

## **THE STRANGE HISTORY OF THINKING.**

**MIKE DISNEY (2020)**

*“It ain’t what a man don’t know as makes him a fool; it’s what he do know as just ain’t so.”* Josh `Billings

### INTRODUCTION

Thinking and Deciding are our main survival mechanisms. As such they must have been inherited from our immediate animal ancestors. But Evolution by Natural Selection is an inherently slow process which advances by minute, almost imperceptible increments. So how come that humans have advanced in a mere few generations to the point that they can hurl telescopes into Space when their closest cousins are still struggling to crack nuts in the jungle? That is by far the biggest historical question of all. The answer to it can only have profound implications for our future, as well as for our past.

I here want to give a brief outline of Common `Sense Thinking (CST) as I conceive it to be, with something of its extraordinary history, and its implications – in the sense above.

### SOME HISTORY

Because Thinking is our crucial survival mechanism Nature could not afford to leave the passing on of it to parents. It had to be embedded as deep in our organs as liver-function. And if it is to succeed CST has to work quickly, and without conscious direction. That being so it might be difficult, if not impossible, for scholars to unearth it; in fact it proved beyond them . But that did not prevent them from digging up some pretty unhealthy simulacra, and then declaring victory.

For instance the Ancient Greeks (500BC) thought they had found the secret in Deduction – which they had unravelled in the course of studying Euclidean Geometry – of which they were immensely proud. Indeed, above the entrance to his Academia in Athens Plato had inscribed “*Let no man ignorant of Geometry enter here*” . Unfortunately Deduction only works in CLOSED systems where the basic principles (axioms) are defined in advance – *almost never the case in the real world*. So Deduction is fine for playing games like Sudoku, hopeless for real subjects like Science where one is hoping to *discover* the axioms, not to obey them.

Five hundred years later the Abrahamic religions came up with the weird notion that humans were the special pets of their ‘God’ who had imbued Man with magic intellectual powers denied to all other creatures. Indeed the Bible gave warrant to the following creepy idea: “*Then God said ‘let us make man in our image, after our likeness. And let them have dominion over the fish of the sea and the birds of the heaven and over the livestock and over all the earth and over every creeping thing that creeps on the Earth.’*” Since black/red/yellow... men (and certainly women) were obviously not sculpted ‘in the image of God’, they were included among the creatures who crepted, licencing ‘us’ to displace or even enslave them. Which was *very* convenient indeed. However such a dodgy philosophy clearly wouldn’t bear close examination. So Saint Augustine, official theologian to the early Christian Church (~ 400 AD) pronounced “*There is another form of temptation, even more fraught with danger. This is the disease of curiosity.....It is this which drives us to try and discover the secrets of nature, those secrets which are beyond our understanding, which can avail us nothing and which man should not wish to learn.*” So powerful was this prohibition that Christians stopped thinking altogether until the Reformation (1520) when, thanks initially to Martin Luther in Germany, the overwhelming reach of the Roman Church and its Inquisition was curbed. The Scientific Revolution immediately began with figures such as Copernicus (1543), Digges (1570), Brahé (1575),

Galileo (1609), Kepler (1610), Hooke (1657) and Newton (1686) . They harked back to the Ancient Greeks , believing that Physics was a branch of Mathematics. But some came to doubt that Deduction would be enough, notably Francis Bacon (1604) and Christiaan Huyghens (1690) who thought that scientific truths could only be reached by translating particular instances into universal generalizations<sup>1</sup>, a practice called ‘Induction’. But clearly that involves a gamble, which David Hume (1739) argued could never be entirely justified by logic. And anyway people recoiled from gambling when it was Certainty they were after. Indeed a childish craving for Certainty, where it is not available, has been the single greatest curse which has dogged rational thinking throughout history, even today. There have always been, and there will always be, ‘priests’ willing to offer such false certainties to naifs – in return for power and influence.

There were two important developments in the 19<sup>th</sup> century. First, with the invention of ‘Non-Euclidean Geometry’ the whole analogy between Science and Mathematics was broken. Science was about the real universe, while Mathematics was just a game with arbitrary man-made rules. From time to time there might be useful parallels, but Mathematics henceforth could only be a tool, not a role-model. A second awakening was the recognition that maybe Induction (gambling) *could* work– provided it was guided by the notion of *Probability*, which could calculate which gambles made sense, and which did not. And so Statistics was born with ambitions to rule both Science and Philosophy, and with its birth there grew a vague expectation that there now must be a true “Scientific Method”. [Note 1]

While everybody acknowledged that this Method was a good idea, nobody seemed to know what it was. As the witty zoologist Peter Medawar put it (1972): “*Ask a scientist what he considers the scientific method to be, and he will adopt an expression that is at once solemn and shifty-eyed: solemn because*

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<sup>1</sup> E.g. asserting that all swans are white having seen only 900 such creatures, which all happened to be white.

*he feels he ought to declare an opinion; shifty eyed because he is wondering how he is going to conceal that he has no opinion to declare.”*

Alas, Statistics soon broke down into warring sects which stridently denounced one another so that bewildered folks like me, who had to teach the subject at university, began to question the lot of it. As far as I could see there were two, mainly historical, problems involved: a craving for the old Certainties of Classical Greece (Deduction) and a refusal to acknowledge that Darwin’s discovery of Evolution (1859) had made the whole idea of Abrahamic religion redundant. But many scholars found it impossible to discard cultures they had imbibed at school and afterwards. Instead of arguing over how humans think they should now have asked “How could animals think?” because that is what we all are.

I entered this bloody fray back in 1997 when my own research area (Hidden galaxies) was descending into chaos. There was plenty of strong evidence bearing on my pet theory – but it conflicted! Conferences on the subject broke up in controversy, even acrimony. It was clearly time to consult that legendary Oracle “The Scientific Method” which everybody assumed existed, but where?

It took 20 years of stubborn digging, and some luck, to unearth a treasure that had never seen the light of day before. The Scientific Method turned out to be very largely Common Sense Thinking (CST) – which is like a boy scout’s penknife for the thinking mind. It has seven key implements:

Bayes’ Rule for gamblers (known since 1763)

Ockham’s Razor (Classical ‘*lex parsimoniae*’)

The Detective’s Equation (New; the ‘ $E=mc^2$ ’ of thinking)

The Principle of Limited Variety (J M Keynes, 1920)

The Principle of Animal Wisdom (PAW) (New)

The Inference Table (New)

Categorical Inference (New)

This is no place to go into all the details but, in case you think I have gone mad in claiming so much, I must explain one thing: *You do not have to be a great mind to make a great discovery.* The perfect illustration of that is Charles Darwin who stumbled upon the greatest scientific discovery of all: Evolution by Natural Selection. Darwin was basically a lout. He spent his entire boyhood and much of his younger manhood mindlessly slaughtering wild animals and birds. He failed at two universities in two different subjects (medicine and the priesthood) and the only constructive pastime he appears to have had was collecting beetles. His exasperated father thundered “You wouldn’t even make a decent rat-catcher” and packed him off to sea for 5 years in the humble situation of “gentleman’s companion” aboard *HMS Beagle*, a RN survey vessel commissioned to chart the Southern coasts of South America.

It was the custom of the day for RN Captains to remain in splendid isolation from their crews, a practice which not infrequently drove them mad . So Captain Robert Fitzroy hired Darwin to keep him company and keep him sane in the aft cabin for 5 interminable years at sea.

How lucky Darwin was; Fitzroy was a cultured, humane man with a good library. That induced Darwin, on the long sea passages, to read seriously for the first time. And Fitzroy allowed him to go ashore and indulge his passion for slaughtering, and sometimes collecting, the local fauna. And, as we all know, it was on one such foray on the Galapagos Islands that Darwin noticed that the finches on separate islands had very different beaks. Twenty years later, spurred into action by the realization that Wallace had independently come to identical conclusions, Darwin published “*The Origin of Species*”(1859)

So I don’t feel entirely foolish to claim that I have discovered how Common Sense Thinking works. My obsession with galaxies simply drove me to ask questions which no one had bothered with before, such as ‘How do animals think?’ Which of course they do. If you don’t believe that then for goodness sake

read “*Are we smart enough to know how smart animals are?*” by Franz de Waal, (Granta Books, 2016) a world expert on primate behaviour. There you will learn that primates (and others) can plan ahead, work in teams, show empathy, imagine solutions to problems in their heads, demonstrate inference, live not just in the present, use many tools in an intentional way, act generously and behave unselfishly.]

In any case all the evidence is against genius in science . If there was such a thing then where are our geni today when more than half of all the scientists who have ever lived are active now? I’ve never met one, and neither have the hundreds of colleagues I have asked about it. Claims for scientific genius usually come from those unqualified to judge.

#### SOME IMPLICATIONS OF COMMON-SENSE THINKING.

(A) The spectacular ascent of mankind is entirely owed to the invention of writing (3 to 7 millennia ago). The Detective’s Equation reveals that the decisiveness of evidence rises virally with the number of clues involved. Writing enabled us to collect, store, assess and combine many more clues than we could hitherto. Thus the doubling of evidence can easily increase one’s power to decide a complex issue wisely by 5000 % or more! Literate humans suddenly became a million times more capable than their illiterate forbears. Our spectacular ascent is NOT due to greatly superior brains, but to writing. As Einstein put it : “My pencil and I are smarter than I am.”

(B) Since we all need to think to survive, Nature couldn’t afford to hand out significantly unequal capacities to do so to different individuals. Brilliance, IQ, the capacity to pass exams, call it what you will – is of little use when it comes to serious thinking. That requires other qualities

including curiosity, breadth, relevant knowledge, judgement, imagination, flexibility, integrity – and above all doggedness. Don't be impressed by, or defer to, superficially clever people.

(C) Serious thinking is almost always based on Induction , which is to some extent guesswork – and indeed a gamble. We cannot live without constantly gambling, and so we all need to become familiar with betting Odds, and the means to compound them (The Detective's Equation). They are essential to sound Thinking.

(D) Beware of very strong arguments or immovable evidence, they could well be dependent on Systematic Errors, the Elephants in everybody's room. Far better to rely on a network of weaker clues which generally cohere with one another. This is the Principle of Animal Wisdom (PAW).

(E) Successful Induction often requires the implicit assumption of certain *Principles of Uniformity* such as 'Tomorrow will be much like today' or 'Atoms over there will be the same as atoms over here'. While such principles seem to apply across the natural sciences there is little reason to assume that like principles will apply more generally. So beware of "scientific thinking" misapplied – especially in the humanities.

(F) Because we desperately need to understand a subject does not mean we can – *or ever will!* God, The Mind, Consciousness.....if the tools of CST cannot get a grip on a subject, then we are helpless to progress. For instance the Principle of Limited Variety reveals that neither Economics nor Psychology are sciences – and are mostly irreproducible hocus-pocus.

(G) Much of conventional Education is a waste of time and money – because it doesn't comprehend Common Sense. While Education is a good idea in principle, in practice much of it has been, and remains, designed more to benefit the teachers than their students – let's be honest about it. Many young lives, with their future savings, are being wasted in class-rooms. People should never let their scholastic experiences, however bruising, deter them from aiming high or becoming wise. Conversely the UK is full of Baducated people whose confidence in their own abilities is misplaced because what they been taught is largely without foundation. Qualifications are no guarantee of Common Sense. Selling degrees and selling Indulgences can be equally fraudulent. [ See Ch. 20 on 'Baducation' in my *History of the Brits*, Amazon Books, 2020].

(H) THE fundamental truth we all need to understand is that *almost all serious arguments about the real world can only reach provisional conclusions*. The best any of us can hope for are good betting odds deriving from a wide variety of evidence. Once we recognize that single truth we might be less hostile to folk who don't believe the same things as we do. Provisionality is the only soil in which any progressive civilization can germinate or flourish. A craving for Certainty is childish, futile and sometimes destructive.

## SUMMARY

Nothing is more important to humans than sound thinking. Evolution has thus endowed us with an exquisite mechanism for doing so – Common Sense. Unfortunately it is buried so deep within us as to defy easy analysis. Amongst others, Greek philosophers, Abrahamic priests, and latterly modern philosophers, and statisticians, have all got it wildly wrong. Thus for the past two millennia

humankind has been thinking much less well than we might have done. But that misfortune was overbalanced by the invention of writing, a transformative tool which enables us to store, recall, and combine far more evidence together, and so accomplish complex tasks utterly beyond the capabilities of our cousin apes, or indeed of illiterate humans. This is our secret, not superior IQ.

Because they didn't understand Common Sense Thinking, especially as it should apply to a modern world of culture and technology, the British people as an example, have suffered some appalling and unnecessary misfortunes, most often inflicted upon their poorer classes. One thinks in particular of: Free Trade, Malthusian demography, half Baked Economics in general, Friedmanism in particular; Victorian mal-investment and malnutrition; Psychology – their misgrading as hereditary fools on the basis of forged IQ test results (Burt); an innumerate ruling elite; appalling management; a thieving financial sector; mass immigration never condoned by the democratic process; and wholly unjustified snobbery based on Baducation. As a result we have had a last century very much less happy than it might have been. But those who can not or will not think straight must pay.

The clumsy obfuscation of Thinking by scholars and priests has all too often led to the handing over of that vital task to self-appointed, self-seeking and self-deluded 'experts' such as Economists and Statisticians. We need to take back control of Thinking for ourselves, especially now that the Internet can supply the information needed to do so. When we do, truly spectacular dividends, both for individuals, and for enlightened societies, can be expected.

