as they tend to sound pretty silly in 5 years.

JOHN VON NEUMANN

(1949)

There's no sense in being precise when you don't even know what you're talking about.

JOHN VON NEUMANN

Anyone who attempts to generate random numbers by deterministic means is, of course, living in a state of sin.

JOHN VON NEUMANN

The sciences do not try to explain, they hardly even try to interpret, they mainly make models. By a model is meant a mathematical construct which, with the addition of certain verbal interpretations, describes observed phenomena. The justification of such a mathematical construct is solely and precisely that it is expected to work.

JOHN VON NEUMANN

Probabilities are not very interesting when you are dead.

PETER G. NEUMANN

Aerial flight is one of that class of problems with which men will never have to cope.

SIMON NEWCOMB

Those for whom words have lost their value are likely to find that ideas have also lost their value.

EDWIN NEWMAN

To be sure, mathematics can be extended to any branch of knowledge, including economics, provided the concepts are so clearly defined as to permit accurate symbolic representation. That is only another way of saying that in some branches of discourse it is desirable to know what you are talking about.

JAMES R. NEWMAN

*The World of Mathematics (1956)*

The Theory of Groups is a branch of mathematics in which one does something to something and then compares the result with the result obtained from doing the same thing to something else, or something else to the same thing.

JAMES R. NEWMAN

*The World of Mathematics (1956)*

*We can believe what we choose.* We are answerable for what we choose to believe.

JOHN HENRY NEWMAN

*Letter to Mrs William Froude, 27 June 1948*

God, give us grace to accept with serenity the things that cannot be changed, courage to change the things which should be changed, and the wisdom to distinguish the one from the other.

REINHOLD NIEBUHR

Convictions are more dangerous enemies of truth than lies.

FRIEDRICH WILHELM NIETZSCHE

There are no facts, only interpretations.

FRIEDRICH WILHELM NIETZSCHE

No more fiction: we calculate; but that we may calculate, we had to make fiction first.

FRIEDRICH WILHELM NIETZSCHE

The true foundation of theology is to ascertain the character of God. It is by the art of Statistics that law in the social sphere can be ascertained and codified, and certain aspects of the character of God thereby revealed. The study of statistics is thus a religious service.

FLORENCE NIGHTINGALE

*in F. N. David 'Games, God and Gambling' (1962)*

We don't see things as they are. We see things as we are.

ANAÏS NIN

Sometimes the only sensible thing to do is panic!

LARRY NIVEN

*A Gift From Earth (1968)*

Speculation starts with assumptions. If you don't like mine, try your own.

LARRY NIVEN

*The Theory and Practice of Teleportation (1969)*

You've got to learn to think paranoid.

LARRY NIVEN

*Ringworld (1970)*

It's a nitwit idea. Nitwit ideas are for emergencies. The rest of the time you go by the Book, which is mostly a collection of nitwit ideas that worked.

LARRY NIVEN AND JERRY POURNELLE

*The Mote in God's Eye (1974)*

Any fool can foresee the past.

LARRY NIVEN

*The Integral Trees (1983)*

No knowledge is worth gaining unless it can be reported.

LARRY NIVEN

*The Smoke Ring (1987)*

Half of wisdom is learning what to unlearn.

LARRY NIVEN

*The Ringworld Throne (1996)*

My own view is that taping of conversations for historical purposes was a bad decision.

RICHARD MILHOUS NIXON

*Observer, Sayings of the Week, 19-May-1974*

Solutions are not the answer.

RICHARD MILHOUS NIXON

Oh, I get lucky a lot. I get lucky at four in the morning in the law library.

LOUIS NIZER

Laws were made to be broken.

CHRISTOPHER NORTH (PROFESSOR JOHN WILSON)

*Blackwood's Magazine (April 1929) 'Noctes Ambrosianae' no. 42*



The study of mathematics cannot be replaced by any other activity that will train and develop man's purely logical faculties to the same level of rationality.

C. O. OAKLEY

*American Mathematical Monthly (1949) 56: 19*

Essentia non sunt multiplicanda praeter necessitatem.

*(Entities are not to be multiplied beyond necessity.)*

WILLIAM OF OCCAM

*('Occam's razor')*

There is no need for any individual to have a computer in their home.

KEN OLSON, PRESIDENT OF DIGITAL EQUIPMENT CORP.

*(1977)*

Drugs have taught an entire generation of English kids the metric system.

P. J. O'ROURKE

*Modern Manners (1984)*

Never fight an inanimate object.

P. J. O'ROURKE

To be surprised, to wonder, is to begin to understand.

JOSÉ ORTEGA Y GASSET

Our firmest convictions are apt to be the most suspect, they mark our limitations and our bounds. Life is a petty thing unless it is moved by the indomitable urge to extend its boundaries.

JOSÉ ORTEGA Y GASSET

*Doublethink* means the power of holding two contradictory beliefs in one's mind simultaneously, and accepting both of them.

GEORGE ORWELL

*Nineteen Eighty-Four (1949)*

Being in a minority, even a minority of one, did not make you mad. There was truth, and there was untruth, and if you clung to the truth even against the whole world, you were not mad. 'Sanity is not statistical.'

GEORGE ORWELL

*Nineteen Eighty-Four (1949)*

Reality is not external. Reality exists in the human mind, and nowhere else.

GEORGE ORWELL

*Nineteen Eighty-Four (1949)*

There is no need for these hypotheses to be true, or even to be at all like the truth; rather one thing is sufficient for them—that they should yield calculations which agree with the observations.

OSIANDER

*Preface to Copernicus' De Revolutionibus (1543)*

Take rest; a field that has rested gives a beautiful crop.

OVID

I like to browse in occult bookshops if for no other reason than to refresh my commitment to science.

HEINZ PAGELS

*The Dreams of Reason*

I do not believe that any two men, on what are called doctrinal points, think alike who think at all. It is only those who have not thought who appear to agree.

THOMAS PAINE

*The Rights of Man pt. 2 (1792)*

Give me fruitful error any time, full of seeds, bursting with its own corrections. You can keep your sterile truth for yourself.

VILFREDO PARETO  
*comment on Kepler*

... no woman should be kept on the Pill for 20 years until, in fact, a sufficient number have been kept on the Pill for 20 years.

SIR ALAN STERLING PARKES  
*Nature 11-Apr-1970*

When anyone says “theoretically”, they really mean “not really”.

DAVID PARNAS

Usenet is mindful drivel.

JAMES ‘KIBO’ PARRY

Le silence éternel de ces espace infins m’effraie.

*(The eternal silence of these infinite spaces terrifies me.)*

BLAISE PASCAL  
*Pensées (1657) sect. 2, no. 162*

It is not certain that everything is uncertain.

BLAISE PASCAL  
*Pensées (1657)*

We are usually convinced more easily by reasons we have found ourselves than by those which have occurred to others.

BLAISE PASCAL  
*Pensées (1657)*

Reason’s last step is the recognition that there are an infinite number of things which are beyond it.

BLAISE PASCAL  
*Pensées (1657)*

Everything that is written merely to please the author is worthless.

BLAISE PASCAL

The excitement that a gambler feels when making a bet is equal to the amount he might win times the probability of winning it.

BLAISE PASCAL

Dans les champs de l’observation le hazard ne favorise que les esprits préparés.

*(In the field of observation, chance favours only the prepared mind.)*

LOUIS PASTEUR  
*Address, University of Lille, 7-Dec-1854*

Il n’existe pas de sciences appliquées, mais seulement des applications de la science.

*(There are no such things as applied sciences, only applications of science.)*

LOUIS PASTEUR  
*Address, 11-Sept-1872*

Unfortunate those scientists who have only clear thoughts in their heads!

LOUIS PASTEUR

Never tell people how to do things. Tell them what to do, and they will surprise you with their ingenuity.

GENERAL GEORGE S PATTON, JR.  
*War As I Knew It (1947)*

Ich habe nichts dagegen wenn Sie langsam denken, Herr Doktor, aber ich habe etwas dagegen wenn Sie rascher publizieren als denken.

*(I don't mind your thinking slowly: I mind your publishing faster than you can think.)*

WOLFGANG PAULI

This isn't right. This isn't even wrong.

WOLFGANG PAULI

The best way to have a good idea is to have a lot of ideas.

LINUS PAULING

Consider a precise number that is well known to generations of parents and doctors: the normal human body temperature of 98.6 Farenheit. Recent investigations involving millions of measurements reveal that this number is wrong; normal human body temperature is actually 98.2 Farenheit. The fault, however, lies not with Dr. Wunderlich's original measurements—they were averaged and sensibly rounded to the nearest degree: 37 Celsius. When this temperature was converted to Farenheit, however, the rounding was forgotten and 98.6 was taken to be accurate to the nearest tenth of a degree. Had the original interval between 36.5 and 37.5 Celsius been translated, the equivalent Farenheit temperatures would have ranged from 97.7 to 99.5. Apparently, dyscalculia can even cause fevers.

JOHN ALLEN PAULOS

*A Mathematician Reads the Newspaper*

Mathematics is no more computation than typing is literature.

JOHN ALLEN PAULOS

79.48% of all statistics are made up on the spot.

JOHN ALLEN PAULOS

Mathematics is the science which draws necessary conclusions.

BENJAMIN PEIRCE

*Linear Associative Algebra, Amer. J. Math. 4 (1881): 97*

The essence of belief is the establishment of a habit.

CHARLES SANDERS PEIRCE

*Illustrations of the Logic of Science, II ('Popular Science Monthly' Jan 1878)*

Mathematics is purely hypothetical: it produces nothing but conditional propositions.

CHARLES SANDERS PEIRCE

In the long run, every program becomes rococo, and then rubble.

ALAN J. PERLIS

You think you know when you learn, are more sure when you can write, even more when you can teach, but certain when you can program.

ALAN J. PERLIS

The computing field is always in need of new clichés.

ALAN J. PERLIS

Hardware: the parts of a computer system that can be kicked.

JEFF PESIS

If you don't know where you are going, you will probably end up somewhere else.

LAURENCE JOHNSTON PETER AND RAYMOND HULL

*The Peter Principle (1969) ch. 15*

An economist is an expert who will know tomorrow why the things he predicted yesterday didn't happen today.

LAURENCE JOHNSTON PETER

Originality is the fine art of remembering what you hear but forgetting where you heard it.

LAURENCE JOHNSTON PETER

We trained hard—but it seemed that every time we were beginning to form up into teams we were reorganized. I was to learn later in life that we tend to meet any new situation by reorganizing, and what a wonderful method it can be for creating the illusion of progress while actually producing confusion, inefficiency, and demoralization.

PETRONIUS ARBITER

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

E. J. PHELPS

*speech at Mansion House 24-Jan-1899*

The universe is full of magical things, patiently waiting for our wits to grow sharper.

EDEN PHILLPOTTS

Intelligence is what you use when you don't know what to do.

JEAN PIAGET

We all know that Art is not truth. Art is a lie which makes us realise the truth.

PABLO PICASSO

*In Dore Ashton Picasso on Art (1972) 'Two statements by Picasso'*

Computers are useless. They can only give you answers.

PABLO PICASSO

Everything you can imagine is real.

PABLO PICASSO

There is no abstract art. You must always start with something.

PABLO PICASSO

I am always doing that which I can not do, in order that I may learn how to do it.

PABLO PICASSO

In other words, apart from the known and the unknown, what else is there?

HAROLD PINTER

*The Homecoming (1965), Act II scene 1*

One geometry cannot be more true than another; it can only be more *convenient*. Geometry is not true, it is advantageous.

ROBERT M. PIRSIG

*Zen and the Art of Motorcycle Maintenance (1974) III.22*

Traditional scientific method has always been at the very *best*, 20–20 hindsight. It's good for seeing where you've been.

ROBERT M. PIRSIG

*Zen and the Art of Motorcycle Maintenance (1974) III.24*

An important scientific innovation rarely makes its way by gradually winning over and converting its opponents: it rarely happens that Saul becomes Paul. What does happen is that its opponents gradually die out, and that the growing generation is familiarised with the ideas from the beginning.

MAX PLANCK

*Scientific Autobiography (1949)*

Let no one ignorant of geometry enter my door.

PLATO

*Tzetztes, Chiliad, 8, 972*

The knowledge at which geometry aims is the knowledge of the eternal.

PLATO  
*Republic, VII, 527*

The unexamined life is not worth living to a human.

PLATO  
*Apology*

He is unworthy of the name of man who is ignorant of the fact that the diagonal of a square is incommensurate with its side.

PLATO

Mathematics is like checkers in being suitable for the young, not too difficult, amusing, and without peril to the state.

PLATO

Why is it that we entertain the belief that for every purpose odd numbers are the most effectual?

PLINY  
*Natural History, Bk. 28 ch. 5*

My definition of an expert in any field is a person who knows enough about what's really going to be scared.

P.J. PLAUGER

In these matters the only certainty is that nothing is certain.

PLINY

To find fault is easy; to do better may be difficult.

PLUTARCH

The mind is not a vessel to be filled, it is a fire to be kindled.

PLUTARCH

Any story should stand on its own feet—which means that, generally speaking, anything a writer has to say about his own story is better left unsaid. If it's worth saying, why didn't he say it in the story itself?

FREDERIK POHL  
*(1969)*

We regret the incident of next week, for it was done in haste and in error.

FREDERIK POHL  
*The Gold at the Starbow's End (1972)*

Q: What is worse than a prediction that doesn't come true? A: A Prediction that comes true sooner than you expect.

FREDERIK POHL  
*Heechee Rendezvous (1984)*

Reality is a subjective matter.

FREDERIK POHL  
*Heechee Rendezvous (1984)*

Science is not built on certainties; it is only a question of probabilities.

FREDERIK POHL  
*The Annals of the Heechee (1987)*

Science is built up with facts, as a house is with stones. But a collection of facts is no more science than a heap of stones is a house.

JULES HENRI POINCARÉ  
*La Science et l'Hypothèse (1905), Ch. 9*

It is often said that experiments must be made without preconceived ideas. That is impossible. Not only would it make all experiments barren, but that would be attempted which could not be done

JULES HENRI POINCARÉ  
*La Science et l'Hypothèse (1905)*

Dans les sciences mathématiques, une bonne notation a la même importance philosophique qu'une bonne classification dans les sciences naturelles.

JULES HENRI POINCARÉ

It is by logic that we prove, but by intuition we discover.

JULES HENRI POINCARÉ

Mathematics is the art of giving the same name to different things.

JULES HENRI POINCARÉ

Mathematicians do not study objects, but relations between objects. Thus, they are free to replace some objects by others so long as the relations remain unchanged. Content to them is irrelevant: they are interested in form only.

JULES HENRI POINCARÉ

It is the simple hypotheses of which one must be most wary; because these are the ones that have the most chances of passing unnoticed.

JULES HENRI POINCARÉ

Life is good for only two things: discovering mathematics and teaching mathematics.

SIMEON POISSON

The traditional mathematics professor of the popular legend is absentminded. He usually appears in public with a lost umbrella in each hand. He prefers to face the blackboard and to turn his back to the class. He writes  $a$ , he says  $b$ , he means  $c$ ; but it should be  $d$ . Some of his sayings are handed down from generation to generation.

“In order to solve this differential equation you look at it till a solution occurs to you.”

“This principle is so perfectly general that no particular application of it is possible.”

“Geometry is the science of correct reasoning on incorrect figures.”

“My method to overcome a difficulty is to go round it.”

“What is the difference between method and device? A method is a device which you used twice.”

GEORGE POLYÁ  
*How To Solve It*

Should we teach mathematical proofs in the high school? In my opinion, the answer is yes... Rigorous proofs are the hallmark of mathematics, they are an essential part of mathematics' contribution to general culture.

GEORGE POLYÁ  
*Mathematical discovery: On understanding, learning, and teaching problem solving (1981)*

The beauty in mathematics is seeing the truth without effort.

GEORGE POLYÁ

When introduced at the wrong time or place, good logic may be the worst enemy of good teaching.

GEORGE POLYÁ

There are three roads to ruin; women, gambling and technicians. The most pleasant is with women, the quickest is with gambling, but the surest is with technicians.

GEORGES POMPIDOU  
*Sunday Telegraph 26-May-1968*

Blessed is the man who expects nothing, for he shall never be disappointed.

ALEXANDER POPE  
*Letter to Fortescue, 23-Sept-1725*

Science must begin with myths, and with the criticism of myths.

SIR KARL RAIMUND POPPER

*'The Philosophy of Science' in C. A. Mace (ed.) British Philosophy in the Mid-Century (1957)*

Science may be described as the art of systematic oversimplification.

SIR KARL RAIMUND POPPER

*Observer, Sayings of the Week, 1-Aug-1982*

Where a calculator on the ENIAC is equipped with 19,000 vacuum tubes and weighs 30 tons, computers in the future may have only 1,000 vacuum tubes and perhaps only weigh 1.5 tons.

POPULAR MECHANICS

*(March 1949)*

One of the endearing things about mathematicians is the extent to which they will go to avoid doing any real work.

MATTHEW PORDAGE

'You damn sadist,' said mr cummings, 'you try to make people think.'

EZRA POUND

Can I say that if there is one thing that really pisses me off it is middle-class whingers going on about fucking tuition fees.

STEPHEN POUND (LABOUR MP FOR EALING NORTH)

*Response to constituent's phone call (2001)*

Of course, it is very important to be sober when you take an exam. Many worthwhile careers in the street-cleansing, fruit-picking and subway-guitar-playing industries have been founded on a lack of understanding of this simple fact.

TERRY PRATCHETT

*Moving Pictures*

The trouble with unimaginable horrors was that they were too easy to imagine.

TERRY PRATCHETT

*The Light Fantastic (1986)*

Theories, diverse as they are, have two things in common. They explain the observed facts, and they are completely and utterly wrong.

TERRY PRATCHETT

*The Light Fantastic (1986)*

Of all the forces in the universe, the hardest to overcome is the force of habit. Gravity is easy-peasy by comparison.

TERRY PRATCHETT

*Johnny and the Dead (1993)*

Ignorance is very important! It is an absolutely essential step in the learning process!

TERRY PRATCHETT

*Johnny and the Dead (1993)*

No one was avoiding him, it was just that an apparent random Brownian motion was gently moving everyone away.

TERRY PRATCHETT

*Reaper Man*

Analysis of variates  $y_1$  to  $y_5$  is not statistics; analysis of plant height in centimetres, root weight in grams, etc., may be.

D. A. PREECE

*In discussion of C. Chatfield, 'The initial examination of data', J. R. S. S. A. 148:234 (1985)*

Things are not as bad as they seem. They are worse.

BILL PRESS

A certain impression I had of mathematicians was. . . that they spent immoderate amounts of time declaring each other's work trivial.

RICHARD PRESTON  
*New Yorker* (1992)

. . . they say that Ptolemy once asked him [Euclid] whether there was in geometry no shorter way than that of the elements and he replied, 'There is no royal road to geometry'.

PROCLUS  
*Procl. II, 39*

Man is the measure of all things, of things that are, that they are, of things that are not, that they are not.

PROTAGORAS  
*in Diogenes Laertius 'Vitae Philosophicus' IX, 5*

The real voyage of discovery consists not in seeking new landscapes but in having new eyes.

MARCEL PROUST

If the human mind was simple enough to understand, we'd be too simple to understand it.

EMERSON PUGH

Inspiration is needed in geometry, just as much as in poetry.

ALEKSANDR SERGEYEVICH PUSHKIN  
*Likhtenshtein*

You see, our experts describe you as an appallingly dull fellow, unimaginative, timid, lacking in initiative, spineless, easily dominated, no sense of humour, tedious company and irrepressibly drab and awful. And whereas in most professions these would be considerable drawbacks, in chartered accountancy they are a positive boon.

MONTY PYTHON  
*Show Ten*

Verbosity leads to unclear, inarticulate things.

J. DANFORTH QUAYLE  
*30-Oct-1988*

I stand by all the misstatements that I've made.

J. DANFORTH QUAYLE  
*17-Aug-1989*

If we don't succeed we run the risk of failure.

J. DANFORTH QUAYLE  
*23-Mar-1990*

We are ready for any unforeseen event that may or may not occur.

J. DANFORTH QUAYLE  
*22-Sept-1990*

A low voter turnout is an indication of fewer people going to the polls.

J. DANFORTH QUAYLE

The future will be better tomorrow.

J. DANFORTH QUAYLE

Science without conscience is but the ruin of the soul.

FRANÇOIS RABELAIS  
*Gargantua's letter to Pantagruel* (1534)



My mother made me a scientist without ever intending to. Every Jewish mother in Brooklyn would ask her child after school: 'So? Did you learn anything today?' But not my mother. She always asked me a different question. 'Izzy,' she would say, 'did you ask a good question today?'

ISIDOR ISAAC RABI (NOBEL PRIZE FOR PHYSICS 1944)

The original title [for THE MADNESS OF KING GEORGE], THE MADNESS OF GEORGE III, was dropped because test audiences in America wondered why they hadn't seen parts I and II.

RADIO TIMES

2-8 May 1988

In examinations those who do not wish to know ask questions of those who cannot tell.

SIR WALTER ALEXANDER RALEIGH

*Laughter from a Cloud (1923), 'Some Thoughts on Examinations'*

Lack of skill dictates economy of style.

JOEY RAMONE

Decisions are easier, you know, when there are no choices left.

P. V. NARASIMHA RAO

*quoted in 'the Observer', 7-July-1991*

Imagine if every Thursday your shoes exploded if you tied them the usual way. This happens to us all the time with computers, and nobody thinks of complaining.

JEFF RASKIN

A computer lets you make more mistakes faster than any invention in human history, with the possible exceptions of handguns and tequila.

MITCH RATCLIFFE

pencil and paper: n. An archaic information storage and transmission device that works by depositing smears of graphite on bleached wood pulp.

ERIC S. RAYMOND & GUY L. STEELE

*Jargon File 2.9.10 (1992)*

Facts are stupid things.

RONALD REAGAN

Exercise is the beste intrument in learnyng.

ROBERT RECORDE

*The Whetstone of Witte (1557)*

Human beings, for all their pretensions, have a remarkable propensity for lending themselves to classification somewhere within neatly labelled categories. Even the outrageous exceptions may be classified as outrageous exceptions!

W. J. REICHMANN

Create the options. Shake the dice. All else is nonsense.

LUKE REINHART

*The Dice Man (1971)*

A mathematician is a machine for turning coffee into theorems.

P. RENYI

Luck is the residue of design.

BRANCH RICKEY

Partisanship is our great curse. We too readily assume that everything has two sides and that it is our duty to be on one or the other.

JAMES HARVEY ROBINSON

*The Mind in the Making*

[Of her economics]: Being innocent of mathematics, I had to think.

JOAN ROBINSON

I didn't think; I experimented.

WILHELM ROENTGEN

Theory is often just practice with the hard bits left out.

J. M. ROBSON

*in 'The Library' (1985) VI.7*

You know everybody is ignorant, only on different subjects.

WILL ROGERS

*in the 'New York Times', 31-Aug-1924*

It isn't what we don't know that gives us trouble, it's what we know that ain't so.

WILL ROGERS

Even if you're on the right track, you'll get run over if you just sit there.

WILL ROGERS

Nothing you can't spell will ever work.

WILL ROGERS

Les gens bien portants sont des malades qui s'ignorent.

*(Men who feel well are sick men neglecting themselves.)*

JULES ROMAINS

*Knock, ou le Triomphe de la Médecine (1923)*

Computers make it easier to do a lot of things, but most of the things they make it easier to do don't need to be done.

ANDY ROONEY

I think we consider too much the good luck of the early bird, and not enough the bad luck of the early worm.

FRANKLIN D. ROOSEVELT

The best material model of a cat is another, or preferably the same, cat.

A. ROSENBLUETH & NORBERT WIENER

*Philosophy of Science (1945)*

In the fall of 1972 President Nixon announced that the rate of increase of inflation was decreasing. This was the first time a sitting president used the third derivative to advance his case for reelection.

HUGO ROSSI

*Notices of the American Mathematical Society (1996) 43(10)*

We often hear that mathematics consists mainly in "proving theorems". Is a writer's job mainly that of "writing sentences"? A mathematician's work is mostly a tangle of guesswork, analogy, wishful thinking and frustration, and proof, far from being the core of discovery, is more often than not a way of making sure that our minds are not playing tricks.

GIAN-CARLO ROTA

*Introduction to 'The Mathematical Experience' by P. J. Davis & R. Hersch (1983)*

Good advice is something a man gives when he is too old to set a bad example.

LA ROUCHEFOUCAULD

It is only slightly facetious to say that digital information lasts forever—or five years, whichever comes first.

JEFF ROTHENBERG

*Scientific American*

There was once a group of Biostatisticians and a group of Epidemiologists riding together on a train to joint meetings. All the Epidemiologists had tickets, but the Biostatisticians only had one ticket between them. Inquisitive by nature, the Epidemiologists asked the Biostatisticians how they were going to get away with such a small sample of tickets when the conductor came through. The Biostatisticians said, “Easy. We have methods for dealing with that.”

Later, when the conductor came to punch tickets, all the Biostatisticians slipped quietly into the bathroom. When the conductor knocked on the door, the head Biostatistician slipped their one ticket under the door thoroughly fooling the layman conductor.

After the joint meetings were over, the Biostatisticians and the Epidemiologists again found themselves on the same train. Always quick to catch on, the Epidemiologists had purchased one ticket between them. The Biostatisticians (always on the cutting edge) had purchased NO tickets for the trip home. Confused, the Epidemiologists asked the Biostatisticians “We understand how your methods worked when you had one ticket, but how can you possibly get away with no tickets?” “Easy,” replied the Biostatisticians smugly, “we have different methods for dealing with that situation.”

Later, when the conductor was in the next car, all the Epidemiologists trotted off to the bathroom with their one ticket and all the Biostatisticians packed into the other bathroom. Shortly, the head Biostatistician crept over to where the Epidemiologists were hiding and knocked authoritatively on the door. As they had been instructed, the Epidemiologists slipped their one ticket under the door. The head Biostatistician took the Epidemiologists’ one and only ticket and returned triumphantly to the Biostatistician group. Of course, the Epidemiologists were subsequently discovered and publicly humiliated.

MORAL OF THE STORY. Do not use statistical methods unless you understand the principles behind them!

PATRICK ROYSTON (ORIGINAL AUTHOR UNKNOWN)  
*posting to allstat, 7-Feb-1996*

‘In fact,’ Sam the Gonoph says, ‘I long ago came to the conclusion that all life is six to five against.’

DAMON RUNYON  
*Collier’s, 8-Sept-1934, ‘A Nice Price’*

The race may not always be to the swift nor the victory to the strong, but that’s how you bet.

DAMON RUNYON

The lust for academic respectability is the major cause of intellectual whoredom.

R. J. RUSHDOONY

Better the rudest work that tells a story or records a fact, than the richest without meaning.

JOHN RUSKIN  
*Seven Lamps of Architecture (1849) ‘The Lamp of Memory’ sect. 7*

Not only is there but one way of *doing* things rightly, but there is only one way of *seeing* them, and that is, seeing the whole of them.

JOHN RUSKIN  
*The Two Paths (1859) Lecture 2*

Geometry has been, throughout, of supreme importance in the history of knowledge.

BERTRAND RUSSELL  
*Foundations of Geometry (1897)*

Mathematics, rightly viewed, possesses not only truth, but supreme beauty—a beauty cold and austere, like that of sculpture, without appeal to any part of our weaker nature, without the gorgeous trappings of paintings or music, yet sublimely pure and capable of a stern perfection such as only the greatest art can show.

BERTRAND RUSSELL  
*Philosophical Essays (1910): ‘The Study of Mathematics’*

Mathematics may be defined as the subject in which we never know what we are talking about, nor whether what we are saying is true.

BERTRAND RUSSELL  
*Mysticism and Logic (1918), Ch. 4*

William James used to preach the ‘will to believe’. For my part, I should wish to preach the ‘will to doubt’. What is wanted is not the will to believe but the will to find out, which is the exact opposite.

BERTRAND RUSSELL  
*Sceptical Essays (1928)*

Aristotle maintained that women have fewer teeth than men; although he was twice married, it never occurred to him to verify this statement by examining his wives’ mouths.

BERTRAND RUSSELL  
*The Impact of Science on Society (1952)*

The method of “postulating” what we want has many advantages; they are the same as the advantages of theft over honest toil.

BERTRAND RUSSELL  
*Introduction to Mathematical Philosophy*

The desire to understand the world and the desire to reform it are the two great engines of progress.

BERTRAND RUSSELL  
*Marriage and Morals*

The point of philosophy is to start with something so simple as not to seem worth stating, and to end with something so paradoxical that no one will believe it.

BERTRAND RUSSELL  
*The Philosophy of Logical Atomism*

I like also the men who study the Great Pyramid, with a view to deciphering its mystical lore. Many great books have been written on this subject, some of which have been presented to me by their authors. It is a singular fact that the Great Pyramid always predicts the history of the world accurately up to the date of publication of the book in question, but after that date it becomes less reliable.

BERTRAND RUSSELL

A good notation has a subtlety and suggestiveness which at times make it almost seem like a live teacher.

BERTRAND RUSSELL

Although this may seem a paradox, all exact science is dominated by the idea of approximation.

BERTRAND RUSSELL

There is much pleasure to be gained from useless knowledge.

BERTRAND RUSSELL

I would never die for my beliefs because I might be wrong.

BERTRAND RUSSELL

Many people would rather die than think; in fact, most do.

BERTRAND RUSSELL

The whole problem with the world is that fools and fanatics are always so certain of themselves, but wiser people so full of doubts.

BERTRAND RUSSELL

What men really want is not knowledge but certainty.

BERTRAND RUSSELL

Almost everything that distinguishes the modern world from earlier centuries is attributable to science, which achieved its most spectacular triumphs in the seventeenth century.

BERTRAND RUSSELL

Men are born ignorant, not stupid; they are made stupid by education.

BERTRAND RUSSELL

The examination system, and the fact that instruction is treated mainly as training for a livelihood, leads the young to regard knowledge from a purely utilitarian point of view, as the road to money, not as the gateway to wisdom.

BERTRAND RUSSELL

If your experiment needs statistics, you ought to have done a better experiment.

ERNEST RUTHERFORD

We haven't got the money, so we've got to think.

ERNEST RUTHERFORD

All science is either physics or stamp collecting.

ERNEST RUTHERFORD

You should never bet against anything in science at odds of more than about  $10^{12}$  to 1.

ERNEST RUTHERFORD

Don't let me catch anyone talking about the Universe in *my* department.

ERNEST RUTHERFORD

Never say 'I tried it once and it did not work'.

ERNEST RUTHERFORD

The only possible interpretation of any research whatever in the 'social sciences' is: some do, some don't.

ERNEST RUTHERFORD

The astonishing thing is that the average person is at greater risk of being killed by an asteroid than dying in a plane crash.

PROFESSOR SIR MARTIN RYLE, ASTRONOMER ROYAL  
*Observer, Quotes of the Year, 31-Dec-2000*

You say that my way of thinking cannot be tolerated? What of it? The man who alters his way of thinking to suit others is a fool. My way of thinking is the result of my reflections. It is part of my inner being, the way I am made. I do not contradict them, and would not even if I wished to. For my system, which you disapprove of, is also my greatest comfort in life, the source of all my happiness—it means more to me than my life itself.

MARQUIS DONATIEN ALPHONSE DE SADE

Remember to never split an infinitive. The passive voice should never be used. Do not put statements in the negative form. Verbs have to agree with their subjects. Proofread carefully to see if you words out. If you reread your work, you can find on rereading a great deal of repetition can be avoided by rereading and editing. A writer must not shift your point of view. And don't start a sentence with a conjunction. (Remember, too, a preposition is a terrible word to end a sentence with.) Don't overuse exclamation marks!! Place pronouns as close as possible, especially in long sentences, as of 10 or more words, to their antecedents. Writing carefully, dangling participles must be avoided. If any word is improper at the end of a sentence, a linking verb is. Take the bull by the hand and avoid mixing metaphors. Avoid trendy locutions that sound flaky. Everyone should be careful to use a singular pronoun with singular nouns in their writing. Always pick on the correct idiom. The adverb always follows the verb. Last but not least, avoid cliches like the plague; seek viable alternatives.

WILLIAM SAFIRE

The well-meaning contention that all ideas have equal merit seems to me little different from the disastrous contention that no ideas have any merit.

CARL EDWARD SAGAN  
*Broca's Brain (1978)*

Absence of evidence is not evidence of absence.

CARL EDWARD SAGAN  
*The Dragons of Eden*

In order to make an apple pie from scratch, you must first create the universe.

CARL EDWARD SAGAN  
*Cosmos*

Extraordinary claims demand extraordinary evidence.

CARL EDWARD SAGAN

The essence of science is that it is self-correcting.

CARL EDWARD SAGAN

But the fact that some geniuses were laughed at does not imply that all who are laughed at are geniuses. They laughed at Columbus, they laughed at Fulton, they laughed at the Wright brothers. But they also laughed at Bozo the Clown.

CARL EDWARD SAGAN

It means nothing to be open to a proposition we don't understand.

CARL EDWARD SAGAN

Skeptical scrutiny is the means, in both science and religion, by which deep insights can be winnowed from deep nonsense.

CARL EDWARD SAGAN

The machine does not isolate man from the great problems of nature but plunges him more deeply into them.

ANTOINE DE SAINT-EXUPÉRY  
*Wind, Sand, and Stars*

A designer knows when he has achieved perfection not when there is nothing left to add, but when there is nothing left to take away.

ANTOINE DE SAINT-EXUPÉRY

A little inaccuracy sometimes saves tons of explanation.

SAKI (HECTOR HUGH MUNRO)  
*The Square Egg (1924): 'Clovis on the Alleged Romance of Business'*

Those who cannot remember the past are condemned to repeat it.

GEORGE SANTAYANA  
*The Life of Reason (1905), Vol. I, Ch. 12*

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

GEORGE SANTAYANA  
*Winds of Doctrine (1913): Modernism and Christianity*

There are books in which the footnotes, or the comments scrawled by some reader's hand in the margin, are more interesting than the text. The world is one of those books.

GEORGE SANTAYANA

I confused things with their names: that is belief.

JEAN-PAUL SARTRE  
*Words (1964) pt. 2*

The only place where success comes before work is in a dictionary.

VIDAL SASSOON  
*(quoting one of his teachers)*

He that leaveth nothing to chance will do few things ill, but he will do very few things.

GEORGE SAVILE (LORD HALIFAX)  
*17th Century*

Get a bunch of those 3-D glasses and wear them at the same time. Use enough to get it up to a good, say, 10- or 12-D.

ROD SCHMIDT

I wrote my own connection software in LISP. Got a phone bill for \$1,000. My computer kept calling itself.

ROD SCHMIDT

Interpretation is a free walk on firm ground.

ARTUR SCHNABEL

*My Life and Music (1961) II.10*

There is still much good music to be written in C major.

ARNOLD SCHOENBERG

*In J. Machlis, 'Introduction to Contemporart Music'*

Thus, the task is, not so much to see what no one has yet seen, but to think what nobody has yet thought, about that which everybody sees.

ERWIN SCHRÖDINGER

To describe the universe in terms of our present knowledge is to say almost nothing about everything.

ENGELBERT SCHÜCKING

No problem is so formidable that you can't walk away from it.

CHARLES SCHULTZ

Try not to have a good time. This is supposed to be educational.

CHARLES SCHULTZ

Small is Beautiful.

E. F. SCHUMACHER

*Book Title (1973)*

Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius—and a lot of courage—to move in the opposite direction.

E. F. SCHUMACHER

*obituary, 'the Guardian', 6-Sept-1977*

To compose music, all you have to do is remember a tune that nobody else has thought of.

ROBERT SCHUMANN

As we acquire more knowledge, things do not become more comprehensible, but more mysterious.

ALBERT SCHWEITZER

You don't fuck around with the infinite.

MARTIN SCORSESE & MARDIK MARTIN

*Mean Streets (1973)*

Comment is free but facts are sacred.

RONNIE SCOTT

The secret of staying young is mixing with older people.

C. P. SCOTT

*in the 'Manchester Guardian', 5-May-1921*

They couldn't hit an elephant at this dist—

GENERAL JOHN SEDGEWICK

*last words (1864)*

Education is when you read the fine print. Experience is what you get if you don't.

PETE SEEGER

For every person wishing to teach there are thirty not wanting to be taught.

W. C. SELLAR & R. J. YEATMAN  
*And Now All This (1932)*

Shun no toil to make yourself remarkable by some talent or other; yet do not devote yourself to one branch exclusively. Strive to get clear notions about all. Give up no science entirely; for science is but one.

SENECA

Insisting on perfect safety is for people who don't have the balls to live in the real world.

MARY SHAFER

The Normal . . . is the Ordinary made beautiful; it is also the Average made lethal.

PETER SHAFFER  
*Equus (1983 ed.) I.vix*

Striving to better, oft we mar what's well.

WILLIAM SHAKESPEARE  
*King Lear (1605) Act I, Scene iv*

If you can look into the seeds of time,  
And say which grain will grow, and which will not,  
Speak then to me.

WILLIAM SHAKESPEARE  
*Macbeth (1606) Act I, Scene iii*

I cannot do't without compters.

WILLIAM SHAKESPEARE  
*The Winters Tale (1610–11) Act IV, Scene iii*

All great truths begin as blasphemies.

GEORGE BERNARD SHAW  
*Annajanska (1917)*

You see things; and you say "Why?" But I dream things that never were; and I say "Why not?"

GEORGE BERNARD SHAW  
*Back to Methuselah (1921)*

The reasonable man adapts himself to the world; the unreasonable one persists in trying to adapt the world to himself. Therefore all progress depends on the unreasonable man.

GEORGE BERNARD SHAW  
*Maxims for Revolutionists: Reason*

The power of accurate observation is commonly called cynicism by those who have not got it.

GEORGE BERNARD SHAW

A life spent making mistakes is not only more honorable, but more useful than a life spent doing nothing.

GEORGE BERNARD SHAW

Progress is impossible without change, and those who cannot change their minds cannot change anything.

GEORGE BERNARD SHAW

Common sense is instinct. Enough of it is genius.

GEORGE BERNARD SHAW

I am a Bayesian

I'm Rabelaisian

Don't know what I want but I know how to get it

Integrate  $p$

Numerically. . .

JOHN EWART HARDERN SHAW  
*(librettist for 'The Savage Axioms', Valencia, 1988)*



As a statistician, I want to use mathematics to help deal with practical uncertainty. The natural mathematical way to handle uncertainty is via probability. About the simplest practical probability statement I can think of is “The probability that a fair coin, tossed at random, will come down ‘heads’ is 1/2”. Now try to define “fair coin”, “at random” and “probability 1/2” without using subjective probability or circular definitions.

Summary: if a practical probability statement is not subjective, then it must be tautologous, ill-defined, or useless.

Of course, for balance, some of the time I teach subjective methods, and some of the time I teach useless methods :-).

JOHN EWART HARDERN SHAW  
*Internet posting 13-Aug-1993*

The widest misapprehension seems to be that ‘Statistics’ is a handy recipe book for producing a choice of bland TV dinners out of an undifferentiated pile of offal.

JOHN EWART HARDERN SHAW  
*Internet posting 18-Oct-1993*

...so you keep on tossing until eventually it gives ‘Head’. Er... That’s not quite what I meant...

JOHN EWART HARDERN SHAW  
*(Lecturing on the negative binomial distribution, 1993)*

A great truth is a truth whose opposite isn’t also a great truth.

Cos, tan, sin—seems like the perfect Greek island holiday.

Heard about the sheep who jumped into a Klein bottle?—turned into a haggis.

Sarah (20 months) on first seeing juggling: ‘Balls skipping in the sky’.

Statisticians do it with two standard deviations and 95% confidence.

“There is no such thing as society”. Well, not now there bloody isn’t.

“Would you like something off the trolley?” asked the waiter, offering me a beefburger.

yacc—the piece of code that understandeth all parsing.

3 ((4&({\*. (=+/))++/=3:)@([:/0&, ^:(i.3)@|:"2^:2))&.>@] ^:(i.@[] <#:3 6 2

JOHN EWART HARDERN SHAW  
*(sometime .signature lines)*

You could get killed if you waited around for abstract proofs.

ROBERT SHECKLEY  
*A Suppliant in Space (1973)*

A ship in a harbour is safe, but that is not what ships are for.

JOHN A. SHEDD

Nought may endure but mutability.

PERCY BYSSHE SHELLEY  
*‘Mutability’ (1816)*

If you read an article you agree with, you think ‘Aha!’ You don’t think ‘I agree with the writer’ but ‘the writer agrees with me.’ The key to success is the Aha Syndrome.

STANHOPE SHELTON  
*Observer, Sayings of the Week, 5-Oct-1969*

I shall be neither partial nor impartial.

EMMANUEL SHINWELL

Pay no attention to what the critics say; no statue has ever been put up to a critic.

JEAN SIBELIUS  
*In B. de Törne, ‘Sibelius: A Close-up’, Ch. 2*

MATHIAS VAA: What motivated you to become an academic?

LARRY SIEDENTOP: I liked reading and *trying* to think, although there are times now when one suspects that academic life is a conspiracy to prevent one reading.

LARRY SIEDENTOP  
*The Brick 21 (2001)*

We have all heard that a million monkeys banging on a million typewriters will eventually reproduce the entire works of Shakespeare. Now, thanks to the Internet, we know this is not true.

ROBERT SILENSKY

The problem with life is that you live it forward and understand it backward.

CHARLES SIMPSON

I WILL NOT CUT CORNERS

" " " " " "  
" " " " " "

THE SIMPSONS

I WILL NOT SLEEP THROUGH MY EDUCATION

I WILL NOT SLEEP THROUGH MY EDUCATION

I WILL NOT SLEEP THROUGH MY EDUCATION

THE SIMPSONS

I WILL NOT EXPOSE THE IGNORANCE OF THE FACULTY

I WILL NOT EXPOSE THE IGNORANCE OF THE FACULTY

I WILL NOT EXPOSE THE IGNORANCE OF THE FACULTY

THE SIMPSONS

MRS. B: This year's topic is 'Resolved: The national speed limit should be lowered to 55 miles per hour.'  
HOMER: 55? That's ridiculous! Sure, it'll save a few lives, but millions will be late!

THE SIMPSONS  
*The Way We Was*

HOMER: Wait a minute. That word you keep calling me?

ARTIE: Ignoramus?

HOMER: Ignoramus? It means I'm stupid, doesn't it?

ARTIE: There is a difference between ignorance and stupidity.

HOMER: Not to me, there isn't!

THE SIMPSONS  
*The Way We Was*

LISA: And I'm studying for the math fair. If I win, I'll bring home a brand new protractor.

HOMER: Too bad we don't live on a farm.

THE SIMPSONS  
*Dead Putting Society*

HOMER: How can one little insulated wire bring so much happiness?

THE SIMPSONS  
*Homer vs. Lisa and the 8th Commandment*

BART: He says there aren't any easy answers. I say, he's not looking hard enough!

THE SIMPSONS  
*Lisa's Substitute*

HOMER: Hey, just because I don't care doesn't mean I don't understand!

THE SIMPSONS  
*Lisa's Substitute*

MS. M: So  $y = r^3/3$ . And if you determine the rate of change in this curve correctly, I think you'll be pleasantly surprised.

CLASS: [chuckles]

MS. M: Don't you get it, Bart? Derivative  $dy = 3r^2/3$ , or  $r^2 dr$ , or  $r drr$ . Har-de-har-har, get it?

BART: [not amused] Oh, yeah. [forced laugh]

THE SIMPSONS

*Bart the Genius*

BART: I got a B in arithmetic.

ARMY: I got a B in arithmetic.

BART: Would have got an A but I was sick.

ARMY: Would have got an A but I was sick.

THE SIMPSONS

*Bart the General*

HOMER: Who would have guessed reading and writing would pay off!

THE SIMPSONS

*Mr. Lisa Goes to Washington*

HOMER: I tried ordering you, I tried punishing you, and God help me, I even tried reasoning with you.

THE SIMPSONS

*Bart the Daredevil*

BRENT GUNSILMAN: And now, with his picks for today's games, the man who's right 52% of the time, Smooth Jimmy Apollo!

THE SIMPSONS

*Lisa the Greek*

HOMER: Your mother has this crazy idea that gambling is wrong. Even though they say it's okay in the bible.

LISA: Really? Where?

HOMER: Uh... Somewhere in the back.

THE SIMPSONS

*Lisa the Greek*

LISA: Aunt Selma?

SELMA: [grunt]

LISA: Do you think you'll ever married?

SELMA: [sadly] Oh, I don't know. [perks up] Why? You know somebody?

LISA: No.

SELMA: [grunt]

LISA: Since I'm sure you'd only resent the pity of an eight-year-old niece, I'll simply hope that you're one of the statistically insignificant number of forty-year-old single women who ever find their fair prince.

THE SIMPSONS

*Principal Charming*

HOMER: Here's good news! According to this eye-catching article, SAT scores are declining at a slower rate!

LISA: Dad, I think this paper is a flimsy hodgepodge of pie graphs, factoids and Larry King.

HOMER: Hey, this is the only paper in America that's not afraid to tell the truth, that everything is just fine.

THE SIMPSONS

*Homer Defined*

OTTO: Bye, little dudes! Don't learn anything I wouldn't learn!

THE SIMPSONS  
*Homer Defined*

JANEY: Well, that was a waste of time.

LISA: Janey, school is *never* a waste of time.

MISS HOOVER: Since we have fifteen minute until recess, please put down your pencils and stare at the front of the room.

THE SIMPSONS  
*Separate Vocations*

SKINNER: Um, ladies and gentlemen, the unthinkable has happened. Some sick, twisted individual has stolen every teacher's edition in this school.

TEACHER: What'll we do!?

MISS KRABAPPEL: Declare a snow day!

TEACHER: Does anyone know the multiplication table?

SKINNER: No, please, don't panic. They can smell fear—make no sudden movements.

THE SIMPSONS  
*Separate Vocations*

BURNS: What good is money if it can't inspire terror in your fellow man?

THE SIMPSONS  
*Burns Verkaufen der Kraftwerk*

SKINNER: Just think what we can buy with that money... History books that know how the Korean War came out. Math books that don't have that base six crap in them! And a state-of-the-art detention hall where children are held in place with magnets.

THE SIMPSONS  
*Dog of Death*

OTTO: I stand on my record. Fifteen crashes and not a single fatality.

THE SIMPSONS  
*Otto Show*

I have thousands of bad ideas all the time.

CLIVE SINCLAIR  
*Observer, Sayings of the Week, 20-Feb-1985*

Education is what survives when what has been learnt has been forgotten.

BURRHUS FREDEROC SKINNER  
*New Scientist 21-May-1964*

The future, according to some scientists, will be exactly like the past, only far more expensive.

JOHN SLADEK

We often discover what will do, by finding out what will not do; and probably he who never made a mistake never made a discovery.

SAMUEL SMILES  
*Self-help (1859), Ch. 11*

A child who is protected from all controversial ideas is as vulnerable as a child who is protected from every germ. The infection, when it comes—and it will come—may overwhelm the system, be it the immune system or the belief system.

JANE SMILEY

Any approach to scientific inference which seeks to legitimize *an* answer in reponse to complex uncertainty is, for me, a totalitarian parody of a would-be rational learning process.

ADRIAN F. M. SMITH

*Present position and potential developments: some personal views Bayesian statistics, J.R.S.S.A 147: 245-259 (1984)*

I am one of the unpraised, unrewarded millions without whom Statistics would be a bankrupt science. It is we who are born, who marry, who die, in constant ratios.

LOGAN PEARSALL SMITH

What would life be without arithmetic, but a scene of horrors?

SYDNEY SMITH

(1835)

Have the courage to be ignorant of a great number of things, in order to avoid the calamity of being ignorant of everything.

SYDNEY SMITH

[of Thomas Babington Macaulay] He not only overflowed with learning, but stood in the slop.

SYDNEY SMITH

In theory, there is no difference between theory and practice. But, in practice, there is.

JAN L. A. VAN DE SNEPSCHEUT

Science is the refusal to believe on the basis of hope.

CARRIE P. SNOW

A good many times I have been present at gatherings of people who, by the standards of traditional culture, are thought highly educated and who have with considerable gusto been expressing their incredulity at the illiteracy of scientists. Once or twice I have been provoked and have asked the company how many of them could describe the Second Law of Thermodynamics. The response was cold: it was also negative.

CHARLES PERCY SNOW

*The Two Cultures (The Rede Lecture 1959)*

I know that I am intelligent, because I know that I know nothing.

SOCRATES

There is only one good, knowledge, and one evil, ignorance.

SOCRATES

Employ your time in improving yourself by other men's writings so that you shall come easily by what others have laboured hard for.

SOCRATES

The best answers are those that destroy the question.

SUSAN SONTAG

One must learn by doing the thing; though you think you know it, you have no certainty until you try.

SOPHOCLES

*Trachiniae 592*

Facts do not "speak for themselves." They speak for or against competing theories. Facts divorced from theories or visions are mere isolated curiosities.

THOMAS SOWELL

Ours may become the first civilization destroyed, not by the power of our enemies, but by the ignorance of our teachers and the dangerous nonsense they are teaching our children. In an age of artificial intelligence, they are creating artificial stupidity.

THOMAS SOWELL

Usenet is like a herd of performing elephants with diarrhea—massive, difficult to redirect, awe-inspiring, entertaining, and a source of mind-boggling amounts of excrement when you least expect it.

GENE SPAFFORD  
*net posting (1992)*

Don't sweat it—it's not real life. It's only ones and zeroes.

GENE SPAFFORD

To me education is a leading out of what is already there in the pupil's soul. To Miss Mackay it is a putting in of something that is not there, and that is not what I call education, I call it intrusion.

MURIEL SPARK  
*The Prime of Miss Jean Brodie (1961)*

Never check for an error condition you don't know how to handle.

HENRY SPENCER

Belief is no substitute for arithmetic.

HENRY SPENCER

Those who do not understand Unix are condemned to reinvent it—poorly.

HENRY SPENCER

Science is organised knowledge.

HERBERT SPENCER  
*Education (1861) ch. 29*

Evolution. . . is—a change from an indefinite, incoherent homogeneity, to a definite coherent heterogeneity.

HERBERT SPENCER  
*First Principles (1862) ch. 16*

There is one thing that will keep a man in everlasting ignorance and poverty. That one thing is contempt prior to investigation.

HERBERT SPENCER

How often misused words generate misleading thoughts.

HERBERT SPENCER

Everything in nature is a cause from which there flows some effect.

SPINOZA

One death is a tragedy, a million deaths is a statistic.

STALIN (JOSEF VISSARIONOVICH DJUGASHVILI)

If addiction is judged by how long a dumb animal will sit pressing a lever to get a 'fix' of something, to its own detriment, then I would conclude that netnews is far more addictive than cocaine.

ROB STAMPFLI

There's only one me, and I'm stuck with him.

ROBERT L. STANFIELD

SPOCK: 'Fascinating' is a word I use for the unexpected.

STAR TREK  
*The Squire of Gothos*

Q: I'm not good in groups. It's difficult to work in a group when you're omnipotent.

STAR TREK; THE NEXT GENERATION  
*Deja Q*

What is the difference between unethical and ethical advertising? Unethical advertising uses falsehoods to deceive the public; ethical advertising uses truth to deceive the public.

VILHJALMUR STEFANSSON  
*Discovery (1964)*

The philosophers of the Middle Ages demonstrated both that the Earth did not exist and also that it was flat. Today they are still arguing about whether the world exists, but they no longer dispute about whether it is flat.

VILHJALMUR STEFANSSON

Everybody gets so much information all day long that they lose their common sense.

GERTRUDE STEIN

LAMARR: Be still, Taggart. My mind is aglow with whirling transient nodes of thought careening through a cosmic vapor of invention.

TAGGART: Ditto.

NORMAN STEINBERG, MEL BROOKS, ANDREW BERGMAN, RICHARD PRYOR & ALAN UNGER  
*Blazing Saddles (1974)*

LAMARR: Be still! My mind is a raging torrent flooded with rivulets of thought cascading in a waterfall of creative alternatives.

NORMAN STEINBERG, MEL BROOKS, ANDREW BERGMAN, RICHARD PRYOR & ALAN UNGER  
*Blazing Saddles (1974)*

There are no foolish questions and no man becomes a fool until he has stopped asking questions.

CHARLES PROTEUS STEINMETZ

J'aimais, et j'aime encore, les mathématiques pour elles-mêmes comme n'admettant pas *l'hypocrisie* et le *vague*, mes deux bêtes d'aversion.

STENDHAL (HENRI BEYLE)  
*La Vie d'Henri Brulard (1890) ch. 10*

Finality is death. Perfection is finality. Nothing is perfect. There are lumps in it.

JAMES STEPHENS  
*The Crock of Gold (1912) bk. 1, ch. 4*

The ability to think rationally is pretty rare, even in prestigious universities.

NEAL STEPHENSON  
*Zodiac (1988)*

When you're being rational and scientific, you have to take into account that bizarre events can throw off your results.

NEAL STEPHENSON  
*Zodiac (1988)*

If I took time out to have an opinion about everything, I wouldn't get any work done.

NEAL STEPHENSON  
*Snow Crash*

Forget trying to pass for normal. Follow your geekdom. Embrace your nerditude.

BRUCE STERLING

What is the character of a family to an hypothesis? my father would reply.

LAURENCE STERNE  
*Tristram Shandy (1759-67) bk. 1, ch. 21*

Digressions, incontestably, are the sunshine;—they are the life, the soul of reading;—take them out of this book for instance,—you might as well take the book along with them.

LAURENCE STERNE  
*Tristram Shandy (1759-67) bk. 1, ch. 22*

It is the nature of an hypothesis, when once a man has conceived it, that it assimilates every thing to itself, as proper nourishment; and, from the first moment of your begetting it, it generally grows the stronger by every thing you see, hear, read or understand.

LAURENCE STERNE  
*Tristram Shandy (1759-67) bk. 2, ch. 19*

Of all the cants which are canted in this canting world,—though the cant of hypocrites may be the worst,—the cant of criticism is the most tormenting!

LAURENCE STERNE  
*Tristram Shandy (1759-67) bk. 3, ch. 12*

To travel hopefully is a better thing than to arrive, and the true success is to labour.

ROBERT LOUIS STEVENSON  
*Virginibus Puerisque (1881) VI. El Dorado*

I regard you with an indifference closely bordering on aversion.

ROBERT LOUIS STEVENSON

The true mathematician is not a juggler of numbers, but a juggler of *concepts*.

IAN STEWART  
*Concepts of Modern Mathematics (1975)*

Many pages have been expended on polemics in favour of rigour over intuition, or of intuition over rigour. Both extremes miss the point: the power of mathematics lies precisely in the combination of intuition *and* rigour.

IAN STEWART  
*Concepts of Modern Mathematics (1975)*

An intuitive proof allows you to understand *why* the theorem must be true; the logic merely provides firm grounds to show that it *is* true.

IAN STEWART  
*Concepts of Modern Mathematics (1975)*

Whatever it is that we are doing, it does at least give consistent results, which is encouraging.

IAN STEWART  
*Concepts of Modern Mathematics (1975)*

Construction of models, I said, was an art. On this occasion the art is conjuring: I can do no better than wave the magic wand and extract the rabbit from the hat.

IAN STEWART  
*Concepts of Modern Mathematics (1975)*

If you could pick a real number at random, you would be virtually certain to pick one that was transcendental.

IAN STEWART  
*Concepts of Modern Mathematics (1975)*

A proper understanding of linear algebra requires a synthesis of three points of view:

- (i) the underlying geometrical motivation,
- (ii) the abstract algebraic formulation,
- (iii) the matrix-theoretic technique.

This makes matters hard for the student, to begin with; which is probably why most textbooks concentrate on one of the three viewpoints. But in the long run this bias will cause more problems than it solves: the sight of a student struggling with enormous matrices when a little geometric insight would solve the whole problem in two lines is not an inspiring one.



IAN STEWART  
*Concepts of Modern Mathematics (1975)*

A person who insists on understanding every tiny step before going on to the next is liable to concentrate so much on looking at his feet that he fails to realize he is walking in the wrong direction.

IAN STEWART  
*Concepts of Modern Mathematics (1975)*

Why is it drug addicts and computer aficionados are both called users?

CLIFFORD STOLL  
*(1995)*

Life is a gamble at terrible odds—if it was a bet, you wouldn't take it.

TOM STOPPARD  
*Rosencrants and Guildenstern are Dead (1967) act 3*

If rationality were the criterion of things being allowed to exist, the world would be a gigantic field of soya beans.

TOM STOPPARD  
*Jumpers (1972) act I*

ANDERSON: Tomorrow is another day, McKendrick.

MCKENDRICK: Tomorrow, in my experience, is usually the same day.

TOM STOPPARD  
*Professional Foul*

A truth is always a compound of two half-truths, and you never reach it, because there is always something more to say.

TOM STOPPARD

There are two kinds of statistics, the kind you look up and the kind you make up.

REX TODHUNTER STOUT  
*Death of a Doxy, Ch. 9*

The more constraints one imposes, the more one frees one's self of the chains that shackle the spirit... the arbitrariness of the constraint only serves to obtain precision of execution.

IGOR STRAVINSKY  
*Poetics of Music (1947)*

Academism results when the reasons for the rule change, but not the rule.

IGOR STRAVINSKY

I have learned throughout my life as a composer chiefly through my mistakes and pursuits of false assumptions, not my exposure to founts of wisdom and knowledge.

IGOR STRAVINSKY

Lesser artists borrow, great artists steal.

IGOR STRAVINSKY

Facts speak louder than statistics.

JUSTICE GEOFFREY STREATFIELD  
*Observer, Sayings of the Week, 19-Mar-1950*

There's an old story about the person who wished his computer were as easy to use as his telephone. That wish has come true, since I no longer know how to use my telephone.

BJARNE STROUSTRUP

While C allowed you to easily shoot yourself in the foot, C++ makes it harder but when you do it will blow your leg off.

BJARNE STROUSTRUP

Logic and truth are two very different things, but they often look the same to the mind that's performing the logic.

THEODORE STURGEON  
*More Than Human (1953)*

Ninety percent of everything is crap.

THEODORE STURGEON

The group was alarmed to find that if you are a labourer, cleaner or dock worker, you are twice as likely to die than a member of the professional classes.

SUNDAY TIMES  
*31-Aug-1980*

There is nothing in this world constant, but inconstancy.

JONATHAN SWIFT  
*A Critical Essay upon the Faculties of the Mind (1709)*

And he gave it for his opinion, that whoever could make two ears of corn or two blades of grass to grow upon a spot of ground where only one grew before, would deserve better of mankind, and do more essential service to his country than the whole race of politicians put together.

JONATHAN SWIFT  
*Gulliver's Travels (1726) 'A Voyage to Brobdingnag' ch. 7*

They have likewise discovered two lesser stars, or *satellites*, which revolve around Mars, whereof the innermost is distant from the centre of the primary planet exactly three of his diameters, and the outermost five; the former revolves in the space of ten hours, and the latter in twenty-one and a half; so that the squares of their periodical times are very near in the same proportion with the cubes of their distances from the centre of Mars, which evidently shows them to be governed by the same law of gravitation, that influences the other heavenly bodies.

JONATHAN SWIFT  
*Gulliver's Travels (1726) 'A Voyage to Laputa' ch. 3*

These papers are delivered to a set of artists very dexterous in finding out the mysterious meanings of words, syllables, and letters. For instance, they can decipher a close-stool to signify a Privy Council, a flock of geese a senate, a lame dog an invader, a cod's head a —, the plague a standing army, a buzzard a prime minister, the gout a high priest, a gibbet a secretary of state, a chamber-pot a committee of grandees, a sieve a court lady, a broom a revolution, a mousetrap an employment, a bottomless pit the Treasury, a sink the Court, a cap and bells a favourite, a broken reed a court of justice, an empty tun a general, a running sore the administration.

When this method fails, they have two others more effectual, which the learned among them call acrostics and anagrams. First they can decipher all initial letters into political meanings. Thus *N.* shall signify a plot, *B.* a regiment of horse, *L.* a fleet at sea. Or secondly by transposing the letters of the alphabet in any suspected paper, they can lay open the deepest designs of a discontented party. So, for example, if I should say in a letter to a friend, *Our brother Tom has just got the piles*, a man of skill in this art would discover how the same letters which compose that sentence, may be analysed into the following words; *Resist; a plot is brought home, the tour.* And this is the anagrammatic method.

JONATHAN SWIFT  
*Gulliver's Travels (1726) 'A Voyage to Laputa' ch. 6*

Wise Aristotle and Smiglesius,  
By ratiocinations specious,  
Have strove to prove with great precision,  
With definition and division,  
HOMO EST RATIONE PRAEDITUM;  
But, for my soul, I cannot credit 'em.

JONATHAN SWIFT  
*The Logicians Refuted*

When a true genius appears in this world, you may know him by this sign, that the dunces are all in confederacy against him.

JONATHAN SWIFT

*Thoughts on Various Subjects*

Two wrongs don't make a right, but they make a good excuse.

THOMAS SZASZ

*The Second Sin (1973) 'Social Relations'*

Discovery consists of seeing what everybody has seen and thinking what nobody has thought.

ALBERT SZENT-GYÖRGYI

*in I. J. Good, 'The Scientist Speculates' (1962)*

Research means going out into the unknown with the hope of finding something new to bring home. If you know in advance what you are going to do, or even to find there, then it is not research at all: then it is only a kind of honourable occupation.

ALBERT SZENT-GYÖRGYI

*Perspectives in Biology and Medicine (1971)*

Basic research may seem very expensive. I am a well-paid scientist. My hourly wage is equal to that of a plumber, but sometimes my research remains barren of results for weeks, months or years and my conscience begins to bother me for wasting the taxpayer's money. But in reviewing my life's work, I have to think that the expense was not wasted. Basic research, to which we owe everything, is relatively very cheap when compared with other outlays of modern society. The other day I made a rough calculation which led me to the conclusion that if one were to add up all the money ever spent by man on basic research, one would find it to be just about equal to the money spent by the Pentagon this past year.

ALBERT SZENT-GYÖRGYI

*The Crazy Ape (1971)*

[A vitamin is] a substance that makes you ill if you don't eat it.

ALBERT SZENT-GYÖRGYI

The real problem is what to do with the problem solvers after the problems are solved.

G. TALESE

Like most of those who study history, He [Napoleon III] learned from the mistakes of the past how to make new ones.

A. J. P. TAYLOR

*Listener 6-June-1963 'Mistaken Lessons from the Past'*

[When asked if he had strongly held left-wing views]: No. I have extreme views, weakly held.

A. J. P. TAYLOR

Two paradoxes are better than one; they may even suggest a solution.

EDWARD TELLER

Models are to be used, but not to be believed.

HENRI THEIL

*Principles of Econometrics (1971)*

Someone's boring me. I think it's me.

DYLAN THOMAS

The capacity to blunder slightly. Without this special attribute we would still be anaerobic bacteria, and there would be no music.

LEWIS THOMAS

*The Medusa and the Snail*

I think it's 60 per cent likely that Western civilization will destroy itself on 20 or 30 years' time.

E. P. THOMPSON  
*(20-Dec-1981)*

When the going gets weird, the weird turn pro.

HUNTER S. THOMPSON

I have a theory that the truth is never told during the 9 to 5 hours.

HUNTER S. THOMPSON

When in doubt, use brute force.

KEN THOMPSON

I often say that when you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind.

WILLIAM THOMSON, LORD KELVIN  
*Lecture to the Institution of Civil Engineers, 3 May 1883*

Heavier-than-air flying machines are impossible.

WILLIAM THOMSON, LORD KELVIN  
*(1895)*

I have not the smallest molecule of faith in aerial navigation other than ballooning, or of the expectation of good results from any of the trials we hear of.

WILLIAM THOMSON, LORD KELVIN  
*letter to Baden-Powell (1896)*

Radio has no future.

WILLIAM THOMSON, LORD KELVIN  
*(1897)*

Do not imagine that mathematics is hard and crabbed, and repulsive to common sense. It is merely the etherealization of common sense.

WILLIAM THOMSON, LORD KELVIN

The most distinct and beautiful statements of any truth must take at last the mathematical form.

HENRY DAVID THOREAU  
*A Week on the Concord and Merrimac Rivers (1849)*

Some circumstantial evidence is very strong, as when you find a trout in the milk.

HENRY DAVID THOREAU  
*Diary, 11-Nov-1850*

Simplicity, simplicity, simplicity. I say, let your affairs be as two or three, and not a hundred or a thousand; instead of a million count half a dozen, and keep your accounts on your thumb nail.

HENRY DAVID THOREAU  
*Walden (1854)*

But lo! men have become the tools of their tools.

HENRY DAVID THOREAU  
*Walden (1854)*

If a man does not keep pace with his companions, perhaps it is because he hears a different drummer. Let him step to the music which he hears, however measured or faraway.

HENRY DAVID THOREAU  
*Walden (1854)*

A job not worth doing isn't worth doing well.

MARK THORSON

Celestial navigation is based on the premise that the Earth is the center of the universe. The premise is wrong, but the navigation works. An incorrect model can be a useful tool.

KELVIN THROOP III

One martini is alright, two is too many, three is not enough.

JAMES THURBER

It's better to know some of the questions, than all of the answers.

JAMES THURBER

There is no safety in numbers, or in anything else.

JAMES THURBER

At the trial, the defence were permitted to lead evidence of the Bayes Theorem in connection with the statistical evaluation of the DNA profile. Although their Lordships expressed no concluded view on the matter, they had very grave doubts as to whether that evidence was properly admissible, because it trespassed on an area peculiarly and exclusively within the jury's province, namely the way in which they evaluated the relationship between one piece of evidence and another.

THE TIMES  
*9-May-1996*

The secret of science is to ask the right question, and it is the choice of problem more than anything else that marks the man of genius in the scientific world.

SIR HENRY TIZARD  
*in C. P. Snow, 'A Postscript to Science and Government' (1962)*

The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn.

ALVIN TOFFLER

It doesn't do to leave a live Dragon out of your calculations, if you live near him.

J. R. R. TOLKIEN

The movement of humanity, arising as it does from innumerable human wills, is continuous. To understand the laws of this continuous movement is the aim of history. Only by taking an infinitesimally small unit for observation (the differential of history, that is, the individual tendencies of man) and attaining to the art of integrating them (that is, finding the sum of these infinitesimals) can we hope to arrive at the laws of history.

LEV NIKOLGEVICH TOLSTOY  
*War and Peace*

Truth, like gold, is to be obtained not by its growth, but by washing away from it all that is not gold.

LEV NIKOLGEVICH TOLSTOY

I have one very basic rule when it comes to 'good ideas'. A good idea is not an idea that solves a problem cleanly. A good idea is an idea that solves *several* things at the same time. The mark of good coding is not that the program does what you want, it's that it *also* does something that you didn't start out wanting.

LINUS TORVALDS

Sirs, I have tested your machine. It adds a new terror to life and makes death a long-felt want.

SIR HERBERT BEERBOHM TREE  
*(to a gramophone company who asked him for a testimonial)*

Socrates gave no diplomas or degrees, and would have subjected any disciple who demanded one to a disconcerting catechism on the nature of true knowledge.

G. M. TREVELYAN  
*History of England V, Ch. 2*

Education. . . has produced a vast population able to read but unable to distinguish what is worth reading.

G. M. TREVELYAN

As one of the legislators of the country I am prepared to state that statistics are always false.

ANTHONY TROLLOPE

*The Eustace Diamonds (1873)*

The universe is a big place, perhaps the biggest.

‘KILGORE TROUT’ (PHILIP JOSÉ FARMER)

*Venus on the Half-Shell (1974) ch. 1*

This paper gives wrong solutions to trivial problems. The basic error, however, is not new.

CLIFFORD TRUESDELL

*Mathematical Reviews 12: 561*

There is nothing that can be said by mathematical symbols and relations which cannot also be said by words. The converse, however, is false. Much that can be and is said by words cannot successfully be put into equations, because it is nonsense.

CLIFFORD TRUESDELL

*Six Lectures on Modern Natural Philosophy*

I never give them hell. I just tell the truth, and they think it is hell.

HARRY S TRUMAN

*In Look 3-Apr-1956*

If you can't convince them, confuse them.

HARRY S TRUMAN

How far would Moses have gone if he had taken a poll in Egypt?

HARRY S TRUMAN

It is amazing what you can accomplish if you do not care who gets the credit.

HARRY S TRUMAN

Far better an approximate answer to the right question, which is often vague, than the exact answer to the wrong question, which can always be made precise.

JOHN W. TUKEY

*Ann. Math. Stat. 33 (1962)*

If we need a short suggestion of what exploratory data analysis is, I would suggest that

1. It is an attitude AND
2. A flexibility AND
3. Some graph paper (or transparencies, or both).

JOHN W. TUKEY

*American Statistician (1986) 40: 74*

In a world in which the price of calculation continues to decrease rapidly, but the price of theorem proving continues to hold steady or increase, elementary economics indicates that we ought to spend a larger and larger fraction of our time on calculation.

JOHN W. TUKEY

*American Statistician (1986) 40: 74*

The combination of some data and an aching desire for an answer does not ensure that a reasonable answer can be extracted from a given body of data.

JOHN W. TUKEY

*American Statistician (1986) 40: 74*

The best thing about being a statistician is that you get to play in everyone's backyard.

JOHN W. TUKEY

I share no man's opinions; I have my own.

IVAN TURGENEV

Machines take me by surprise with great frequency.

ALAN TURING

Science is a differential equation. Religion is a boundary condition.

ALAN TURING

In the 1960s, molecular biologists could only mouth vague claims about DNA guiding the development of organisms. Now they can tell how this happens in more detail, and back this discussion by (tens of?) thousands of experiments that evince these details. Two centuries ago, Lavoisier described how oxygen combines with other elements to release energy. Our knowledge of chemical reaction has increased tremendously since then. But what has happened to the theoretical underpinnings of homeopathic dilution in two centuries? Why does it remain vague mouthings about "molecular patterns"?

RUSSELL TURPIN

*internet posting, 7-Jan-1993*

Whenever a proponent of a controversial empirical claim counters criticisms of the evidence by reference to a "paradigm shift," it is time to put on one's hip-waders.

RUSSELL TURPIN

*internet posting, 7-Jan-1993*

The statements was interesting, but tough.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

*The Adventures of Huckleberry Finn (1884), Ch. 17*

All you need in this life is ignorance and confidence, then success is sure.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

*Letter to Mrs. Foote, 2-Dec-1887*

Few things are harder to put up with than the annoyance of a good example.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

*Pudd'nhead Wilson (1894), Ch. 19*

Loyalty to petrified opinions never yet broke a chain or freed a human soul in this world—and never will.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

*Constancy*

A genuine expert can always foretell a thing that is five hundred years away easier than he can a thing that's only five hundred seconds off.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

*A Connecticut Yankee in King Arthur's Court*

A prophet doesn't have to have any brains. They are good to have, of course, for the ordinary exigencies of life, but they are no use in professional work.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

*A Connecticut Yankee in King Arthur's Court*

I have never let my schooling interfere with my education.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

History may not repeat itself, but it does rhyme a lot.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

In the space of one hundred and seventy six years, the Lower Mississippi has shortened itself two hundred and forty two miles. That is an average of a trifle over one mile and a third per year. Therefore, any calm person, who is not blind or idiotic, can see that in the old oolitic silurian period, just a million years ago next November, the Lower Mississippi river was upwards of one million three hundred miles long, and stuck out over the gulf of Mexico like a fishing rod. And by the same token any person can see that seven hundred forty two years from now the Lower Mississippi will be only a mile and three quarters long, and Cairo and New Orleans will have joined their streets together, and be plodding comfortably along under a single mayor and a mutual board of aldermen. There is something fascinating about science. One gets such wholesale returns of conjecture out of such a trifling investment of fact.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)  
*Life on the Mississippi*

Scientists have odious manners, except when you prop up their theory; then you can borrow money of them.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)  
*The Bee (What is Man and Other Essays)*

The researches of many commentators have already thrown much darkness on this subject, and it is probable that, if they continue, we shall soon know nothing at all about it.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

I was gratified to be able to answer promptly, and I did. I said I didn't know.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

A classic is something that everybody wants to have read and nobody wants to read.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

You cannot depend on your eyes when your imagination is out of focus.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

Good decisions come from experience. Experience comes from making bad decisions.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

Substitute "damn" every time you're inclined to write "very"; your editor will delete it and the writing will be just as it should be.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

Why shouldn't truth be stranger than fiction? Fiction, after all, has to make sense.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

The man with a new idea is a crank, until the idea succeeds.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

We should be careful to get out of an experience only the wisdom that is in it, and stop there.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

The man who does not read good books has no advantage over the man who cannot read them.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

When I was a boy of fourteen, my father was so ignorant I could hardly stand to have the old man around. But when I got to be twenty-one, I was astonished at how much he had learned in seven years.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

First get your facts; and then you can distort them at your leisure.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

I don't give a damn for a man that can only spell a word one way.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)



Sacred cows make the best hamburger.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

Facts are stubborn, but statistics are more pliable.

MARK TWAIN (SAMUEL LANGHORNE CLEMENS)

We are often told that we are incoherent, but into the word people try to put an insult that is rather hard for me to fathom. Everything is incoherent. . . . There is no logic. Only relative necessities discovered *a posteriori*, valid not in any exact sense but only as explanations.

TRISTAN TZARA  
*Lecture on Dada (1924)*

A beautiful problem is like a funny joke.

DANIEL ULLMAN  
*Amer. Math. Monthly 105:292 (1998)*

The number of UNIX machines has grown to 10 with more expected.

THE UNIX MANUAL  
*(1972)*

Now that we have all this useful information, it would be nice to do something with it. (Actually, it can be emotionally fulfilling just to get the information. This is usually only true, however, if you have the social life of a kumquat.)

UNIX PROGRAMMER'S MANUAL

I imagine most of that stuff on the information highway is roadkill anyway.

JOHN UPDIKE  
*(1994)*

The world was created on 22nd October, 4004 BC at 6 o'clock in the evening.

ARCHBISHOP JAMES USSHER

If the world should blow itself up, the last audible voice would be that of an expert saying it can't be done.

PETER USTINOV

In nature there are no rewards or punishments; there are consequences.

HORACE ANNESLEY VACHELL  
*The Face of Clay*

Un poème n'est jamais achevé—c'est toujours un accident qui la termine, c'est-à-dire qui le donne au public.

*(A poem is never finished; it's always an accident that puts a stop to it—that is to say, gives it to the public.)*

PAUL VALÉRY  
*Littérature (1930)*

Il faut n'appeler Science: que l'ensemble des recettes qui réussissent toujours.—Tout le reste est littérature.  
*(Science means simply the collection of recipes that are always successful. All else is literature.)*

PAUL VALÉRY  
*Moralités (1932)*

In the physical world, one cannot increase the size or quantity of anything without changing its quality. Similar figures exist only in pure geometry.

PAUL VALÉRY

Having precise ideas often leads to a man doing nothing.

PAUL VALÉRY

The trouble with our times is that the future is not what it used to be.

PAUL VALÉRY

The effect of sexual cannibalism on the evolution of large populations.

N. VANDEWALLE

*Title of paper—Physica A 245:113-123 (1997)*

Do not quench your inspiration and your imagination; do not become the slave of your model.

VINCENT VAN GOGH

Humans are a time-binding species, existing in an eternal now. The future flows through them and becomes the past, but it is always the present that counts.

JOHN VARLEY

*Overdrawn at the Memory Bank (1976)*

Thou shalt not screw around with things you do not understand.

JOHN VARLEY

*Overdrawn at the Memory Bank (1976)*

If there is anything the nonconformist hates worse than a conformist, it's another nonconformist who doesn't conform to the prevailing standard of nonconformity.

BILL VAUGHAN

Hope deceives more men than cunning does.

VAUVENARGUES

*(1746)*

The mind of man is more intuitive than logical, and comprehends more than it can coordinate.

VAUVENARGUES

*(1746)*

The outcome of any serious research can only be to make two questions grow where only one grew before.

THORSTEIN VEBLEN

*The Place of Science in Modern Civilization and Other Essays (1919)*

The abolishment of pain in surgery is a chimera. It is absurd to go on seeking it.

DR. ALFRED VELPEAU

*(1839)*

The task of science is to stake out the limits of the knowable, and to center consciousness within them.

RUDOLF VIRCHOW

Parenthetical remarks (however relevant) are unnecessary.

FRANK L. VISCO

*How to Write Good*

Out of a hundred people in the world at least sixty have smallpox, and of these sixty, twenty die of it in the flower of their youth and twenty keep the unpleasant marks for ever.

VOLTAIRE (FRANÇOIS MARIE AROUET)

*Letters on England (1733): On Inoculation with Smallpox*

It is patently false to say: 'Not to wager that God exists is to wager that He does not', for the man who doubts and asks to be enlightened certainly does not wager for or against.

VOLTAIRE (FRANÇOIS MARIE AROUET)

*Letters on England (1733): On the Pensées of Pascal*

This thought is a pure sophism, and the falsity consists in the word *ignorance*, used with two different meanings. A person who cannot read or write is ignorant, but a mathematician, because he is ignorant of the principles hidden in nature, is not at the degree of ignorance from which he set out when he began to learn to read.

VOLTAIRE (FRANÇOIS MARIE AROUET)  
*Letters on England (1733): On the Pensées of Pascal*

‘Travaillons sans raisonner,’ dit Martin; ‘c’est le seul moyen de rendre la vie supportable’.  
(‘Let us work without theorising’, said Martin; ‘it’s the only way to make life endurable’.)

VOLTAIRE (FRANÇOIS MARIE AROUET)  
*Candide (1758) XXX*

There is an astonishing imagination, even in the science of mathematics. . . . We repeat, there was far more imagination in the head of Archimedes than in that of Homer.

VOLTAIRE (FRANÇOIS MARIE AROUET)  
*Philosophical Dictionary (1764)*

Show all these fanatics a little geometry, and they learn it quite easily. But, strangely enough, their minds are not thereby rectified. They perceive the truths of geometry, but it does not teach them to weigh probabilities. Their minds have set hard. They will reason in a topsy-turvy way all their lives, and I am sorry for it.

VOLTAIRE (FRANÇOIS MARIE AROUET)  
*Philosophical Dictionary (1764): Esprit faux*

What is an idea?

It’s an image that paints itself in my brain.

So all your ideas are images?

Assuredly; for the most abstract ideas are the consequences of all the objects I’ve perceived.

VOLTAIRE (FRANÇOIS MARIE AROUET)  
*Philosophical Dictionary (1764): Idée*

It’s very sad to have so many ideas and not to know precisely the nature of ideas.

I admit it; but it’s much sadder and much more foolish to think we know what we don’t know.

VOLTAIRE (FRANÇOIS MARIE AROUET)  
*Philosophical Dictionary (1764): Idée*

We have admittedly defined the infinite in arithmetic by a loveknot, in this manner  $\infty$ ; but we possess not therefore the clearer notion of it.

VOLTAIRE (FRANÇOIS MARIE AROUET)  
*Philosophical Dictionary (1764): Infinity*

Le mieux est l’ennemi du bien.

(*The best is the enemy of the good.*)

VOLTAIRE (FRANÇOIS MARIE AROUET)  
*Contes (1772) ‘La Begueule’*

As long as people believe in absurdities they will continue to commit atrocities.

VOLTAIRE (FRANÇOIS MARIE AROUET)

Doubt is not a pleasant condition, but certainty is absurd.

VOLTAIRE (FRANÇOIS MARIE AROUET)

Among the things Billy Pilgrim could not change were the past, the present and the future.

KURT VONNEGUT, JR.  
*Slaughterhouse 5 (1969) ch. 3*

I refuse to be intimidated by reality any more. After all, what is reality anyway? Nothin' but a collective hunch.

JANE WAGNER  
*Search for Signs of Intelligent Life in the Universe*

'Automatic' simply means that you can't repair it yourself.

MARY H. WALDRIP

The application of efficient statistical procedure has power, but the application of common sense has more.

JASPER WALL

Lisp has all the visual appeal of oatmeal with fingernail clippings mixed in.

LARRY WALL  
*net post, 21-July-1994*

The three principal virtues of a programmer are Laziness, Impatience, and Hubris.

LARRY WALL

Real programmers can write assembly code in any language.

LARRY WALL

Usenet is essentially Letters to the Editor without the editor. Editors don't appreciate this, for some reason.

LARRY WALL

The little girl had the making of a poet in her who, being told to be sure of her meaning before she spoke, said, 'How can I know what I think till I see what I say?'

GRAHAM WALLAS  
*The Art of Thought (1926), ch. 4*

To know and not to act is not yet to know.

WANG YANG MING

Did you ever have the measles, and if so how many?

ARTEMUS WARD (CHARLES FARRAR BROWNE)  
*Artemus Ward His Book, 'The Census'*

Who the hell wants to hear actors talk?

HARRY WARNER  
*(1925)*

At Group L, Stoffel oversees six first-rate programmers, a managerial challenge roughly comparable to herding cats.

LARRY WASSERMAN  
*Washington Post Magazine, 9-June-1985*

Now let me explain why this makes intuitive sense.

LARRY WASSERMAN

Should not the Society of Indexers be known as Indexers, Society of, The?

KEITH WATERHOUSE  
*Bookends (1990)*

It is necessary to be somewhat underemployed if you want to do something significant.

JAMES DEWEY WATSON  
*The Double Helix, Ch. 29*

No *good* model ever accounted for *all* the facts, since some data was bound to be misleading if not plain wrong.

JAMES DEWEY WATSON  
*in Francis Crick 'What Mad Pursuit' (1988)*

I think there is a world market for maybe five computers.

THOMAS J. WATSON, CHAIRMAN OF IBM  
*(1943)*

If you want to increase your success rate, double your failure rate.

THOMAS J. WATSON, CHAIRMAN OF IBM

Do not put faith in what statistics say until you have carefully considered what they do not say.

WILLIAM W. WATT

CALVIN: I don't need to do a better job. I need better P.R. on the job I *do*.

BILL WATTERSON  
*Calvin and Hobbs*

CALVIN: Verbing weirds language.

BILL WATTERSON  
*Calvin and Hobbs*

CALVIN: It's not denial. I'm just very selective about what I accept as reality.

BILL WATTERSON  
*Calvin and Hobbs*

CALVIN: You can't just turn on creativity like a faucet. You have to be in the right mood.

HOBBS: What mood is that?

CALVIN: Last-minute panic.

BILL WATTERSON  
*Calvin and Hobbs*

Instead of this absurd division into sexes they ought to class people as static or dynamic.

EVELYN WAUGH  
*Decline and Fall (1928) III. 7.*

The economists are generally right in their predictions, but generally a good deal out in their dates.

SIDNEY WEBB  
*Observer, Sayings of the Week, 25-Feb-1924*

History is lived forward but it is written in retrospect.

DAME VERONICA WEDGWOOD  
*In Salman Rushdie, 'The Jaguar Smile', Epilogue*

Numerical calculation, and all the devices connected with it, would seem to deserve a far more prominent place in elementary teaching than they receive at present.

ANDRE WEIL  
*American Mathematical Monthly (1954) 61: 36*

The universe is an enormous direct product of representations of symmetry groups.

STEVEN WEINBERG

Nothing destroys the powers of general observation quite so much as a life of experimental science.

HERBERT GEORGE WELLS  
*The Food of the Gods (1904)*

Human history becomes more and more a race between education and catastrophe.

HERBERT GEORGE WELLS  
*The Outline of History (1920), II.41.4*

Statistical thinking will one day be as necessary for efficient citizenship as the ability to read and write.

HERBERT GEORGE WELLS  
*in Warren Weaver, Scientific American, January 1952*

Scientific prophecy will not be fortune-telling, whatever else it may be.

HERBERT GEORGE WELLS

Between two evils, I always choose the one I haven't tried before.

MAE WEST  
*Klondike Annie (1936)*

Numbers, he explained, constitute the only universal language.

NATHANAEL WEST  
*Miss Lonelyhearts (1933)*

The trouble with doing something right the first time is that nobody appreciates how difficult it was.

WALT WEST

This 'telephone' has too many shortcomings to be seriously considered as a means of communication. The device is inherently of no value to us.

WESTERN UNION  
*internal memo (1876)*

My work has always tried to unite the true with the beautiful and when I had to choose one or the other, I usually chose the beautiful.

HERMANN WEYL

Symmetry, as wide or as narrow as you define its meaning, is one idea by which man through the ages has tried to comprehend and create order, beauty and perfection.

HERMANN WEYL

Time is what prevents everything from happening at once.

JOHN ARCHIBALD WHEELER  
*American J. of Physics (1978) 46:323*

No phenomenon is a real phenomenon until it is an observed phenomenon.

JOHN ARCHIBALD WHEELER

One can only learn by teaching.

JOHN ARCHIBALD WHEELER

If you haven't found something strange during the day, it hasn't been much of a day.

JOHN ARCHIBALD WHEELER

Consistency is the paste jewel that only cheap men cherish.

WILLIAM ALLEN WHITE

It is a profoundly erroneous truism, repeated by all copy books and by eminent people when they are making speeches, that we should cultivate the habit of thinking of what we are doing. The precise opposite is the case. Civilization advances by extending the number of important operations which we can perform without thinking about them.

ALFRED NORTH WHITEHEAD  
*An Introduction to Mathematics (1911)*

It is a safe rule to apply that, when a mathematical or philosophical author writes with a misty profundity, he is talking nonsense.

ALFRED NORTH WHITEHEAD  
*An Introduction to Mathematics (1911)*

To see what is general in what is particular, and what is permanent in what is transitory, is the aim of scientific thought.

ALFRED NORTH WHITEHEAD  
*An Introduction to Mathematics (1911)*

It is more important that a proposition be interesting than that it be true. This statement is almost a tautology. For the energy of operation of a proposition in an occasion of experience is its interest, and is its importance. But of course a true proposition is more apt to be interesting than a false one.

ALFRED NORTH WHITEHEAD  
*Adventure of Ideas (1933) pt. 4, ch. 16*

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  
*Dialogues (1954) prologue*

So far as the mere imparting of information is concerned, no university has had any justification for existence since the popularization of printing in the fifteenth century.

ALFRED NORTH WHITEHEAD  
*The Aims of Education*

Knowledge does not keep any better than fish.

ALFRED NORTH WHITEHEAD  
*The Aims of Education, Pt. III, Ch. 4*

A science which hesitates to forget its founders is lost.

ALFRED NORTH WHITEHEAD

Seek simplicity but distrust it.

ALFRED NORTH WHITEHEAD

It is no paradox to say that in our most theoretical moods we may be nearest to our most practical applications.

ALFRED NORTH WHITEHEAD

The study of mathematics is apt to commence in disappointment.

ALFRED NORTH WHITEHEAD

There is no more common error than to assume that, because prolonged and accurate mathematical calculations have been made, the application of the result to some fact of nature is absolutely certain.

ALFRED NORTH WHITEHEAD

Everything of importance has been said before by somebody who did not discover it.

ALFRED NORTH WHITEHEAD

My brother cuts the time it takes to read a newspaper by skipping everything in the future tense; and it's amazing what he doesn't miss.

KATHARINE WHITEHORN  
*Sunday Best, 'Never-Never Land'*

Do I contradict myself? Very well then I contradict myself. (I am large, I contain multitudes).

WALT WHITMAN  
*Song of Myself (1938)*

[on learning APL] Then I realized that I had spelled ‘-’ wrong.

JOHN WHITMORE

I do not remember ever having seen a sustained argument by any author which, starting from philosophical or theological premises likely to meet with general acceptance, reached the conclusion that a praiseworthy ordering of one’s life is to devote it to research in mathematics.

SIR EDMUND WHITTAKER  
*Scientific American* 183 (Sept. 1950) p 42

CHO-JE: When everything is new, can anything be a surprise?

DOCTOR WHO  
*Planet of the Spiders* (1974)

THE DOCTOR: Logic, my dear Zoe, merely enables one to be wrong with authority.

DOCTOR WHO  
*Frontier in Space*

THE DOCTOR: I suppose the best way to find out where you’ve come from is to find out where you’re going, and then work backwards.

DOCTOR WHO  
*City of Death*

THE DOCTOR: I never make stupid mistakes. Only very, very clever ones.

DOCTOR WHO  
*Timewyrm: Genesys*

THE DOCTOR: First things first, but not necessarily in that order.

DOCTOR WHO  
*Meglos*

THE DOCTOR: I’m a very dangerous fellow when I don’t know what I’m doing.

DOCTOR WHO  
*Destiny of the Daleks*

Both science and art have to do with ordered complexity.

LANCELOT LAW WHYTE  
*The Griffin* 6:10 (1957)

>John Baez did some interesting reflections on the sporadic finite  
>groups, it is amusing that there are 26 of these and string theory  
>favours 26 dimensions of spacetime.

Also, there are 26 monsters in rogue.

MATTHEW P WIENER  
*sci.math posting, 20-May-1996*

What most experimenters take for granted before they begin their experiments is infinitely more interesting than any results to which their experiments lead.

NORBERT WIENER

Some problems are just too complicated for rational logical solutions. They admit of insights, not answers.

JEROME BERT WIESNER  
*in ‘New Yorker’ 26-Jan-1963*

An idea that is not dangerous is unworthy of being called an idea at all.

OSCAR FINGAL O’FLAHERTIE WILLS WILDE  
*The Critic as Artist* (1890)



Experience is the name everyone gives to their mistakes.

OSCAR FINGAL O'FLAHERTIE WILLS WILDE  
*Lady Windermere's Fan (1891), III*

Education is an admirable thing, but it is well to remember from time to time that nothing that is worth knowing can be taught.

OSCAR FINGAL O'FLAHERTIE WILLS WILDE  
*(1891)*

Truth is never pure, and rarely simple.

OSCAR FINGAL O'FLAHERTIE WILLS WILDE  
*The Importance of Being Earnest (1895), I*

On an occasion of this kind it becomes more than a moral duty to speak one's mind. It becomes a pleasure.

OSCAR FINGAL O'FLAHERTIE WILLS WILDE  
*The Importance of Being Earnest (1895), II*

Oh! it is absurd to have a hard-and-fast rule about what one should read and what one shouldn't. More than half of modern culture depends upon what one shouldn't read.

OSCAR FINGAL O'FLAHERTIE WILLS WILDE  
*The Importance of Being Earnest (1895)*

Religions die when they are proved to be true. Science is the record of dead religions.

OSCAR FINGAL O'FLAHERTIE WILLS WILDE  
*Phrases and Philosophies for the Use of the Young (1894)*

Man is a rational animal who always loses his temper when he is called upon to act in accordance with the dictates of reason.

OSCAR FINGAL O'FLAHERTIE WILLS WILDE

I am not young enough to know everything.

OSCAR FINGAL O'FLAHERTIE WILLS WILDE

In all matters of opinion, our adversaries are insane.

OSCAR FINGAL O'FLAHERTIE WILLS WILDE

Human slavery is wrong, insecure, and demoralizing. On mechanical slavery, on the slavery of the machine, the future of the world depends.

OSCAR FINGAL O'FLAHERTIE WILLS WILDE

Consistency is the last refuge of the unimaginative.

OSCAR FINGAL O'FLAHERTIE WILLS WILDE

To expect the unexpected shows a thoroughly modern intellect.

OSCAR FINGAL O'FLAHERTIE WILLS WILDE

Only the shallow know themselves.

OSCAR FINGAL O'FLAHERTIE WILLS WILDE

Hindsight is always twenty-twenty.

BILLY WILDER

There is nothing mysterious, as some have tried to maintain, about the applicability of mathematics. What we get by abstraction from something can be returned.

R. L. WILDER  
*Introduction to the Foundations of Mathematics*

As soon as we started programming, we found to our surprise that it wasn't as easy to get programs right as we had thought. Debugging had to be discovered. I can remember the exact instant when I realized that a large part of my life from then on was going to be spent in finding mistakes in my own programs.

MAURICE WILKES  
(1949)

PYTHAGORAS (*helping himself to porridge*): Hmm. I see the sum of the squares on AB and BC = the square on AC.

WIFE: Dear dear.

PYTHAGORAS: I'm not surprised, not surprised at all. I've been saying that would come for years.

WIFE: Yes dear.

PYTHAGORAS: Now they'll hav to *do* something about it. More tea please. That's another thing—the day is coming when they're going to have to face the fact that a strate line if infinitely protracted goes on for ever.

WIFE: Quite so.

PYTHAGORAS: Now take angle a, for xsample. (*His wife suddenly loses control and thro the porridge at him. Enter Euclid: another weed and the 2 bores go off together*).

GEOFFREY WILLANS & RONALD SEARLE  
*Down with Skool!* (1953)

But if maths is a langauge i hav only one coment. It is

$$\sum_0^{\infty} \frac{b^x}{x!} = \sum_0^{\infty} \frac{e^{-M} \cdot M^x \cdot e^{tx}}{x!} = e^{-M} \sum_0^{\infty} \frac{(Me^t)^x}{x!}$$

I think that setles the mater.

GEOFFREY WILLANS & RONALD SEARLE  
*How to be Topp*

Furious activity is no substitute for understanding.

H. H. WILLIAMS

Reality: what a concept!

ROBIN WILLIAMS

There are hazards in anything one does, but there are greater hazards in doing nothing.

SHIRLEY WILLIAMS  
*Observer, Sayings of the Week, 16-June-1974*

A vacuum is a hell of a lot better than some of the stuff that nature replaces it with.

TENESSEE WILLIAMS

The mistake you make is in trying to figure it out.

TENESSEE WILLIAMS

Since 'tis Nature's law to change, Constancy alone is strange.

JOHN WILMOT

Basic research is when you don't know what you are doing.

CHARLES G. WILSON  
*Nature 264 (1976): 100*

Success is simply a matter of luck. Ask any failure.

EARL WILSON

The cost of living is going up and the chance of living is going down.

FLIP WILSON

Sir, I have just received *prima facie* evidence that Sir Ron Dearing is out of touch with the world of higher education.

Interviewed this morning on the *Today* programme at 7.40am, in the long vacation, he optimistically uttered the words: "May I say this to the students that are listening...".

Yours faithfully,

J. L. WILSON

*Letter to 'the Times', 24-July-1997*

Only the madman is absolutely sure.

ROBERT ANTON WILSON

I use not only all the brains I have, but all I can borrow.

WOODROW WILSON

A simple rule of thumb: never trap for an error you don't know how to handle.

ED WILTS

Was sich überhaupt sagen lässt, lässt sich klar sagen; und wovon man nicht sprechen kann, darüber muss man schweigen.

*(Everything that can be said can be said clearly; and whereof one cannot speak, thereof one must be silent.)*

LUDWIG WITTEGENSTEIN

*Tractatus Logico-Philosophicus (1922), preface*

Philosophy is not a theory but an activity.

LUDWIG WITTEGENSTEIN

*Tractatus Logico-Philosophicus (1922), 4.112*

Die Grenzen meiner Sprache bedeuten die Grenzen meiner Welt.

*(The limits of my language means the limits of my world.)*

LUDWIG WITTEGENSTEIN

*Tractatus Logico-Philosophicus (1922)*

Die Welt ist alles, was der Fall ist. *(The world is everything that is the case.)*

LUDWIG WITTEGENSTEIN

*Tractatus Logico-Philosophicus (1922)*

Handeln von Netz, nicht von dem, was das Netz beschreibt.

*(Deal with the network, not with what the network represents).*

LUDWIG WITTEGENSTEIN

*Phil. Trans. Royal Society A 295:554*

If there were a verb meaning 'to believe falsely', it would not have any significant first person, present indicative.

LUDWIG WITTEGENSTEIN

*Philosophical Investigations, Part 2, sect. 10*

I can't do with any more education. I was full up years ago.

P. G. WODEHOUSE

*The Code of the Woosters (1938) ch. 1*

There is no limit to stupidity. Space itself is said to be bounded by its own curvature, but stupidity continues beyond infinity.

GENE WOLFE

I want to know the truth, however perverted that may sound.

STEPHEN WOLFRAM

When you believe in things that you don't understand, you will suffer.  
Superstition ain't the way.

STEVIE WONDER

The person who knows how will always have a job. But the person who knows why will be the boss.

CARL WOOD

Greetings my friend. We are all interested in the future, for that is where you and I are going to spend the rest of our lives. And remember my friend, future events such as these, will affect you in the future. You are interested in the unknown, the mysterious, the unexplainable. That is why you are here.

EDWARD D. WOOD JNR

*Plan 9 From Outer Space (film, 1956)*

Nothing has really happened until it has been recorded.

VIRGINIA WOOLF

Space travel is utter bilge.

RICHARD VAN DER REIT WOOLLEY, ASTRONOMER ROYAL

*(1956)*

Lost in a gloom of uninspired research.

WILLIAM WORDSWORTH

*The Excursion (1814), Book 4*

Never trust a computer you can't throw out a window.

STEVE WOZNAK

The inappropriate cannot be beautiful.

FRANK LLOYD WRIGHT

*The Future of Architecture (1953)*

Factorials were someone's attempt to make math *look* interesting.

STEVE WRIGHT

I heard that in relativity theory space and time are the same thing. Einstein discovered this when he kept showing up three miles late for meetings.

STEVE WRIGHT

When I turned two I was really anxious, because I'd doubled my age in a year. I thought, if this keeps up, by the time I'm six I'll be ninety.

STEVE WRIGHT

You can't have everything... where would you put it?

STEVE WRIGHT

I confess that in 1901, I said to my brother Orville that man would not fly for fifty years.

WILBUR WRIGHT

*(1908)*

God forceth not a man to believe that which he cannot understand.

JOHN WYCLIFFE

*14th Century*

What egotism, what stupid vanity, to suppose that a thing could not happen because you could not conceive it!

PHILIP WYLIE & EDWIN BALMER

*When Worlds Collide (1932)*

I refuse to accept a bad theory simply on the grounds that there is not a better.

JOHN WYNDHAM  
*The Midwich Cuckoos (1957)*

If a teacher does not teach the pupils to overtake him there can be no advance.

JOHN WYNDHAM  
*Chocky (1968)*

When people live their lives by their beliefs objective reality is almost irrelevant.

JOHN WYNDHAM  
*Chocky (1968)*

I'm sorry to say that the subject I most disliked was mathematics. I have thought about it. I think the reason was that mathematics leaves no room for argument. If you made a mistake, that was all there was to it.

MALCOLM X  
*Mascot*

FOX MULDER: I'm not going to give up. I can't give up. Not as long as the truth is out there.

THE X-FILES  
*The Erlenmeyer Flask*

And as for certain truth, no man has seen it, nor will there ever be a man who knows about the gods and about all the things I mention. For if he succeeds to the full in saying what is completely true, he himself is unaware of it; and Opinion is fixed by fate upon all things.

XENOPHANES OF COLOPHON

The primary purpose of the DATA statement is to give names to constants; instead of referring to pi as 3.141592653589793 at every appearance, the variable PI can be given that value with a DATA statement and used instead of the longer form of the constant. This also simplifies modifying the program, should the value of pi change.

FORTRAN MANUAL FOR XEROX COMPUTERS

If you try to understand fibre bundles by reading mathematics, if you are a physicist, you would probably not succeed, because modern mathematics is extremely difficult to read, and I believe there exist only two kinds of mathematics books; one which you cannot read beyond the first page and one which you cannot read beyond the first sentence.

C. N. YANG  
*Lectures on Frontiers in Physics*

karma police arrest this man he talks in maths he buzzesLikeAfridge hes like a detuned radio.

THOM YORKE  
*Karma Police (song 1997)*

THE  
NORMAL  
LAW OF ERROR  
STANDS OUT IN THE  
EXPERIENCE OF MANKIND  
AS ONE OF THE BROADEST  
GENERALIZATIONS OF NATURAL  
PHILOSOPHY ◊ IT SERVES AS THE  
GUIDING INSTRUMENT IN RESEARCHES  
IN THE PHYSICAL AND SOCIAL SCIENCES AND  
IN MEDICINE AGRICULTURE AND ENGINEERING ◊  
IT IS AN INDISPENSABLE TOOL FOR THE ANALYSIS AND THE  
INTERPRETATION OF THE BASIC DATA OBTAINED BY OBSERVATION AND EXPERIMENT

W. J. YOUDEN

If two men on the same job agree all the time, then one is useless. If they disagree all the time, then both are useless.

DARRYL ZANUCK  
*Observer, Sayings of the Week, 23-Oct-1949*

Technical skill is mastery of complexity while creativity is mastery of simplicity.

E. CHRISTOPHER ZEEMAN  
*Catastrophe Theory, Selected Papers 1972-1977*

Information is not knowledge. Knowledge is not wisdom. Wisdom is not truth. Truth is not beauty. Beauty is not love. Love is not music. Music is the *best!*

FRANK ZAPPA  
*Packard Goose (Joe's Garage)*

Without deviation, progress is not possible.

FRANK ZAPPA

In the fight between you and the world, back the world.

FRANK ZAPPA

Art is making something out of nothing and selling it.

FRANK ZAPPA

Hello. I know the divorce rate among unmarried Catholic Alaskan females!!

ZIPPY THE PINHEAD

Nature is what it is  
Regardless of what you would like.

ZOOGZ RIFT  
*'A Equals A' (song 1988)*

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