What is Truth?

With so much talk in the media about ‘alternative facts’ and ‘fake news’ I thought it might be helpful to take a look at what we actually mean by ‘truth’. Oscar Wilde famously observed that “the truth is rarely pure and never simple”, indeed, truth is often perplexing, inconvenient and unpalatable — an idea beautifully captured in this *New Yorker* cartoon, which is by the late, great Charles Barsotti. And whilst there are many forms of truth, absolute, religious, moral, etc. these fall into one of two basic categories: they are either objective or subjective.

1 Objective Truth

We consider a statement to be ‘true’ when it conforms to our understanding of reality, in other words it matches up with the way we see the world, and facts or statements can be verified beyond reasonable doubt. This is ‘observed truth’, and what we most commonly mean when we say something is ‘true’. ¹ ‘Scientific’ and ‘mathematical’ truth are special kinds of objective truth, where every care is taken to eliminate bias on the part of the observer.

Scientific Truth

Science does not equal truth, rather it builds upon certain foundational principles that we assume to be true — at least for the world or universe as we know it. These principles include uniformity across time and space. Scientists can only say that some aspect of the natural world appears to be ‘true’ if each time a well-conceived experiment is conducted (which anyone with the knowledge and means can repeat), the same result is obtained, and the results are published and peer reviewed. This means that, in attempting to uncover truths about the natural world, scientists must aspire to be objective and eliminate any personal bias, including possible cognitive bias, cultural bias and sampling bias. Thus empirical evidence is the basis of scientific truth — what deGrass Tyson helpfully calls ‘emergent truth’. I like the expression ‘truth for now.’

“Science is the search for truth, that is the effort to understand the world: it involves the rejection of bias, of dogma, of revelation, but not the rejection of morality.” — Linus Pauling

In science there are theories and hypotheses, and these have very specific meanings: a theory is a testable working model, and a hypothesis, effectively an educated guess which appears to be supported by specific facts yet is still capable of falsification — although as Niels Bohr once noted: “the opposite of a profound truth may well be another profound truth.”

A theory isn’t true just because we prove it (we can’t), and it isn’t necessarily false just because we can’t. Indeed, as Popper famously pointed out, scientific theories can only be falsified. That said, some theories have stood the test of time and the artefacts, processes or events that they help to explain can, to all intent and purposes, be considered ‘facts’ (i.e. ‘true’). Darwin’s Theory of Evolution by Natural Selection is perhaps the best-known example: it has been effectively unchallenged for over 150 years, with advances in radio-isotope dating, genetics and other specialist fields endorsing or enabling refinement of the original idea. It is perverse to think otherwise.

¹ This is known as the Correspondence Theory of Truth. This theory states that the truth (or falsity) of a statement is determined only by how it relates to the world and whether it accurately describes that world. In other words it suggests a relationship between thoughts or statements on the one hand and things or facts on the other. This idea can be traced back to classical Greek philosophers such as Socrates, Plato and Aristotle.

² This last possibility is reduced or eliminated by random sampling or double-blind trials. That said, there has lately been something of a reproducibility crisis in science: an article in *Nature* (in May 2016) notes that “more than 70% of researchers have tried and failed to reproduce another scientist’s experiments, and more than half have failed to reproduce their own experiments. The data (from an on-line survey of 1,576 scientists) also revealed that ‘although 52% of those surveyed agree that there is a significant “crisis” of reproducibility, less than 31% think that failure to reproduce published results means that the result is probably wrong, and most say that they still trust the published literature.’
Mathematical Truth
I am not competent to comment on the nature of mathematical truth. However, rather than ignore the topic completely let me quote from an academic paper on the subject by Carl Hempel — and we can see that things are not straight-forward! Hempel writes: “the truths of mathematics, in contradistinction to the hypotheses of empirical science, require neither factual evidence nor any other justification because they are ‘self-evident.’” But he then goes on to point out various difficulties with this proposition. First that “many mathematical theorems are so hard to establish that even to the specialist in the particular field they appear as anything but self-evident. Secondly, it is well known that some of the most interesting results — especially in such fields as abstract set theory and topology — run counter to deeply ingrained intuitions and the customary kind of feeling of self-evidence. Thirdly, the existence of (certain) mathematical conjectures (which he names), which are quite elementary in content and yet undecided up to this day, certainly shows that not all mathematical truths can be self-evident. And finally, even if self-evidence were attributed only to the basic postulates of mathematics, from which all other mathematical propositions can be deduced, it would be pertinent to remark that judgments as to what may be considered as self-evident are subjective; they may vary from person to person and certainly cannot constitute an adequate basis for decisions as to the objective validity of mathematical propositions.”

Theoretical Limits to Knowledge

“Science is what we have learned about how to keep from fooling ourselves.”

Richard Feynman

And here’s another observation on objective truth: it is remarkable that scientists and mathematicians are able to use sophisticated and complex theories to get very close to unknowable truths — even if only a tiny minority of the population can comprehend the thinking that goes into this, or contemplate their implications. Theoretical limits on what we can and cannot know to be ‘true’ have recently been explored by Marcus de Sauvage in his book: ‘What We Cannot Know’ (2015; 4th Estate). Of course, we do need always to keep an open mind, not least because “The sacred truth of science is that there are no sacred truths.” (Carl Sagan)

At this point we should recognise two other forms of objective truth, absolute truth and universal truth — fixed, invariable and unalterable facts — but to explain them satisfactorily would take us into the realm of philosophy, and this is (another) discipline that I have neither the knowledge nor the credentials to present coherently. Suffice it to say (and philosophers concur) that one cannot argue against absolute truth unless an absolute truth is the basis of your argument...

2 Subjective Truth

“Truth is stranger than fiction; fiction has to make sense.”

Leo Rosten

Subjective truth is a rather different animal from objective truth: it is private and personal and includes belief — constructs that are held to be true but which may not be justified or supported by factual evidence. Within this category we have: ‘moral truth’, ‘sacred truth’, and what I shall called ‘emotional truth’. Moral and emotional truth may or may not flow from religious truth. And we can include here statements about things like paintings or drawings that are said to be ‘true to life’ or a ‘true likeness’; or about socially-accepted principles, as in the American Declaration of Independence (“We hold these truths to be self-evident…”); or the Buddha’s ‘Noble Truths’ (effectively observations on life / suffering).

Subjective truth is based on or influenced by personal feelings, tastes or opinions; and these in turn are shaped by what we read and see, with whom we associate, and also how and what we were taught as

3 http://www.ditext.com/hempel/math.html. And here’s another mind-bending comment on mathematical truth: it is by Douglas R. Hofstadter: “People enjoy inventing slogans which violate basic arithmetic but which illustrate ‘deeper’ truths, such as ‘1 and 1 make 1’ (for lovers), or ‘1 plus 1 plus 1 equals 1’ (the Trinity). You can easily pick holes in those slogans, showing why, for instance, the plus sign is inappropriate in both cases. But such cases proliferate. Two raindrops running down a window-pane merge; does one plus one make one? A cloud breaks up into two clouds - more evidence of the same? It is not at all easy to draw a sharp line between cases where what is happening could be called ‘addition’, and where some other word is wanted. If you think about the question, you will probably come up with some criterion involving separation of the objects in space, and making sure each one is clearly distinguishable from all the others. But then how could one count ideas?”

4 Here are examples: String Theory — a “theoretical framework in which the point-like particles of particle physics are replaced by one-dimensional objects called strings. The theory describes how these strings propagate through space and interact with each other.” Twistor Theory — proposed by Roger Penrose in 1967 as a possible path to a theory of quantum gravity. Godel’s two incompleteness theorems — “theorems of mathematical logic that demonstrate the inherent limitations of every formal axiomatic system containing basic arithmetic”; and Bayes’ Theorem — which describes “how the conditional probability of each of a set of possible causes for a given observed outcome can be computed from knowledge of the probability of each cause and the conditional probability of the outcome of each cause.” Don’t ask me to explain.
children. This comforting endorsement of our views and beliefs (so-called ‘confirmation bias’) may also be reinforced by what our search engine finds for us when we go on line. Google knows so much about us and helpfully selects things that we are likely to want to see. The result of this pre-selection is that we live in our own cultural or ideological ‘filter bubble’, effectively isolated from dissonant ideas and alternative points of view. This is a recipe for ‘us’ and ‘them’ thinking, likely to heighten suspicion and misunderstanding, which if unchecked may lead to social division and conflict. But this is straying into dangerous territory…

Religious Truth
All religions hold two basic things as ‘true’: first, that there is a ‘god’ (or ‘gods’) with mystical powers which created the Universe and humankind; and second, that humanity needs to be reconciled with ‘him’ or ‘them’. This reconciliation with deity is usually achieved through rules and rituals which if followed mean that the person will ‘do right by god’ and (with luck) gain ‘his’ favour, enter Heaven and have eternal life. People’s belief in religious (or ‘sacred’ or ‘received’) truths can be extremely powerful, especially when the individual has been introduced to them as a small child (when they can’t distinguish what is true from what is a story or myth). It has been proven beyond doubt that the Turin Shroud is a mediaeval fake: it may have originated in the Holy Land, but (according to science) it does not date from the time that Jesus is said to have lived. That does not stop pious people believing that it does, and moreover that it has miraculous powers, which may even cure them — a spiritual equivalent of the ‘placebo effect’ in medicine. I’ve called this ‘emotional truth’ for want of a better term.

Moral Truth

“The human brain is a complex organ with the wonderful power of enabling man to find reasons for continuing to believe whatever it is that he wants to believe.”

Voltaire

When we talk about moral truth we mean that which we know instinctively is ‘right’, or more usually, ‘wrong’ — it is wrong to bear false witness, steal or kill people. This raises the question of whether we create moral truth or discover it. For people of faith, moral truth is expounded in their holy books or laid down by their religion and therefore absolute (i.e. ‘God’s Word’). Atheists have a different take on this: many believe that our morality springs from our evolution as social beings — our conscience tells us what is acceptable and what is not [see box for an alternative set of Commandments].

Social scientists argue that much of what is considered ‘right’ or ‘wrong’, ‘good’ or ‘evil’, ‘moral’ or ‘immoral’, is socially determined, with some making a case for ‘moral relativism’, where no one moral or ethical system is considered any better or worse than any other. But moral relativism — ‘cultural relativism’ where this applies to different cultures — is a rather flaky concept. Indeed, social attitudes and religious teachings can and do change over time: think of Medieval attitudes to (not) treating people who were seriously ill (their fate was in God’s hands; it was wrong to interfere); or attitudes to burning women accused of witchcraft or trading slaves, and more recently, people’s views on homosexuality and same sex marriage (at least in Britain)...

Philosophical Truth

“I would like to understand things better, but I don’t want to understand them perfectly.”

Douglas R. Hofstadter

Everyone knows that ‘truth’ is an inherently slippery concept. Indeed, it has preoccupied philosophers for millennia, and many issues are still unresolved. For Nietzsche the truth was “but a lie agreed upon”; whereas Schopenhauer wrote that: “truth, which is inexpressible except by means of myth and allegory,

5 See https://en.wikipedia.org/wiki/Alternatives_to_the_Ten_Commandments#Bertrand_Russell for an explanation of the origin of these commandments by Russell, Hitchcs, Grayling et al.

6 Ambrose Bierce once commented that “discovery of truth is the sole purpose of philosophy, which is the most ancient occupation of the human mind and has a fair prospect of existing with increasing activity to the end of time.”
is like water, which can be carried about only in vessels; a philosopher who insists on obtaining it pure is like a man who breaks the jug in order to get the water by itself.” The quest for the truth is well described in another memorable cartoon by Charles Barsotti (below).

Basic logic tells us that any statement is either true or not true, but it cannot be properly labelled as true, until all parts of the statement have been proven true. In ‘Language, Truth & Logic’, AJ Ayer defined truth as “the criterion by which empirical propositions are validated”, and that to say that a proposition is true is simply to assert it, and to say that a proposition is false is simply to assert the contrary. Thus, truth and falsehood are no more than signs of assertion or denial of empirically verifiable propositions, and if an ethical or aesthetic judgment cannot be subjected to empirical testing, either practically or theoretically, then it is meaningless.

Some philosophers (like Richard Rorty) argue that the pursuit of truth by scientists and historians is a hopeless surrogate for humanity’s earlier worship of God. “We would be stronger, freer, better human beings,” Rorty has written, "if we could bring ourselves to dispense with all such surrogates." Others, most notably the late Bernard Williams, have argued that truth and truthfulness are to be valued in any human society where sincerity and accuracy are prized.7

In *Truth and Truthfulness*, Williams argues that there is a “tension between the pursuit of truthfulness and the doubt that there is (really) any truth to be found”. He calls this ‘The Problem’, and says that The Problem has been compounded (if not created) by the ‘deniers’ of truth, who sceptically argue that the truth is unavailable to us, or pragmatically argue that we can do all we need to do without a full-blooded notion of “Truth with a capital T.” Williams, by contrast, believes that we cannot do without Truth: his argument is simple: we can’t get along without trust (human flourishing requires us to cooperate); but trust requires truthfulness; and truthfulness presupposes that there are (at least some) truths. In short, truth is essential if we are to have successful human interaction.8

4 Inquiry vs Ideology

Much of public debate in the West is informed by two kinds of viewpoint: those derived from facts and data (objective truth) and those derived from values (subjective truth). This tension is explored by Northrop Frye in ‘The Critical Path’,9 where he talks about the ‘myth of freedom’ and the ‘myth of concern’ — the former embodies the ‘liberal’ attitudes of objectivity and respect for the individual, whereas the latter is designed to “hold society together.” Frye argues that to maintain a free and mature society we have to become aware of the tension between these two views, and the necessity of preserving them both.

Frye’s argument is nicely summarised in a recent article by Brian Russell Graham: “truth’ and ‘reality’ mean different things to these divergent ways of approaching and understanding the world. For the disciplines, truth and reality are provided by nature, and our understanding of truth and reality depends on reasoning and evidence. For concern, ‘truth and reality are not directly connected with reasoning or evidence,’ but rather ‘socially established and connected with human desire.’”10

In Frye’s view ‘inquiry’ must learn to live with ‘concern’; he rejects the notion that either should ever become hegemonic and notes that “in weak or insecure minds such a collision produces immediate panic, followed by elaborate defensive reactions” (which we see in modern theocracies). The counter viewpoint argues that “as society progresses, it undergoes a process of demythologization, which can lead to the

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8 For Williams, lies are pernicious because, not only does the liar betray the trust of the victim, he or she also exerts power over the victim, manipulating his or her beliefs and thus (potentially) his or her choices. Here (to paraphrase Clancy Martin) Williams appeals to the (Kantian) notion that we should treat others not merely as a means but also as ends, but he adds a condition of ‘reciprocity’, maintaining that there are some persons who do not deserve the truth. Deception may on occasion be justified, even necessary, to enable humans to flourish. Most would agree that deception can be justified, for example when comforting a dying child.
10 http://quillette.com/2018/03/28/inquiry-ideology-battle-ideas/ Graham notes that when Frye speaks of concern, “he emphasizes its mythical nature, and tries to explain how, in the Western world, distinct ‘myths of concern’ jostle with one another. We have inherited the ‘Judeo-Christian myth as set out in the Bible,’ but other myths are also of great consequence, such as the ‘myth of democracy and the revolutionary working-class myth.’”
A conclusion that all we need is science. Frye dismisses this outlook. “The growth of knowledge,” he argues, “cannot in itself provide us with the social vision which will suggest what we should do with our knowledge.” [emphasis added by Graham]

The intellectual who denies the value of concern and the true believer who denies facts are “something of a pair – both hope to simplify public debates using an a priori emphasis on one viewpoint. A public intellectual like Steven Pinker, who takes a dim view of myths of concern, is in this sense the bedfellow of creationists who deny science. And so we are stuck with our squabbling, feuding society, in which concern and inquiry must inevitably clash over and over again.” (Graham, ibid)

“A society with an open mythology accepts, ‘as part of a permanent tension between concern and freedom, a plurality of myths of concern, in which the state assumes the responsibility or keeping the peace among them,’ and imposing ‘a kind of rules of the game order within which dissent and opposition can operate.’ An open mythology is important because, realistically, all that humanity will ever be able to agree on is the assumption that “life is better than death, freedom better than slavery, happiness better than misery, health better than sickness.” So in Frye’s view, “a society with an open myth can accommodate itself to such an assumption.”

4 A Conclusion (of Sorts…)

So, in conclusion, whilst everything is either ‘true’ or ‘not true’, in reality we cannot prove that everything that is true is true, nor everything that is false is false, but trying to work out which is which is a fascinating and absorbing challenge for any thinking person. Albert Einstein advised that if you are out to describe the truth “leave elegance to the tailor;” and André Gide said “the colour of truth is grey” and advised people to “believe those who are seeking the truth” but “doubt those who find it.” So truth is a difficult, perplexing and elusive concept, but the quest for truth can and does bring real meaning into people’s lives and influences their behaviour.

Mike Flood recently stood down from running a grassroots development charity, Powerful Information, and is today involved with a new initiative, Critical Information, which aims to raise awareness of the threat posed by fake news and misinformation. He is Chair of Milton Keynes Humanists.

13th April 2018

End Note

This paper is ‘Work in Progress’: expect new versions to appear in the future — this is version 4 [v1 is dated 14 Feb 2017]. I make no claim to be an expert on the truth (or the Philosophy of Truth). One of my objectives in life is simply to do my best to understand, interpret and explain seemingly complex issues so that they can be made available to a broader audience. Despite an academic background in science and sociology and many years’ practical experience in adult education and environment and development, I struggle to comprehend or grasp many important areas of human knowledge. So if I am struggling, how do others cope? I should also explain that I like to use quotes in my writing because for me a well-chosen quote is like a poem or cartoon: it can capture and communicate thoughts and ideas in a concise and highly effective way. Quotes also enable us to recognise the contribution that others have made to advances in our understanding of the world and this, for me, is the nearest thing to immortality.

If anyone finds flaws in any aspect of my work, or can suggest changes that will make the material more interesting or comprehensible, I’d like to hear from them. Thank you.

11 Frye’s characterization of the closed mythology should give us all pause for thought. Its salient feature is not an allegiance to myths themselves but to how they are propagated. When a myth of concern becomes a closed myth, its beliefs become compulsory. The danger is that temporal power adopts a particular myth of concern, so that it must be absorbed, and other concerns become contraband: ‘The tendency of a closed myth is to move from […] broad principles to more specific ones, prescribing more and more of a citizen’s beliefs, and obliterating the varieties of social attitude.’ In the process, opposition and pluralism are crushed: ‘A society with a closed myth makes it compulsory for all its citizens to say that they support it, or at least will not overtly oppose it.” (Graham, ibid)

12 www.powerfulinformation.org; http://criticalinformation.org.uk