

Chronicle of a Cassandra The Dark Matters of Science

Science and Technology Exposed

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Dedicated to my wife who first suggested that I write this book

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Chronicle of a Cassandra

A HISTORY OF SCIENCE AND TECHNOLOGY EVERYTHING IS A REMIX

Introduction and Notes

"It is a strange thought, but I believe a correct one, that twenty or thirty pages of ideas and information would be capable of turning the present-day world upside down, or even destroying it. I have often tried to conceive of what those pages might contain, but of course I am a prisoner of the present-day world, just as all of you are. We cannot think outside the particular patterns that our brains are conditioned to, or, to be more accurate, we can only think a very little way outside, and then only if we are very original."

Fred Hoyle, *Of Men and Galaxies*

The subject of this book is mainly concerned with the history of science and technology, something that has fascinated me most of my reading life. A subject rarely written about in a critical context because no one seems to know or care about its origins. They think they already know because of what they were told during their education and much of this is confirmed by the mainstream media. But some of the information contained here will be new to those who have been taught an educationally standard, yet completely different version. The true history is not altogether hidden but scattered and sometimes hard to find, deliberately so, but it is there. The reader will also find here a mostly concealed and unacknowledged golden age of electronic technology that ended in the 1930's roughly coinciding with the academic consensus acceptance of the electron theory, new particle physics and the theories of Albert Einstein that make-up New Physics.

After the 1930's all genuine electronic research and discovery ended. I realise that this seems to be a contradiction but what we call electronics was thriving, well before the discovery of the electron. In fact the electron could not have been discovered without a deep understanding of electronics. Any 'new' technology that has appeared since this time can be traced back to a much earlier date pre 1930's. Everything we have today is a miniaturised remix of old, pre-existing technology. This is what I've researched, collected and referenced, a true-as-possible history of science and technology, a help maybe for those who want to give themselves a revised and more enlightened education in this subject. I hope that someone will find more of this stuff and let me know. But I leave it entirely to the reader what they do with this information and only ask that they do some thinking of their own without the bias of education and mainstream media.

Readers, no doubt, must have already come across some of the individual subjects discussed here and found them mildly interesting, it's only when they are presented together as a whole narrative that a pattern emerges. There has been an orchestrated plan to suppress certain knowledge, science and technology, of this I now have no doubt. Contrary to what we are told there is a conflict between science and technology as science struggles to fit any genuine new technology into its own narrow parameters. It is evident that this force is active in the cold fusion fiasco, but it continues unceasingly with the suppression of patents.

The bottom line is education and those who decide how much education we get and its contents - yes, someone really does do this. These are the same people who have revised and corrupted history and led us down a road to nowhere. There is a guiding hand behind all science, technological development and education that is not the work of democratic government. The control is provided by banks and multinational companies, in fact an oligarchy who ensure that dirty power sources, polluting transport and yesterdays technology are retained and supported as long as they make them money. This also accounts for the trickle of old technology, presented as new, that I have researched within these pages.

Wikipedia is used extensively throughout these pages, not because it's the best, (my opinion is that it is no better nor any worse than any other mainstream reference work), but because it is well known and readily available to all.

I have deliberately used copious references in order that it can be seen that what is contained within this book is not just my own opinion.

I have added references from other sources where Wiki is obviously, in my opinion, wrong, usually because it is quoting the official version rather than the true history, and hopefully I have found a more historically correct version.

Chapter 1

Moon In Their Eyes

Lunar Science and Technology

The word “lunacy” is derived from Luna the Roman goddess of the Moon and reflects the long association of mental disorder with the Moon. The word Lunar means relating to the Moon - read on for Lunar Lunacy and Moon Madness.

Science has done its utmost to prevent whatever science has done. Charles Hoy Fort

Moon Anomalies

The Moon orbits the Earth that orbits the Sun that orbits the Galaxy and so there is a spiralling, looping motion to the Moon's orbit through space. No orbit returns to its origin because it has moved and so every orbit is a spiral. Everything in the universe, from a grain of sand to a star to a galaxy is in motion in a moving orbit, spiralling about something else that is also spiralling - nothing is at rest. But as nature is so gentle, we fail to notice or acknowledge these undeniably titanic forces all around us.

Ever since the first probes sent back lunar information people throughout the world have been asking questions about what they see as Moon anomalies, and scientists have never failed to call them conspiracy theorists. The first book about the subject, “We Never Went to the Moon: America’s Thirty Billion Dollar Swindle”, was written in 1974, only two years after the last Apollo mission, the first of dozens more. But don’t worry, I’m sure NASA did go to the Moon, but I don’t think things were done in the manner we are led to believe. There are no conspiracy theories in this book apart from the ones carefully contrived and constructed by NASA and science itself and all of these are of course very well referenced. This is what this chapter is all about, the mysteries conspiracies and anomalies that academic science generates.

I found some of the following on the Internet long ago and I have woven it into my own more recent data. ‘Lunar Anomalies’ is compiled by Ronald Regehr who was at the time said to be, surprisingly, a “researcher and scientist in the defence industry and NASA”. All of his items are numbered and in quotes. It’s quite old, and the original link is gone, but it suits our purpose for what follows in that all modern interpretations of the same data have become highly technical and

intellectually obfuscated. I've woven-in a large amount of of my own data and numerous links and references:

Ronald Regehr says, "After hundreds of years of detailed observation and study, our closest companion in the vast universe, Earth's moon, remains an enigma. Six moon landings and hundreds of experiments have resulted in more questions being asked than answered. Among them:

1. "The Moon's Age: "The moon is far older than previously expected. Maybe even older than the Earth or the Sun. The oldest age for the Earth is estimated to be 4.6 billion years old; moon rocks were dated at 5.3 billion years old, and the dust upon which they were resting was at least another billion years older."

Harvard's respected astronomy journal 'Sky and Telescope' reported that at the Lunar Conference of 1973, it was revealed that one moon rock was dated at 5.3 billion years old which would make it almost a billion years older than our planet. This puzzle was compounded by the fact that lunar dust in which the rocks were found proved to be a billion years older than the rocks themselves. Chemical analysis showed that the Moon rocks were of a completely different composition from the soil around them. Since dusty soil is usually produced by the weathering and breakup of surrounding rocks, the lunar rocks must have come from some place other than where they were found. But where?" 2 Here on Earth it would be strange indeed if the soil of a valley could not be shown to originate in the surrounding mountains.

There are now those who rationalise this in accordance with mainstream theories, but they are only theories presented as if they were fact. Science likes linear dates, and a moon older than its planet is taboo because moon capture is not something easily explained by linear consensus theory." 1 Science likes straight lines which don't exist in space.

Note: A slight digression that will be explained later: It may be of interest to the reader that it was Sky and Telescope who censored the first NASA pictures of Mars, from panic, rationalising 'that they would give credence to the theories of Immanuel Velikovsky who had made several predictions as to what would be found on the Moon. As we progress through the pages of this chapter we will also be looking at the surprising aftermath - the effects of Velikovsky's theories on astronomy and science in general. How Velikovsky's ideas, popular at the time, changed science, but not in the way he originally intended.

I also recall seeing these rock ages given in an astronomy magazine of the

seventies or it may have been the eighties. But it was soon realised by scientists that the ages were incompatible with theory and the game was on to find ages more agreeable. Some scientists have short and selective memories and deny that this was ever in print. Others justify it by claiming that the more modern, 'corresponding' dates are attributable to improved dating techniques. Improvement on dates that are in truth manipulated to fit theories is not an improvement, it's called fudging because any radical new method or update would also change the age of the Earth, and this has not happened.

All of the theories about the Moon's origin have been around for decades or even centuries, but they are dusted off and resurrected on a regular basis as the need arises. There is more up-to-date information but there is also a caveat in that rock cannot really be dated with any certainty and any lunar rocks or meteorites found could have come from anywhere at any time in the past n millions of years or just yesterday. ...Rock dating is a highly suspect discipline, something we will return to. 3

And then I found the seventies evidence and supporting references thanks to "The Moon and the Planets", by William R Corliss, ALE19 Earth-Moon Compositional Differences page 116 Problems in Dating Lunar Rocks and Soil "X3. Analysis of lunar sample 14163. The ratios of lead-207 to lead-206 were 1.2 to 1.3, giving apparent ages of up to 5. 5 billion years. "This isotopic composition has never been observed anywhere in the material of the solar system. "(R1) References: R1. Driscoll, Everly; "Dating of Moon Samples, " Science News, 101:12, 1972. (X1-X3)" (NASA only has rocks from the Earth and Moon)

Moon rock dating and rock dating in general is highly controversial even among scientists and we will return to the subject when I find the data. The main problem seems to be that big assumptions must be made about the origin, pollution by surrounding rock and the original chemical composition of the rock itself.

Back to Ronald Regehr:

2. Rocks Origin: "The chemical composition of the dust upon which the rocks sat differed remarkably from the rocks themselves, contrary to accepted theories that the dust resulted from weathering and breakup of the rocks themselves. The rocks had to have come from somewhere else."

3. Heavier Elements on Surface: "Normal planetary composition results in heavier elements in the core and lighter materials at the surface; not so with the moon. According to Wilson, "The abundance of refractory elements like titanium in the

surface areas is so pronounced that several geologists proposed the refractory compounds were brought to the moon's surface in great quantity in some unknown way. They don't know how, but that it was done cannot be questioned."

No one knows what a "normal planetary composition" is because no one has ever dug into any planet other than the Earth. The idea that the Earth is a model for all planetary formation is an assumption and most probably wrong. The Earth is a model because it has been so since Victorian times and because scientists are ultra-conservative.

4. Water Vapour: "On March 7, 1971, lunar instruments placed by the astronauts recorded a vapour cloud of water passing across the surface of the moon. The cloud lasted 14 hours and covered an area of about 100 square miles. As recently as 2006 the settled value for the lunar bulk water content was below 1 part per billion. Most values now discussed (2012) well exceed 1 part per million," Not enough for a 100 square miles of vapour though. There are some more up-to-date reports of water found by probes, but never enough to explain the original sighting.

Water on the Moon was one of the many scientifically dreaded Immanuel Velikovsky's predictions proven to be true. 6

There is now evidence that the Moon has an atmosphere of some kind, but this is waved away by scientists who point to the one sixth Earth gravity of the Moon being incapable of retaining an atmosphere. However, the reader will see below that the accepted Newtonian lunar gravity gradient is also questionable. The gravity may be much more than predicted and an atmosphere is not so impossible! At the time of writing 2015 the author has found further evidence that some scientists are now admitting that the moon does have a tenuous atmosphere. Give it time and Luna will have an atmosphere that will support a 100 square miles of vapour?

5. Magnetic Rocks: "The Moon rocks were magnetized. This is odd because there is no magnetic field on the moon itself. This could not have originated from a "close call" with Earth, such an encounter would have ripped the moon apart."

The Moon's anomalous magnetism was one more of Velikovsky's many 1950's predictions. All of them have been denied or called lucky guesses by astronomers, but all of them have been proven by scientific exploration of the Moon. If you happen to be a scientist this is called prediction but if you are a non scientist it's called a lucky guess, because "you are unqualified". Therefore: thinking for yourself is under the exclusive control of the qualified scientist and all who repeat the consensus theory paradigm. Independent thinking is outlawed by science.

6. No Volcanoes: “Some of the moon’s craters originated internally, yet there is no indication that the moon was ever hot enough to produce volcanic eruptions. However, many features of the Moon’s surface are described scientifically as volcanoes and lava tubes.”

Update: Brian Handwerk for National Geographic News October 26, 2009. “A “skylight” found on the moon’s surface could provide access to a cosy underground shelter for future humans on the moon, scientists say. Japan’s Kaguya spacecraft recently captured pictures of the curious dark hole, which may open onto a large underground lava tube... ...Researchers believe the Moon’s volcanoes were active until about three billion years ago, although recent data from Kaguya indicate there might have been volcanic activity as recently as 2.5 million years ago. Due to the Moon’s volcanic past, scientists have long expected that lava tubes exist in the lunar underground.” 7 When the latest rehashed theory of the Moon’s origin was trotted-out it was realised that volcanism was OK after-all, even though the theory is older than the scientists.

The National Geographic “skylight” picture has now been reduced to the size of a postage stamp.

The central peak of Tycho crater may hold volcanic clues, according to a report from an Indian research team. Credit: NASA Goddard/Arizona State University

7. Moon Mascons: “Mascons, which are large, dense, circular masses lying twenty to forty miles beneath the centres of the moon’s maria, “These are broad, disk-shaped objects that could be possibly some kind of artificial construction. For huge circular disks are not likely to be beneath each huge maria, centred like bulls-eyes in the middle of each, by coincidence or accident”.”

The artificial construction idea started with another idea that originally came from NASA itself with the ‘Hollow Moon theory’. Mascons are now used by NASA to explain-away all anomalous crash-landings and even some that were not attributed to gravitational effects at the time, like the Apollo 11 near disaster that we will examine.

8. Seismic Activity: “Hundreds of “moonquakes” are recorded each year that cannot be attributed to meteor strikes. In November, 1958, Soviet astronomer Nikolay A. Kozyrev of the Crimean Astrophysical Observatory photographed a gaseous eruption of the Moon near the crater Alphonsus. He also detected a reddish glow that lasted for about an hour. In 1963, astronomers at the Lowell Observatory also saw reddish glows on the crests of ridges in the Aristarchus region.”

9. (NASA’s) Hollow Moon: “The moon’s mean density is 3.34 gm/cm³ (3.34 times

an equal volume of water) whereas the Earth's is 5.5. What does this mean? In 1962, NASA scientist Dr. Gordon MacDonald stated, "If the astronomical data are reduced, it is found that the data require that the interior of the moon is more like a hollow than a homogeneous sphere." Nobel chemist Dr. Harold Urey suggested the Moon's reduced density is because of large areas inside the moon where there is "simply a cavity."

MIT's Dr. Sean C. Solomon wrote, "the Lunar Orbiter experiments vastly improved our knowledge of the Moon's gravitational field . . . indicating the frightening possibility that the moon might be hollow." In Carl Sagan's treatise, *Intelligent Life in the Universe*, the famous astronomer stated, "A natural satellite cannot be a hollow object." He was quick to notice things like that. The hollow Moon idea is now played down. Wiki says: "The Hollow Moon theory is a pseudo-scientific theory that suggests that Earth's Moon is a large hollow sphere. The concept is a recurring plot device in science fiction, although no scientific evidence exists to support the idea".⁸ Well that cannot be true and it's not pseudo-scientific because the idea originated with academics and academic scientists say they ARE science. Seismic observations have been shown to be so unreliable on Earth that it staggers the imagination, as we will read in another chapter, but notwithstanding there can be no doubt that data suggests that the Moon is more dense at its surface than below.

10. Moon Echoes: "On November 20, 1969, the Apollo 12 crew jettisoned the lunar module ascent stage causing it to crash onto the moon. The LM's impact (about 40 miles from the Apollo 12 landing site) created an artificial moonquake with startling characteristics; the Moon reverberated like a bell for more than an hour. This phenomenon was repeated with Apollo 13 (intentionally commanding the third rocket stage to impact the moon), with even more startling results. Seismic instruments recorded that the reverberations lasted for three hours and twenty minutes and travelled to a depth of twenty-five miles, leading to the conclusion that the moon has an unusually light or even no core." Supporting a "Hollow Moon" idea that is pseudo-scientific according to Wiki wimps!

11. Unusual Metals: "The moon's crust is much harder than presumed. Remember the extreme difficulty the astronauts encountered when they tried to drill into the maria? Surprise! The maria is composed primarily ilmenite, a mineral containing large amounts of titanium, the same metal used to fabricate the hulls of deep-diving submarines and the skin of the SR-71 "Blackbird". Uranium 236 and neptunium 237 (elements not found in nature on Earth) were discovered in lunar rocks, as were rustproof iron particles."

This destroys any theory that involves the Moon once being part of the Earth. I can't find any mention of rustproof iron from NASA or science in general and this

usually means that they have assumed/hoped that the question is long forgotten. Eventually it will be consigned to the realm of conspiracy theory and scientists will wave the question away.

12. Moon's Origin: "Before the astronaut's moon rocks conclusively disproved the theory, the Moon was believed to have originated when a chunk of Earth broke off aeons ago. Another theory was that the moon was created from leftover "space dust" remaining after the Earth was created. Analysis of the composition of moon rocks disproved this theory also. Another popular theory is that the moon was somehow "captured" by the Earth's gravitational attraction, but no evidence exists to support this theory. Isaac Asimov stated, "Its too big to have been captured by the Earth. The chances of such a capture having been effected and the moon then having taken up nearly circular orbit around our Earth are too small to make such an eventuality credible."

The collision theory is back in vogue, with Earth allegedly having been struck by a Mars-sized planet with the material ejected from it coalescing to form the Moon. We all wonder how long it will be before this theory is replaced. The sad truth is, that scientists do not have a clue about lunar origin but find it impossible to admit such a seemingly basic omission. One recalls their confidence in declaring the structure of things unseen, unobserved, theoretical constructs like unseen, theoretical pulsars that "prove" Albert Einstein's theories and yet are unable to provide any plausible origin for our nearest cosmic neighbour.

More Lunar History, Origin and Age

Caveat: With the coming of the space probes, all pre-spaceage astronomical theories of the Moon and indeed those of the whole Solar System had to be abandoned and reconsidered. Therefore, unless some major changes in the astronomer's mode of thinking has taken place, ALL astronomical theories without direct observations are somewhat suspect:

"The Solar System" (Oxford University Press, 1973) "Books written about the solar system before the advent of the space age could as well have been written in Latin or Greek, so dated do they appear to a contemporary reader." Zdenek Kopal
The next time an astronomer appears on TV and tells us how certain he is about what's going on 2000 light years away, it would be good to remind him what is not known about the Moon.

From starchild.gsfc.nasa.gov: Various theories of the Moon's origin have been conjectured but the one currently in vogue is The Giant Impactor Theory. All of the various other theories are recycled and reused over the years and this is the one fashionable at the moment. The Giant Impactor Theory (sometimes called

The Ejected Ring Theory): This theory proposes that a planetesimal (or small planet) the size of Mars struck the Earth just after the formation of the solar system, ejecting large volumes of heated material from the outer layers of both objects. A disk of orbiting material was formed, and this matter eventually stuck together to form the Moon in orbit around the Earth. 'This theory can explain why the Moon is made mostly of rock and how the rock was excessively heated.' 9

Are you sure about that?

Oh yes, absolutely!

What about the heavy metals in the Moon's crust?

Ah!

csep10.phys.utk.edu: Constraints from Recent Data: A detailed comparison of the properties of Luna and Earth rock samples has placed very strong constraints on the possible validity of these hypotheses. For example, if the Moon came from material that once made up the Earth, then Lunar and Terrestrial rocks should be much more similar in composition than if the Moon was formed elsewhere and only later captured by the Earth." 10

According to Schmitt: "If the Giant Impact hypothesis is not compatible with this evidence, alternatives to it should be considered, including capture of a small, independent planet from a solar orbit near that of the Earth's. 11 He should have known better than to ask for multiple theories as science works only with a single consensus theory.

news.discovery.com: Controversial Moon Origin Theory Rewrites History: The moon may have been adopted by our planet instead of descended from it. If a new twist on a decades-old theory is right, conditions in the early solar system suggest the moon formed inside Mercury's orbit and migrated out until it was roped into orbit around Earth. (The reader may recall that Isaac Asimov said that this was impossible) The idea flies in the face of a scientific consensus theory, known as the giant impact hypothesis, which holds that the moon formed from red-hot debris left over after a Mars-sized object collided with Earth around 4.5 billion years ago.

Malcuit's version of events is tantamount to cosmic blasphemy, but scientists have recently found 4 billion-year-old minerals in Australia that suggest our planet was too cool to have sustained a cataclysmic moon-forming impact early in its history. "Everything in the giant impact model is hot, hot, hot," he said. "It's incompatible with what we see in the geologic record. Earth is cool enough at that time to have ocean water on its surface. Malcuit's computer modelling studies, which he has worked on since the 1980's, show that it is possible for Earth's gravitational pull to capture the moon." 12 None of the theories offered by astronomers is

compatible, they come and they go, and then they come back again. It's origin, formation and how the Moon came to be orbiting the Earth is a complete mystery and any theory offered is simply wishful thinking.

NASA's magnetic flux ropes and some strange astronomical stuff.

Even though the universe has been shown to be electrical in nature, as we will see, the scientists continue to insist that electrical forces play little or no part in celestial dynamics. This, in spite of the huge electrical potential of the Sun and that of the Earth having been known about for decades. The plasma in space is electrical in nature although astronomers call such things "magnetic". School kids know that there is no magnetic field without an electric current – astronomers apparently don't. But, not long ago, NASA made a discovery it couldn't ignore and it seems it may force the astronomers, kicking and screaming, to acknowledge something they have denied for decades... or maybe not! This is because of what are called magnetic flux ropes, electric currents that flow from the Sun and throughout the Solar System. However, I would not recommend holding your breath because they still insist in calling them "magnetic" ropes and I'm assured that any electricity is static... Flux as in "flux ropes" is flowing, movement, change?

The main reason behind this denial is the "Velikovsky Affair" that started with the publication of the book, 'Worlds in Collision' (WIC) in 1950. In it Velikovsky insisted that the universe is electrical and that it was electricity rather than gravity that played the major role in its formation. For unexplained reasons, astronomers went a little crazy after his theory became public knowledge and they have never recovered. It may seem strange to younger readers that a book published in 1950 should so cloud the judgement of modern-day astronomers, but one must read the actual original as opposed to the revised history to understand. Velikovsky was a latter-day version of Nikola Tesla when it came to making scientists look like monkeys – and they are still smarting. Both Velikovsky and the astronomers made predictions about the Moon before the first landings. Velikovsky's predictions turned-out to be right and those of the astronomers were wrong. As a result, the astronomical community devised a campaign of debunking and character assassination that persists to this day. Most of Velikovsky's critics have never read his books, relying on second hand accounts from peer reviewed writers who use their authority to support lies about his undeniable predictive achievements. The obvious solution is to actually read (WIC) with an unbiased mind, something the sceptics seem incapable of doing.

Headline from NowPublic.com "It's okay to Call the "Magnetic Flux Ropes" Found Connecting the Sun and Earth an Electric Current! "In science, we would like to

think that there are no taboos and that all subjects should be available for research. Not so, unfortunately... What do the terms “cold fusion,” “UFO,” “Velikovsky” stir in the minds of academics? The simple answer is often nothing short of contempt. Contempt is an ugly word, but not far off the mark.

Preconceptions about particular topics, especially so-called “hot-button issues” (religion, politics, etc.), are a natural part of human existence. Everyone has opinions and one’s own opinions often colour one’s assessment of others and their opinions. In some cases, a simple difference of opinions blossoms into something more onerous. An extreme difference of opinions on a polarising issue may lead to one or the other side developing contempt for the other, at which point communications may break down or cease altogether.

One such instance is the curious case of electricity in space, or the presumed lack thereof despite compelling evidence to the contrary. It seems there has been a breakdown in communications between the field of astronomy and the fields of plasma physics and electrical engineering. Astronomers appear to be operating under the presupposition that charges cannot be separate in space and that currents do not exist between ponderable bodies in the sparse plasma medium between them. This may be at least partially an effect of the backlash relating to the so-called “Velikovsky affair.”

To wit, it appears that astronomers have taken this presupposition so far that they steadfastly refuse to mention electric currents they have detected, preferring to refer only to their magnetic field byproducts in their press releases, except when the evidence becomes incontrovertible. As though simply refusing to mention them by their proper name (much as an ostrich hides its head in the sand when faced with a threat) somehow validates the view that either they’re “not there” or “do nothing.” The electromagnetic field is a physical field produced by electrically charged objects. It affects the behaviour of charged objects in the vicinity of the field.

The electromagnetic field extends indefinitely throughout space and describes the electromagnetic interaction. It is one of the four fundamental forces of nature (the others are gravitation, the weak interaction, and the strong interaction). The field can be viewed as the combination of an electric field and a magnetic field. The electric field is produced by stationary charges, and the magnetic field by moving charges (moving currents, not static); these two are often described as the sources of the field. The way in which charges and currents interact with the electromagnetic field is described by Maxwell’s equations and the Lorentz force law.” 13

Time magazine named NowPublic.com (the source of the above) one of the Top

50 websites of 2007. In 2009, the site was nominated for an Emmy in Advanced Technology. The site is now inactive as of 2013.

Astronomers have allowed the Velikovsky affair to cloud their judgement and in doing so have themselves become scientifically unstable (bonkers) and unreliable as we see below. Make no mistake, this and many other issues continue today. 14 Despite unwavering resistance from science a veritable industry of scientists mathematicians and researchers has grown around Velikovsky's Electric Universe. Websites like thunderbolts.info and Wallace Thornhill & David Talbott's book 'The Electric Universe' are typical examples of the drive for more plausible answers to the questions unanswered by science.

Earth's 'net' electric charge:

All scientists tend to dodge questions about the Earth's 'net electric charge' by referring to the charge at the surface compared to the charge of the ionosphere. As the ionosphere is part of the Earth we obviously need the net charge of both, but this is not forthcoming. Velikovsky proposed that there were planetary close encounters in the distant although historical past of our planet. At the closest point of approach of a hypothetical body or planet there would be an equalisation of the voltage – a spark would flash planet to planet and this is why the net charge of the Earth is a taboo subject.

Some hilariously funny history of the 1950's-60's

Donald Menzel (US astronomer and UFO debunker extraordinaire) was angered by the Bargmann-Motz letter in Science, 14a (supporting the predictions of Velikovsky) considering it to be 'uncalled for.' He seemed infuriated that Larrabee, Velikovsky's book reviewer, in one non-committal passage had called attention to an ironical situation: in 1952, in the Proceedings of the American Philosophical Society, Menzel had offered calculations to show that if Velikovsky were right about electromagnetic forces in the solar system, the sun would have to have a surface electric potential of 10 to the 19 (10 raised to 19th power, 10 billion billion) volts – an absolute impossibility, according to the astronomer; but in 1960, V. A. Bailey, Emeritus Professor of Physics at the University of Sydney, claimed that the sun is electrically charged, and that it has a surface potential of 10 to the 19 volts — precisely the "impossible" value calculated by Menzel. Bailey, at the time his theory was first published, was entirely unaware of Velikovsky's work and of Menzel's repudiation of it.

Professor Bailey died December 7, 1964, in Switzerland – he was en route to the United States, where he hoped to see experiments carried out in space to test his hypotheses.

The idea that his ‘quantitative refutation of Velikovsky’s wild hypothesis’ – Menzel’s own description of his own contribution to the Proceedings in 1952 – should now be brought to Velikovsky’s support was intolerable to the Harvard astronomer. So, when he mailed his paper to Harper’s in 1963, he also sent a copy to Bailey in Sydney and asked him in a covering letter to revoke his theory of electric charge on the Sun. That theory was casting doubt on the continuing efforts of Menzel and other American scientists to discredit Velikovsky, and Menzel pointed out what he conceived to be an error in Bailey’s work.

Professor Bailey, taking exception to the idea that his own work should be abandoned to accommodate the anti-Velikovsky forces, prepared an article in rebuttal of Menzel’s piece and submitted it to Harper’s for publication in the same issue with Menzel’s. Bailey had discovered a simple arithmetical error in Menzel’s calculations, which invalidated his argument.” 15

A true and honest, scientific appraisal was never considered as a possibility and then as now science is abandoned in favour of the face-saving antics of Donald Menzel and other scientists.

Academic Blackmail

A letter from astronomer and Velikovsky debunker in chief Dr. Harlow Shapley to publisher Macmillan threatened a boycott of the company’s textbook division if they continued to publish Velikovsky’s book WIC. Shapley then director the Harvard Observatory, branded the book “nonsense and rubbish,” without reading it.

More on Harlow Shapley, organizer of the campaign against Velikovsky in academia: From letters to the ‘Oil Is Mastery – blog’ ‘Harlow Shapley: Portrait of Deception’, “I just read the most interesting anecdote about the Harvard University pseudo scientist crackpot Harlow Shapley... (Shapley was convinced that spiral nebulae (galaxies) are inside our Milky Way and therefore the whole universe was confined to the Milky Way.)”

“According to Milton Humason, the astronomer [Humason] had given him [Harlow Shapley] plates of M31, the great Andromeda nebula, for examination on the stereo comparator. During the process of blinking the plates, the night assistant [Humason] discerned images never before seen. He marked their locations in ink and sought out Shapley for confirmation. If he was not mistaken, the plates contained Cepheid variables (astronomers galactic measuring sticks) from beyond the Milky Way. Shapley, who was certain of himself, was having none of this. He launched into a shortened version of the same arguments he employed during the Great Debate [where Shapley argued that all galaxies were inside the Milky Way], then calmly took out his handkerchief, turned the plates

over, and wiped them clean” — Gale E. Christianson, historian, Edwin Hubble: Mariner of the Nebulae, 1996. 15b

What we have here is is an astronomer's display of breathtaking authoritarianism and hubris that sees itself as right even when clearly shown to be wrong. That in the presence of a senior scientist no one has the right to publish an opinion if they do not possess the right qualifications and even if they do, and decide to dissent they are still wrong. The idea that astronomers can dictate what we all read and what we are allowed to think is utterly preposterous. Their pointless efforts resulted in Velikovsky's book becoming a best seller that is still on booksellers shelves today. Astronomers still lay awake in bed at night plotting Velikovskian character assassinations, in other words conspiracies.

Back to Ronald Regehr:

13. Weird Orbit: “Our moon is the only moon in the solar system that has a stationary, near-perfect circular orbit. Stranger still, the moon's centre of mass is about 6000 feet closer to the Earth than its geometric centre (which should cause wobbling), but the moon's bulge is on the far side of the moon, away from the Earth. “Something, somehow” had to put the moon in orbit with its precise altitude, course, and speed... Unknown!” (More on the moon's centre of mass later)

14. Moon Diameter: “How does one explain the “coincidence” that the moon is just the right distance, coupled with just the right diameter, to completely cover the sun during an eclipse? Again, Isaac Asimov responds, “There is no astronomical reason why the moon and the sun should fit so well. It is the sheerest of coincidences, and only the Earth among all the planets is blessed in this fashion.” Many thanks to Ronald Regehr

Greek authors Aristotle and Plutarch, and Roman authors Apollonius Rhodius and Ovid all wrote of a group of people called the Proselenes who lived in the central mountainous area of Greece called Arcadia. The Proselenes claimed title to this area because their forebears were there “before there was a moon in the heavens.” This claim is substantiated by symbols on the wall of the Courtyard of Kalasasaya, near the city of Tiahuanaco, Bolivia, which record that the moon came into orbit around the Earth between 11,500 and 13,000 years ago, long before recorded history.”^{15A}

A few more anomalies:

The Moon's Magnetic Field

“The Moon has an external magnetic field that is very weak in comparison with that of the Earth. Other major differences are that the Moon does not currently have a dipolar (two pole) magnetic field (as would be generated by a geodynamo in its core) and the varying magnetisation that is present is almost entirely crustal in origin.”¹⁶ The remnant magnetism of lunar iron-rich rocks was an unwelcome surprise to NASA and to science in general. Velikovsky had written to NASA prior to the missions, asking that the positions of magnetic rocks be recorded; yet another of his predictions in his book WIC. The Earth’s geodynamo theory is something totally unproven by science, but because no one has access to the core of the Earth it remains in place. Basing speculation upon this presumed theory, it was postulated by scientists that the Moon would have no magnetic field. However, around this time Venus was also found to have no magnetic field and one would expect a drive to modify the theory? Venus has always been considered as being Earth’s twin as far as size, Solar System position and assumed composition is concerned. Additionally, as if this was not enough to explode the theory, it was found that Mercury most probably had a magnetic field, quite the reverse to what would be expected from theory.

Venus: “The lack of an intrinsic magnetic field at Venus was surprising given it is similar to Earth in size, and was expected also to contain a dynamo at its core. A dynamo requires three things: A conducting liquid, rotation, and convection. The core is thought to be electrically conductive and, while its rotation is often thought to be too slow, simulations show it is adequate to produce a dynamo.”¹⁷ In other words, a computer simulation can be manipulated to show a dynamo operating in all but a stationary planet.

Mercury: “At the first close approach, instruments detected a magnetic field, to the great surprise of planetary geologists—Mercury’s rotation was expected to be much too slow to generate a significant dynamo effect. The second close approach was primarily used for imaging, but at the third approach, extensive magnetic data were obtained. The data revealed that the planet’s magnetic field is much like the Earth’s, which deflects the solar wind around the planet. The origin of Mercury’s magnetic field is still the subject of several competing theories.”^{17a}

Scientists invented all manner of theory-patches and even stood on their heads to explain the reason why Venus has no magnetic field while Mercury has one:

Venus according to astronomers: This implies the dynamo is missing because of a lack of convection in the Venusian core. On Earth, convection occurs in the liquid outer layer of the core because the bottom of the liquid layer is much hotter than the top. On Venus, a global resurfacing event may have shut down plate tectonics and led to a reduced heat flux through the crust. This caused the mantle

temperature to increase, thereby reducing the heat flux out of the core. As a result, no internal geodynamo is available to drive a magnetic field. Instead, the heat energy from the core is being used to reheat the crust. They can also persuade pigs to fly in a computer simulation.

One possibility is Venus has no solid inner core, or its core is not currently cooling, so the entire liquid part of the core is at approximately the same temperature. Another possibility is its core has already completely solidified. The state of the core is highly dependent on the concentration of sulphur, which is unknown at present.”¹⁸ The unlikelihood of ever finding an answer is most likely to be eternal as boring down to Venus’ core is not possible. And so the theory stands forever and drives other theories in the wrong direction.

Mercury: “The origins of the magnetic field (of Mercury) can be explained by dynamo theory; i.e., by the convection of electrically conductive molten iron in the planet’s outer core. A dynamo is generated by a large iron core that has sunk to a planet’s centre of mass, has not cooled over the years, an outer core that has not been completely solidified, and circulates around the interior.”¹⁹ This shameless statement by Wiki keeps geology going as a science and removes the need to change the text-books. All of the above is pure “may have been” speculation and not one jot of empirical proof supports any of this intellectualised gobbledygook. But it is entered as fact and used in support of further theorising. We see a clear example of how science moves ever further from reality as reality is replaced by theory.

Stars hanging on the Moon’s limb

Astronomers make various measurements with stars and planets occulted by the limb of the Moon. In other words, they use the edge of the Moon’s disk to cover the star: “The term occultation is most frequently used to describe those relatively frequent occasions when the Moon passes in front of a star during the course of its orbital motion around the Earth. Since the Moon, with an angular speed with respect to the stars of 0.55 arc sec/s or 2.7 μ rad/s, has no atmosphere and stars have an angular diameter of at most 0.057 arc-seconds or 0.28 μ rad, a star that is occulted by the moon will disappear or reappear in 0.1 seconds or less on the moon’s edge, or limb. Events that take place on the Moon’s dark limb are of particular interest to observers, because the lack of glare allows these occultations to more easily be observed and timed.”²⁰ (This is the reason scientists deny the possibility of a lunar atmosphere.)

A theoretical problem arises when a star hangs too long at the point of occultation, (limb) (as they sometimes tend to do) sometimes they hang some distance away from the Moon or even appear to pass onto the Moon's surface.

John Herschel is said to have observed such an effect:

On September 3rd 1905, H. P. Hollis (Royal Observatory) grew tired of waiting for the stars to occult. The first record I have of this is on May the 4th 1783 with around twenty other reports up to 1956. Modern astronomers it seems ignore such mavericks, probably because they cast doubt on Einstein's 'light bending in a gravitational field'. These observations certainly cast doubt on the science of occultation. This is probably an optical phenomenon, but are the so called "proofs of relativity" also optical non relativistic? 21 Can this be the proof of a lunar atmosphere that would completely disrupt the textbooks of both lunar and Newtonian science? The hundred mile water vapour cloud had to float in something?

Radio waves do the same thing: On December 15th 1972 the Apollo spacecraft Endeavour passed behind the Moon. The radio signals continued when there should have been none. 22

Nature, "The reception of radio signals from the orbiting lunar spaceship America after its occultation behind the lunar limb is a confirmation of results reported for the Apollo 15 ship Endeavour 1. Similar observations arranged with the lunar command module during the Apollo 16 mission were unsuccessful because transmissions from the command module did not occur while the Moon was above our horizon." 23 Can it be that there is an unrecognised process operating here? Surely not, physics knows everything. But the two phenomena appear to be part of the same (optical?) effect? Why arrange for observations to be made at a time when the Moon was below the horizon? Don't they know where the Moon is during a space mission? We have evidence that they don't!

Transient lunar phenomenon (TLP)

"Claims of short-lived lunar phenomena go back at least 1,000 years, with some having been observed independently by multiple witnesses or reputable scientists. Nevertheless, the majority of transient lunar phenomenon reports are not reproducible and do not possess adequate control experiments that could be used to distinguish among alternative hypotheses. Few reports concerning these phenomena are ever published in peer reviewed scientific journals, and the lunar scientific community rarely discusses these observations. Most lunar scientists will acknowledge that transient events such as out gassing and impact cratering do occur over geologic time: the controversy lies in the frequency of such events." 24

Transient lunar phenomenon typify the things that science refuses to acknowledge. The reason, we are told, is because of unpredictability and the inability to reproduce and control. Reproduction and control are impossible in any astronomy and this is a get-out-of-jail explanation that fails to include the serious

problem of new areas of study. How, under any conceivable circumstances would it be possible to do repeatable experiments on a transient phenomena? If science refuses to look at an event it will usually conclude that 'we didn't look because it probably never happened'. Such ultra-conservative scepticism cannot, by any standards, be considered as part of a search for knowledge.

And then we find:

"NASA's Operation Moon Blink detected 28 lunar events in a relatively short period of time." 25 Not so long ago, anyone claiming to see flashes of light on the Moon would be viewed with deep suspicion by professional astronomers. Such reports were filed under "L" ... for lunatic." 26

Ages of Flashes: "Aristarchus, Plato, Eratosthenes, Biela, Rabbi Levi, and Posidonius all reported anomalous lights on the moon.

NASA, one year before the first lunar landing, reported 570+ lights and flashes were observed on the Moon from 1540 to 1967." 27 But as we will see below, academic science is very thin on the ground at NASA.

Professional astronomers are more interested in the mathematics of the universe and have little time to actually look at a body like the Moon. They do tend to tell others "how things ought to be" even though the 'ought to be' has little in common with reality.

"The is-ought problem, as articulated by Scottish philosopher and historian David Hume (1711-76), states that many writers make claims about what ought to be on the basis of statements about what is. Hume found that there seems to be a significant difference between descriptive statements (about what is) and prescriptive or normative statements (about what ought to be), and that it is not obvious how one can coherently move from descriptive statements to prescriptive ones. The is-ought problem is also known as Hume's law and Hume's guillotine." 28 ... something with which science has yet to come to grips.

I asked a scientist about this and he said that Hume was referring to religion. But science is a religion, at the very least a belief system.

Lunar Gravitation Anomalies

The following studies are particularly interesting in that they are not supposed to exist. It is interesting in that one of the continuing themes used in the 1950's Velikovsky debunking is that there is no evidence of perturbation in the Moon's orbit by the close approach of the planet Mars. The first one below would be an event around the time that Velikovsky claims an Earth close encounter with the planet:

X2. “Sudden” perturbations in non-gravitational forces.

“The parameter [D’], which is a linear combination of the accelerations of the Earth and Moon, can be followed as a function of time with high confidence from about 700 BCE to the present. From its behaviour, we are apparently forced to conclude that there was something like a ‘square wave’ in the non-gravitational forces that began about 700 CE and that lasted until about 1300 CE. During the time of this square wave, the accelerations apparently changed by factors of around 5.

We are seriously lacking in mechanisms to explain the non-gravitational forces. The only mechanism of tidal friction (the ‘shallow seas’ model) that has been evaluated quantitatively provides only about one fourth of the necessary amount of friction, and it does not provide for much change with time within a period as short as historic times. Forces of non-tidal origin, which are of the same order as the tidal forces, may be due largely to core-mantle interactions. There are no quantitative theories of these interactions; there are only models whose parameters are uncertain within many orders of magnitude. ” (R2) CE equals Christian Era.

In other words, the Moon shifted its position at some time before or circa 700 CE, close to the Velikovsky prediction.

X3. Discrepancy between the observed rate of the Moon’s recession and that attributable to tidal action.

“Now Thomas van Flandern of the U.S. Naval Observatory reports that he has discovered such evidence for a weakening of gravity. He told the meeting of the American Geophysical Union in Washington this week that the evidence comes from a study of the motions of the moon.

If gravity is weakening, the orbits of planets around the sun or of satellites around planets will expand, and the orbital period of these bodies will correspondingly increase. Some such expansion is provided by tidal forces in these systems, and the trick is to subtract out the tidal forces and see if there is any left over.

Working with the calculations of two other observers, Van Flandern reports he has found there is an increase of four centimetres a year in the radius of the moon’s orbit that is not accounted for by tidal action. ‘This is the first numerical result which appears to have as its most probable explanation that gravity is decreasing.’ (R3)

X4. “Non gravitational” drift of the moon’s longitude.

“(Ray) Stilton’s view cannot be dismissed out of hand. The argument starts out from observational evidence that the Moon, as viewed from Earth, seems to be subject to an ‘extra’ acceleration apart from the expected influence in line with

Newton's laws of motion. The result is a drift of the longitude of the Moon compared with Newtonian predictions, amounting to 0.5 degrees of arc per thousand years, and 3 or 4 degrees for the dates of the oldest eclipses on record" (Quarterly Journal of the Royal Astronomical Society, vol. 20, p. 243).

Not Newton's Laws, oh no!

"Lyttleton says that calculations based on Newtonian mechanics suggest that a certain eclipse two or three millennia ago would have been visible only in America. But contemporary records report sightings from Europe. Lyttleton takes these figures as evidence that the earth is slowly shrinking and that its moment of inertia is likewise changing." (X4)

"In contrast to Lyttleton's view, some astronomers believe the earth is expanding." (WRC) William R. Corliss 34

Lunar Gravitation Anomalies Moon landings and the gravity argument begins:

The original NASA explanations as to why the early Moon probes missed their target included everything but gravity, and it's only in the past few years that NASA have actually admitted that gravity played any part in its lunar probe failures. They now attribute all of their past problems to mascons, high concentrations of heavy matter embedded in the lunar surface. Although these anomalies do account for orbital inconsistencies they cannot explain all of the issues to be considered regarding failures of the original probes. This is the reason the post below at Keelynet.com has been included, because, when we consider that it was posted in 1997, well before any mascon announcements by NASA it appears almost prophetic in nature. Jim Ostrowski's insight leads him to the conclusion that gravity was the problem, although he thinks it may be due to centre of mass anomalies following the lead of NASA's Dr. Gordon MacDonald and his hollow Moon theory – there may well be another reason as we will see, but it's interesting that Jim is not the only one who thinks something is radically wrong:

Jim Ostrowski, Subject: Luna, "Evidence from the early space probes that Lunar gravitational gradient calculations were possibly flawed: The United States and the Soviet Union started to send probes to the Moon in the late fifties. Most of these initial probes met with miserable failure. It is posited here that the reason(s) for these early failures were due to a miscalculation of the lunar gravitational gradient.

While it would appear that the calculated mass of the moon was accurate enough to determine the surface gravity (1/6 of Earth's gravity) this is not sufficient data required to properly calculate landing or impact velocities if the moon were

assumed to be a hollow spheroid instead of a homogeneous mass of rock throughout it's volume. (Remember the hollow Moon above?)

This is because in the case of a hollow spheroid the centre of mass is much closer to the surface of the moon if in fact the moon is hollow than if it really were a homogeneous mass of rock. The location of the centre of mass of any celestial object is critical in determining it's gravitational gradient, hence the final velocity of any object required to soft-land or otherwise come in contact with the moon would not be known unless the location of the centre of mass is somehow determined.

The first of three early successful probes, Luna 1, was launched by the Russians on January 2, 1959, was not required to land, but rather "Flyby" the moon at a distance of about 4600 miles. This is a sufficient distance from the surface where exact knowledge of the location of the centre of mass is not critical to success.

Luna 2 became the first man made object to hit the moon. Here though, the probe was allegedly not designed to withstand impact, so no conclusions were drawn about the fact that it ceased to function thereafter.

Luna 3 circled the far side of the moon, took some pictures, and sent them back to the earth. Strangely, Russian moon exploration came to a four year stop after these initial successes. The Russians were characteristically secretive about the data they collected.

The American efforts were almost laughable at first. The Ranger space probes were designed to hard land on the moon.

Ranger 3, launched on January 26, 1962 , missed it's target completely and went into solar orbit.

Ranger 4 hit the moon but did not send back any useful information.

Ranger 5 missed the moon by 450 miles and the whole program was put on hold for two years.

Ranger 6 allegedly had it's electrical system burn out in flight and no pictures were sent. (Recall the net electric charge of Earth and the Moon were discounted not to mention the probable resultant discharge? Just theoretical!)

The Russians re-activated their space program, but their: Luna 5, launched on May 9, 1964, crashed at full speed on the moon, when it was intended to make a

soft landing. Luna 6 utterly missed the moon.

Luna 7 crashed on the moon when its retro rockets fired too soon, which is a significant detail in relation to where one assumes the moon's centre of gravity to be located in relation to the surface.

This is because of the fact that if the moon were assumed to be a homogeneous rock, the braking required to make a soft landing could begin taking place at an earlier time than if the moon were a hollow spheroid of the same mass.

The reason for this is that the acceleration that gravity imparts to a landing spacecraft is lower if the centre of mass is further away from the landing surface, therefore a slower burn rate of fuel is allowable to soften the landing. Hence an earlier ignition starting time may be allowed.

Ignition start time is also one of the easiest flight parameters to control, much more so than burn rates on any rocket motor.

Miscalculation of the moon's gravitational gradient cannot therefore be ruled out as a reason for the too early start time of Luna 7's landing rocket motor.

(Note: As we will see in this chapter, this is what almost happened to Apollo 11. Causes other than centre of gravity miscalculation, but clearly related to gravity will be discussed. For those who correctly point to the fact that gravity measurements are commonly and successfully used to land aircraft on Earth, we must remember that they have been calibrated for Earth-gravity use alone over many decades. Transferring formulae to another cosmic body could easily lead to problems that science would be unlikely to want to examine. There is much evidence that this is true.)

Luna 8 also crashed on the moon, but Luna 9 was successful, and became the first spacecraft to soft land on the moon.

Lunar probes from both the United States and the Soviet Union were more successful after this. This cannot most likely be attributed to some sudden advance in the quality of the hardware or telemetry methods of both space programs, whereas it is much more likely to be a result of recalculation of the lunar gravitational gradient. 35

We interrupt Jim Ostrowski's post here with some additional information:

The mission Radar Altimeter and the question: why were they so ineffective?
Some clues:

Radar Altimeter: "Invented in 1924, by American engineer Lloyd Espenschied. However, it took 14 years before Bell Labs was able to put Espenschied's device in

a form that was adaptable for aircraft use. In 1938 in co-operation with Bell Labs, United Air Lines fitted a radar type device to some of its airliners as a terrain avoidance device.” (Note: the pre-1940’s major technology, something that we will return to in these pages and the fact that the radar altimeter had been around for a long time before the Moon missions) 36

The radar altimeter and the gravimeter were available for use on all of the early lunar probes along with sophisticated telemetry-radio equipment. The lander height above the lunar surface was known and all instruments were capable of being monitored and controlled by NASA back on Earth with only just over a two second delay. The point being that the disastrous Moon crashes and the Apollo 11 near disaster were obviously due to not knowing the position above the lunar surface.

How can this be?

One possibility is that the height reading did not agree with the gravity reading. The almost disastrous Apollo 11 landing, when the computer went haywire after receiving data from the ground radar (altimeter). If a height reading disagreed with a gravity reading you can be sure it would be the height reading that would be jettisoned, which is, it seems, exactly what happened with Apollo 11.

At the first (soft) landing of an early probe, the gravity reading would probably be calibrated to one sixth Earth gravity in agreement with theory and all subsequent probes would be set the same. I don’t argue that this is the exact scenario, but something very much akin to this would certainly have happened if a gravity reading was questioned. There is no way that science will admit to an error in sacrosanct gravity theory – too much at stake. I note with interest that even with today’s sophisticated altimeters, even the most recent Curiosity Mars Rover mission has elected to lower the craft to the surface with wires, a mark of instrument (gravity) distrust? Such is sciences’ trust in Newton’s – as we will see – somewhat unreliable gravity equation, that also serves as a pillar supporting the whole architecture of physics. The reason given by NASA is to prevent dust rising due to the landing thrusters.

Apollo 11 landing

“As the Eagle’s landing radar acquired the surface, several computer error alarms appeared. The first was a code 1202 alarm, and even with their extensive training neither Armstrong nor Aldrin was aware of what this code meant. They promptly received word from CAPCOM in Houston that the alarms were not a concern; the 1202 and 1201 alarms were caused by an executive overflow (computer overload) in the lunar module computer.” 37

And again: “Four minutes into the Powered Descent, Eagle rotated ‘face up’ so that the radar on its underside was able to acquire the lunar surface and supply data on altitude and rate-of-descent. “We needed to get the landing radar into the equation pretty soon, ”Armstrong told Hansen, “because Earth didn’t know how close we were and we didn’t want to get too close to the lunar surface before we got that radar.” This showed them to be 10.1 km; a kilometre or so lower than the computer reckoned, because that was tracking their mean height above the surface, rather than their actual height.” 38 We need to know how this is possible and if it was safe to have two different heights above the Lunar surface?

A kilometre or so lower than the computer reckoned” is more than enough for a disaster to occur. A kilometre or so is ten percent of the height of the spacecraft. One has to ask where this mean height came from and how it was calculated, as it is absolutely useless to anyone attempting to land on the Moon. Shutting off the retro-rockets a kilometre above the moon would mean certain disaster, death to the astronauts. “Computers will unquestioningly process the most nonsensical of input data (“garbage in garbage out”) and produce nonsensical output.” 39

Back to Jim Ostrowski (Part 2)

In part 1, I have attempted to demonstrate how evidence from the early lunar space missions showed that something appeared to be lacking in the required effort to land the unmanned space craft on the lunar surface. The totality of that evidence indicates that it is at least possible that the calculations of the lunar gravitational gradient were just plain erroneous for some reason. The lunar orbiting space missions demonstrated even more evidence that the moon might not be a solid homogeneous rock throughout it’s volume. The most important evidence of this kind where this supposition was proven beyond all doubt was the discovery of the so called “mascons” or Mass Concentrations of Gravity that appear in some places around the lunar globe. These “mascons” were discovered by the Lunar Orbiter series of space missions of the late 1960’s. NASA reported that the gravitational pull caused by these mascons was so pronounced that the spacecraft dipped slightly and accelerated when flitting by the circular lunar plains. (But not enough to crash a Lunar Mission spacecraft) This showed that there must be some hidden structures of some kind of dense, heavy matter centred like a bulls eye under the circular maria.

No scientist has ever accounted for how these mascons got there or could have been formed by random natural processes. There is other data from the manned Apollo lunar exploration series that makes a case for the idea that the moon might not be a natural object formed by random processes such as congealing from a dust-cloud, billions of years ago.

The most significant fact revealed from the samples of lunar soil and rocks

brought back to earth by the Apollo astronauts is that the moon and earth cannot possibly share the same origins. The reason for this is the vastly different ages of the earth and moon as determined from samples of lunar material collected by the Apollo Astronauts.

Over 99 percent of the moon rocks brought back turned out upon analysis to be older than 90 percent of the rocks that can be found on the earth. The first rock that Neil Armstrong picked up after landing on the Sea of Tranquillity turned out to be 3.6 billion years old.

Other rocks turned out to be even older, 4.3, 4.5, 4.6 and one alleged to be even 5.3 billion years old. The oldest rocks found on earth are only 3.7 billion years old, and the area that the moon rocks came from was thought by scientists to be one of the youngest areas on the moon!

(Note: The reason for this is claimed to be because the earth's rocks have been recycled due to plate tectonics, a theory that the author has good reason to doubt. We will discuss this elsewhere)

Scientists have generally offered three major theories to account for the moons orbit around our planet. All of these are in serious trouble. One theory was that the moon might have been born alongside the earth from the same cloud of gas and dust about 4.6 billion years ago. This theory had to be junked after the lunar rock and soil samples were analysed for their ages, as outlined above. Another theory that the moon had somehow been ripped out of the earth, from the pacific basin, perhaps. This explanation fails for the same reason.

The third theory, that the moon had somehow been captured by the earth's gravitational field is interesting, but still not satisfactory, that is if it is assumed that the moon is a "natural" object manoeuvred about by random gravitational processes. However, this theory is the most favoured by scientists today. There are enormous objections to overcome in this last theory because of the extremely difficult celestial mechanics involved. (To admit to a capture theory is to give credence to Velikovsky et al and Earth's encounter with Venus, something so terrible to contemplate that science is prepared to modify its theories to avoid it.)

For one thing, any object entering the vicinity of the earth from elsewhere in the solar system has an initial velocity imparted by the sun's gravitational influence. The only confirmation that could possibly result in a rendezvous with the earth, would appear to be one where the moon had originated somewhere within the orbit of the earth around the sun. The possibility of this occurring as a result of some random natural process is staggeringly minuscule. The moon would have to have been "launched" from another planet (Venus or Mercury) or even from the Sun itself. If that were the case, then the lunar rocks and soil samples would be

younger, not older than rocks found on earth.

However, the probability that the moon came from elsewhere in the solar system outside the orbit of the earth is even more remote, if not totally impossible. This is because, as the moon approaches the earth from outside earth orbit it would be gaining speed, and as it got near the earth, a braking manoeuvre would be required to put it into the orbit that it now has.

A braking manoeuvre can only be accomplished with thrusting systems under intelligent control of some kind.

As NASA scientist Robin Brett aptly summarised, “It seems easier to explain the non-existence of the moon than it’s existence.” But of course, the Moon exists. Why or how it exists remains a mystery. 41

end of part 2 of 2 and many thanks to Jim Ostrowski

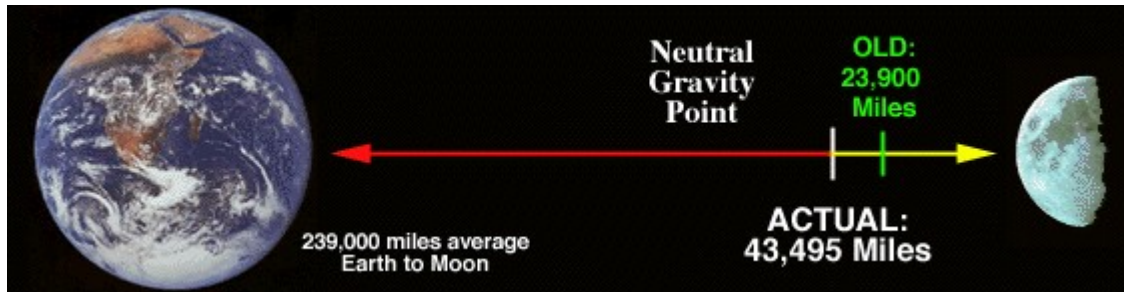
Compare the above with a much more recent NASA article: Bizarre Lunar Orbits Nov. 6, 2006 “Lunar mascons are a mystery. Although scientists generally agree they resulted from ancient impacts billions of years ago, it’s unclear how much of the excess mass is due to denser lava material filling the crater or how much is due to up-welling of denser iron-rich mantle material to the crust. Regardless of composition or origin, the mascons make the Moon the most gravitationally “lumpy” body known in the solar system. Although mascons also exist on Mars, none have been found on Venus or Earth; those two larger planets, however, have had an active tectonic (geological) past that has drawn their crusts down into their interiors several times in the past few billion years, homogenising the distribution of mass.” 42

Note the assumption that Venus has plate tectonics!, any port in a storm? Also that plate tectonics would work on the much hotter Venus in just the same way as it does on Earth? Again, note also the assumption that the Moon was ever hot enough for mantle-iron to be up-welling to the crust or even the assumption of an iron-rich mantle; it’s all pure conjecture.

More on Gravity

The Search for the Neutral Point of Gravity, Earth-Moon.

The Neutral Point of Gravity (NP) between Earth and Moon is the point where the gravity of Earth and Moon are equal. The point at which a traveller from Earth becomes subject to the influence of the Moon’s gravity. An uphill journey becomes a downhill gravity assisted coast to the Moon at this point, the craft being free from Earth’s gravity and within the Moon’s domain of attraction. Apollo astronauts found it not to be in the position predicted by Newtonian gravitational law.



(The Neutral Point should not be confused with the Lagrangian or L points.) 43
 The neutral point is the point where a spacecraft has an equal pull of gravity from both Earth and Moon. With thanks to: The OLD, theoretical distance is from Newton and the ACTUAL is that experienced by astronauts.

http://www.thelivingmoon.com/47john_lear/02files/Neutral_Point.html

Distance Earth-Moon NP

It must be remembered that the Moon's orbit is an ellipse and so distances for the NP will vary according to the Moon's position in its orbit, but only within the bounds of the Moon's orbital ellipse. Also important when calculating the NP is the fact that the the neutral point is also elliptical and smaller than the Moon's orbit by the particular distance given. This must be taken into account when using the various given positions.

“An accelerometer on the Apollo Command Module should have discerned the exact point where each spacecraft went through the neutral point on their journey to the Moon, but no explicit reference could be found to confirm this.”

Thanks to

http://www.thelivingmoon.com/47john_lear/02files/Neutral_Point.html

Thanks to

http://www.thelivingmoon.com/47john_lear/02files/Neutral_Point.html

“The official distance between the Moon and the Earth varies from around 356,400 km (221,456 mi) perigees (closest point to Earth) ... to 406,700 km (252,712 mi) at the extreme apogee (farthest point from Earth).” 44

The Lunar orbit seems to vary by around plus or minus 15,628 miles from an average orbital distance of 237,084 miles and any value for the NP should be within these two limits. The distance from Earth to the NP will be somewhat less by from 23,900 (Newton) to around 43,000 miles depending on who gives the distance.

There may be confusion with nautical and English miles in the ‘Yahoo Answers’ below. However the miles appear to be English miles, but this is not a fixed rule. Is this all part of an attempt to deceive, inveigle and obfuscate?

I did some research and finding an astronomy forum I asked if astronomers were foremost stargazers or mathematicians. The unanimous answer was that they were all mathematicians. And so it would be a simple task for them to calculate the neutral point – but they don't, they avoided the question.

Yahoo Answers: “Best Answer – Chosen by Voters. “It was Sir Isaac Newton who had first calculated the Earth-Moon neutral point using his theory of gravitation. That theory gave him an average Earth- Moon distance of 238,900 miles, and the neutral point thus occurred at ~ 23,900 miles from the moon. (215,000 miles from Earth)

This of course gave the familiar figure that the Moon's gravitational attraction was about 1/6th that of Earth.”

Note: NASA's calculations are much the same, something which contradicts the claim that Newton's theory has been improved upon over time with more up-to-date mathematics and Einstein's general relativity. NASA is using the original Newtonian gravity theory.

NASA “Average Distance Moon to Earth

Metric: 384,400 km English: 238,855 miles” (Newton 238,900 miles) 45

But then came a 1969 edition of Time magazine, an interview with Werner Von Braun himself, and the beginning of a persistent mathematical mystery concerning the Earth-Moon dual planetary system. Time reported that “43,495 miles from the Moon, lunar gravity exerted a force equal to the gravity of the Earth, then some 200,000 miles distant.”

If this neutral point figure is correct, the Moon is much more massive than any standard view of celestial mechanics will allow. A mere two weeks after the Time magazine article, Werner Von Braun quite suddenly resigned all his NASA posts and took a position as Vice President for Fairchild Industries. It began a process of “arithmetical obfuscation”, that can only be seen as deliberate, since to view what happened as not being deliberate would be akin to charging NASA and Braun with gross mathematical incompetence.

(Newton's neutral point (NP) is 23,900 miles from the moon. (215,000 miles from Earth)

Another example: in the 1981 edition of Baker's Space Technology, the Apollo 11 distance to the Moon is given as 253,475 miles. (Compare NASA 238,855 miles and Wiki's average 237,084 miles)

But the book ‘Apollo 11 Moon Landing’ gave the distance as just under 250,400 miles.

Then in 1996 Baker's Spaceflight and Rocketry gave the neutral point as 38,925 miles from the Moon and 214,550 miles from the Earth, giving a total distance

“To confound matters even further, space experts at NASA or elsewhere do not state whether they are using surface to surface, or centre to centre measurements. Nor do they state whether they are using nautical miles or statute miles. Nor do they stick to any one system. In short, “the only consistency in the Earth-Moon measurement scenario is the inconsistency of the data emanating from official sources.” 48

We are all well aware that a curved path trajectory is used to get to the Moon and that the total miles travelled by the spacecraft is dependent on the trajectory length, but nowhere is it stated that these distances are trajectory distances. The Earth-spacecraft distance stays the same whatever the trajectory, as does the distance to the Moon’s orbit. The neutral point is fixed plus or minus within the orbital parameters given above.

Lunar Landings

If we return to the discussion on early space probes above, we see that they usually made it to the Moon, but problems arose when close to the lunar surface or attempting to orbit the Moon. Landing was a particular problem throughout the programs culminating with Apollo 11, that came near to disaster. The same applies to more recent Mars probes: the landing and navigation systems seem almost totally unaware of the position of the surface even though they had a ground radar altimeter. This would only be explainable in terms of a conflict of computer input data, from one instrument giving height above the ground and input from a faulty gravity measurement giving a different height. It is not in the nature of a scientist to consider the possibility that gravity theory may be at fault, even though it has been no secret that it was faulty from its inception.

David Pratt discusses some anomalies regarding gravity: “According to Newtonian theory, the gravitational force between two or more bodies is therefore dependent on their masses. However, the gravitational acceleration of an attracted body is not dependent on its mass: if dropped simultaneously from a tower, and if air resistance is ignored, a tennis ball and a cannonball will hit the ground simultaneously. This is explained by means of Newton’s second law of motion, which states that the force applied to a body equals the mass of the body multiplied by its acceleration ($\text{Force} = \text{mass} \times \text{acceleration}$); this implies that gravity pulls harder on larger masses.”

In this somewhat technical article David Pratt explains how, if Newtons two force equations are combined the one becomes irreconcilable with the other.

“The Devil’s Dictionary defines gravitation as: “The tendency of all bodies to approach one another with a strength proportioned to the quantity of matter they contain – the quantity of matter they contain being ascertained by the strength of their tendency to approach one another’. Such is the seemingly circular logic

underlying standard gravity theory. The figures given for the masses and densities of all planets, stars, etc.. are purely theoretical; nobody has ever placed one on a balance and weighed it! It should be borne in mind, however, that weight is always a relative measure, since one mass can only be weighed in relation to some other mass. The fact that observed artificial satellite speeds match predictions is usually taken as evidence that the fundamentals of Newtonian theory must be correct.” 48b However, the Solar System has planets that have satellites just like our Moon and these enable astronomers to calculate orbital speed without reference to Newtons theories. It’s interesting that Newton was said to have complained that the problem of the Moon’s motion was the only one that made his head ache and this was due, in no small degree to the Tree Body Problem. It troubled him for the rest of his life as neither he nor anyone else he was able to plot the Moon’s position accurately using his method.

Newton’s gravitation theory did not work for the Moon and during his lifetime, contemporary astronomers told him so and disregarded his work, preferring ‘the older tried and tested methods’ of lunar positioning. (maybe these older methods are still used by astronomers to calculate artificial satellite speeds?) However, such was his influence at the Royal Society, that his laws of universal gravitation were ‘enforced’ and remain in place as dogma to this day.

The Newtonian dogma of NASA tells us that: "Newton's first law states that every object will remain at rest or in uniform motion in a straight line unless compelled to change its state by the action of an external force." The problem with this is that there is nothing in the whole universe that is moving in a straight line! A glance at a kids astronomy book is sufficient to convince anyone that everything is in orbit about something else and nothing is at rest and nothing is moving in a straight line. These ideas have been around since 1687 and one would expect an update considering the dogma of the day was geocentric. Reading the work of some scientists I get the distinct impression that they still think the Earth is the centre of the universe?

Without actually being told as much, we are given the impression that Einstein's mathematics would solve all of the problems of lunar gravitation and the Moon's position at a stroke. In fact I found no evidence that Einstein's math' had any part in lunar exploration whatsoever or that it was ever used by NASA. The Moon's true position was unknown until NASA planted a laser reflector on the Moon's surface. It's just another example of the emperors new clothes - if you don't understand how Einstein has revolutionised astrophysics you are stupid!

Einstein's answer to gravity was to exchange cause with effect: Gravity was a field just like magnetism but for Einstein it became a curved space that shepherded the

planets into orbit, rather than a mutual attraction between material bodies. Gravity became a curving (something) of empty space, an attribute that can never be denied because it's undetectable. He never told us what he meant by the word 'space'. 'The fabric of space' is an oxymoron as space is normally considered to be a vacuum - anything but a fabric. Wiki and the quantum mechanical 'Vacuum Energy' tells us that: "The theory considers vacuum to implicitly have the same properties as a particle, such as spin or polarization in the case of light, energy, and so on. According to the theory, most of these properties cancel out on average leaving the vacuum empty in the literal sense of the word." 48c In other words, quantum space is a vacuum, there is nothing to curve and nothing to exert a force on matter.

The difference between the words "properties and attributes" is quite important here but ignored by science. The word "space-time is also a contradiction as we have seen that space according to science is a vacuum and time (discussed in another chapter) cannot be proven to exist - is not a field, is not an energy, is not matter. Such is the metaphysical state of scientific materialism.

And then...

Quantum mechanics is incompatible with general relativity

Gravity Probe B: Testing Einstein's Universe

Special & General Relativity Questions and Answers

What is it about quantum mechanics that is incompatible with general relativity?

As I understand the basic problem, 'Classical' general relativity, which is the theory developed by Einstein in 1915, is a theory where gravitational fields are continuous entities in nature. They also represent the geometric properties of 4-dimensional space-time. In quantum mechanics, fields are discontinuous and are defined by 'quanta'. So, there is no analogue in conventional quantum mechanics for the gravitational field, even though the other three fundamental forces have now been described as 'quantum fields' after considerable work in the 1960-1980s. Quantum mechanics is incompatible with general relativity because in quantum field theory, forces act locally through the exchange of well-defined quanta. 48d

What I suggest is a controlled demolition, an explosion under both the Newtonian and the Einsteinian ivory towers to be replaced with something that works.

The true position of the Neutral Gravity Point is an ideal means to check the universal gravitational theory because there are still apparent problems just as there were in Newton's day. One of these was the three body problem: "In its traditional sense, the three-body problem is the problem of taking an initial set of data that specifies the positions, masses and velocities of three bodies (Earth, Sun, Moon) for some particular point in time and then determining the motions of the three bodies, in accordance with the laws of classical mechanics (Newton's laws of

Einstein's general relativity would do the job; it also obviously didn't work. Of interest: Newton tried to solve the precession paradox or the precession of the equinox, whereby the equinox moves backward through the constellations 50 seconds of an arc annually and again his equations turned-out to be wrong. Newton is not infallible.

It may have come as a surprise to some that, as already mentioned above, prior knowledge of the Solar System, including the Moon, was almost completely abandoned and replaced by knowledge gained with the advent of space exploration. That almost everything written about the Solar System planets and their moons in the 1950's and even later has been thrown overboard and replaced by NASA updates. We need to extrapolate this 1950's lack of knowledge and apply it to the unexplored and inestimably more vast remainder of the cosmos, where we still see the implausible but unwavering certainty of astronomers, physicists and cosmologists of the fifties in today's scientists. They are still absolutely sure they 'know how it all works' with their consensus, single, but all-encompassing theories excluding all others.

What is taught by astronomers is fable and bravado.

STATUS: Confused and seriously considering ignoring all scientific knowledge.

There is an argument on a WikiTalk page that promises to answer all of this, but comes across as being a little lame: Wiki editor Numbskll defends gravity: He says "They appear to be confusing the Moon's sphere of influence and the point at which the Moon's gravitation and Earth's are equal. NASA were concerned with the Moon's sphere of influence, which starts around 40,000 miles from the Moon, and marks the point where the Moon's gravity has more influence on the spacecraft's trajectory than the Earth's. The 'Apollo 16 Flight Journal'[85] comments on this: "we're scheduled to cross that mythical line known as the lunar Sphere of Influence, the point of which we begin calculating the increasing of the lunar gravity on the spacecraft. Our displays here in Mission Control shortly after that point are generally switched over to Moon reference from Earth reference. The velocities that we have been watching decrease steadily up to now, will then begin to increase as the spacecraft is accelerated (by gravity) toward the Moon.." The point where the lunar gravity and Earth's gravity are equal is around 25,000 miles, (from what?) so there's no discrepancy to explain: they appear to be measuring different things."

What (on the Moon) is "the Moon's sphere of influence ?, gravity extends to infinity.

"They certainly are "measuring different things", "they" are working from observations while Numbskll is working from a theory, a formula that will always

give the same result. Something he wouldn't dream of examining for possible error because science no longer knows the difference between theory and actual experience. I've found that even astronomers tend to avoid or just don't acknowledge the point where the influence of Earth and Moon are equal and often confuse it with the Lagrange points as we will see. There is a midway point where the gravity of the Earth and the Moon are equal, but no one wants to talk about it. The reason may be that a TRUE lunar gravity gradient can be calculated from such data.

Numbskll: "Spacecraft from several nations have travelled to or past the Moon, so unless all their space programs are part of the conspiracy, at least one should have told us by now if the mass of the Moon was incorrect. (They all depend on the same theory and are confused just like us, but Numbskll uses the oft used and scientifically sanctioned get out of jail scam – ridicule.)

Similarly, if Lunar gravity was four times as high as generally believed, it would be demonstrable on Earth in unexpectedly large tidal motion."

Numbskull has become totally brain-numb and ludicrous at this point, losing his reasoning powers completely. No, the Moon's gravitational pull on Earth has always been the same. It's the theory that says the Moon's gravitational pull is 6% that of the Earth, ...it's a theory for crying-out-loud. If the theory is in error and needs to be changed to a higher value, changing it will not change Earth-gravity or the tides or the Moon. He thinks theory is real and he cannot compute anything else. Note the circular reasoning used to explain away a genuine enquiry. ...IF the mass of the Moon was incorrect, says it all. Theoretical mass and actual mass can be different values in a real world.

What we find here is something not uncommon to science, it's called 'circular reasoning'; he uses the problem itself (gravitational theory) as the answer to a problem caused by gravitational theory.

Wiki editor Numbskll again: "The Surveyor program Moon landers had an engine thrust of 150 pounds and their landing weight was approximately 660 pounds on Earth. Five of these spacecraft soft-landed on the moon in 1966-68. If the Moon's surface gravity was much larger than one-sixth that Earth's, the spacecraft would not be able to soft-land on the Moon."

Soft landing was one of, if not 'the' most troublesome problem that NASA encountered. Apollo 11 was completely out of fuel on landing.

Surveyor 2, Launched 20 September 1966, crashed on the Moon 22 September 1966

Surveyor 4 Launched 14 July 1967, radio contact lost 17 July 1967 2.5 minutes from touchdown, probably also may have crashed? No fuel?

The Surveyors had long legs equipped with shock absorbers and it was admitted that it would be dropped from a height of 13 feet at the end of the retro' burn. NASA was prepared for a bumpy ride. But why, if there was an altimeter on-board?

Although gravity does depend on planetary and lunar mass, it can also be arrived at from the position of the NP. It should be possible to calculate the position of the NP and it should agree with observation if the theory of gravity is valid, but that seems not to be an option. If the mass of the moon is higher than that calculated by theory it will be observed that the NP does not appear where theory predicts, which is what we are discussing.

The second point is that all such arguments from science-oriented-minds tend to put the logical cart before the horse. The assumption is made that a calculation based on Newtonian gravity theory has to be correct. This is completely missing the point that the theory may be in error, but science treats all such theories in this sacrosanct and decidedly odd manner.

Wiki editor Numbskll says: "The site fails to note that the flight paths of the Apollo crafts were curved, not straight-line, so the neutral point within their flight paths would be significantly larger than the straight-line neutral point range of 22,000-25,000 miles (for illustration, see the bands of gravitational influence in the diagram accompanying Lagrangian point). The 'Time' article's statement would then be equally as true as the early 1960,s 'Britannica'. The statement that the 1973 'Britannica' reported a different figure is currently unverified. The 1966 edition of The World Book Encyclopedia (volume 13, page 650) gives the Moon's surface gravity as one-sixth that of Earth's."

It would be pointless to position a NP on a curved flight path as this would be meaningless in terms of distance between Earth and Moon. Equally ridiculous is the idea that the measured distance Earth/Moon of a lunar mission can be given when the craft makes several Earth and Lunar orbits, there would be no start or end point.

Note: The Lagrangian point is totally different from the neutral point and irrelevant to the discussion. 53 54

The transcribed communication between the three astronauts and Houston.
Apollo 8 Day 3: The Maroon Team
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[Frank Borman, Jim Lovell and Bill Anders are further from the surface of the Earth than any human in history and are only thirteen hours from a rendezvous with Earth's natural satellite as their spacecraft, Apollo 8, begins its fall towards the Moon. Though they don't know it yet, they have just passed another historic milestone by passing a point between the Earth and Moon where the gravity of the two planets balance. Now the Moon is exerting the greater pull as they become the first people to enter the gravitational realm of another world.]

In Mission Control, it is three o'clock in the afternoon, nine in the evening by Greenwich Mean Time. A new shift of flight controllers, the Maroon Team, have just taken over in the MOCR (Mission Operations Control Room) led by Flight Director Milt Windler. Everyone is settling down after a television transmission from the spacecraft during which the crew transmitted a grainy but very recognisable view of the Earth from 325,000 kilometres distance. (201,946 miles distance from Earth) 55 This figure suggests that at the time of the mission the Moon was at the point in its orbit that is closest to Earth; it makes sense to take the shortest route. But why all the discrepancies above?

(Newton and NASA originally said the NP "where the gravity of the two planets balance" was 215,000 miles from Earth)

STATUS: completely discombobulated, 44 years after the first manned Lunar landing mission and 54 years after the first Moon probe at the time of writing. What are we to make of the above? We are told by scientists on an almost daily basis that the public at large does not understand science and that we all need more education in the subject. What kind of education are they talking about? Is it the kind that prevents us from asking why scientists refuse to discuss the neutral point of gravity between the Earth and Moon? Or can it be the kind that stops us from asking why NASA is airbrushing Lunar images? Maybe we will learn why NASA is the only scientific organisation in the world that does not use the SI measurement system and why they don't tell anyone what system they are using at a particular moment in time? Maybe someday they will tell us why they airbrush-out some areas of the Moon?

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A Theory of Almost Everything

Physics

"The difficulty is to me a fatal one; and the fact that when you put it to many scientists, far from having an answer, they seem not even to understand what the difficulty is, assures me that I have not found a mare's nest but detected a radical disease in their whole mode of thought from the very beginning. The man who has once understood the situation is compelled henceforth to regard the scientific

cosmology as being, in principle, a myth; though no doubt a great many true particulars have been worked into it." CS Lewis.

We are all absolutely sure that we know how to think and that ours is the right way or even the only possible way to do so. We were taught from an early age what is real and what is imaginary, good, bad, happy, sad, we are even taught where to find the most reliable information we need and how to use it.

We were taught first by our parents, who went through the same education system, and then at primary school, leading to junior, senior and for many, higher education, our qualifications that enabled us to get a job are often as a direct result of this meritocracy. The notion that what we are taught is a 'belief system' and not an absolute, rarely occurs to us.

Very few of us even bother to reflect on the lifelong process that appears seamlessly to glue the bricks of our society together. Where did it originate and how reliable is it are questions seldom asked as it all appears to work, for some anyway, for others not so well.

But the trust is all but complete when even those at the bottom of the pile will admit that had they absorbed more from the education system they may have fared much better. So deeply ingrained in our childhood is the idea that success depends on education that it is never questioned, even by the failures.

The last thing we tend ask about it is, 'is it just a belief system, or something more profound?' Can something that involves us all be flawed or maybe unreliable and is there room for improvement? Do we need to scrap the whole she-bang and start again?

To endorse a failed system is to perpetuate it and reject change.

The fact of the matter is, that most of what we are taught in the various educational subjects, are completely controlled by academic science. Everything, with the possible exception of the arts is science based, think about it. Maths', English language, cookery, diet, plumbing, computer studies, agriculture, are all done in a 'scientific manner' or are guided by a scientific input. Everything has to be done scientifically or it is somehow deficient and lacking in some respect. The reader is about to see that all of the above is deeply, (scientifically), flawed because the underpinning science is flawed and seriously in need of a major overhaul.

Also in need of examination is the assumption that all of our modern world with its electronic wonders and labour-saving devices that are called science, are thanks to the benevolence of this same academic science and would not exist

without its guiding hand. What if we find that technology is not science?

If it should turn out that academic science is responsible for technology, then we don't have a problem, but if it's not true then the whole basis of our thinking is in question and we have all been misled by those who educated us.

I fear that on examining that which is rarely examined, we will find holes, a science that is filled with things that have no existence in the real, natural, world and things that are claimed as their own by scientific academics, who have no right to them.

As we explore these pages, we will ask questions about such old assumptions and test their validity.

If we are to look closely at science, then what better place to start than those who are considered to be 'the crème de la crème of the scientific crop', the physicists.

Physics

Until around the 1930's, the test of the success of any physics theory was always by way of a useful technology that it produced. Most of the electronic technology that we use today was devised in its basic form prior to this date. It is no coincidence that the rise in the theories of Albert Einstein, although they were formulated much earlier, roughly correspond to this date that also marks a watershed in electronic genius and ingenuity. But we will return to this later.

Today there seems to be no need for any useful technology inspired by physics and the physicist is on a wild foray into theoretical realms of imagining mathematical fantasies that provide jobs for mathematicians and little else. Theories are all-important to academics and the rest of us just foot the bill for the 'Emperor's New Clothes', not wanting to appear to be ignorant.

Too few doubt or ask questions.

I have a magazine before me at the time of writing, with a 'Readers Letters' writer complaining about an article in a previous issue of the same magazine, that criticises the Large Hadron Collider.

It is assumed that such things are above criticism.

It discusses the unlikelihood of it ever producing anything of practical use, whilst comparing it with the grandeur of a medieval cathedral, something built for effect rather than utility. The complaining letter writer also proudly tells us that "it was CERN that gave us the Internet", this is a little like saying that it was the BBC who gave us television or that the transistor is thanks to quantum physics. The Internet was up and running long before Tim Berners-Lee did whatever it was that he is supposed to have done and the transistor was around long before its 'official' inventors. This is something that will deserve close scrutiny in a later chapter.

Some real supporting evidence to justify the existence of modern physics would be welcome, but don't hold your breath, it will not come from physicists who shun reality, their heads buried in the sand of numbers and theory.

De-mystifier: The Large hadron Collider
en.wiki tells us:

"A particle accelerator [Like the LHC] is a device that uses electric fields to propel charged particles to high speeds and to contain them in well-defined beams. An ordinary CRT (cathode ray tube) television set is a simple form of accelerator. There are two basic types: electrostatic and oscillating field." 15

The television cathode ray tube (CRT) is the old glass type used in pre flat screen TV. The particle accelerator is a development of the old TV tube and not the other way round. This in turn, was a development of the original Crookes Tube, invented by Sir William Crookes, (1832-1919). He was a chemist and occult researcher and not an academic physicist. He was an amateur physicist and if you ask a physicist today, they will call him a tinkerer, a derogatory remark suggesting a lack of skill. The amateur physicist no longer exists, today he would be considered an outsider, unqualified, a pseudo-scientist. Also, being a researcher in spiritualism compounds Crookes's crimes against science, confirming his unscientific status but not able to deny his genius as the inventor of the original particle accelerator.

And so we have The Large Hadron Collider (LHC), the very pinnacle of scientific achievement, that is based on the work of a 'pseudo-scientist', who spoke to the departed and embraced the physical theory of Ether, something that has been debunked for a hundred years by what we now know as modern science. The likelihood of cognitive dissonance (there never were more conflicting ideas) among physicists is quite high as none of this has been satisfactorily resolved. We all spend our lives living happily alongside working technology that is based on taboo and debunked science, the majority of which was conceived and invented a hundred or more years ago by those who have been excluded by modern science. It is against this backdrop of confusion and perplexity within the science that underpins our lives and our society that we continue our examination.

$E=mc^2$ passes tough MIT test

What follows is claimed to be proof that the path that physics is treading is a worthwhile pursuit. The quantities measured are so infinitesimally small that the whole thing stretches credulity to its innermost limits.

The theory states that mass and energy are equivalent (equal) ($E=mc^2$) and the experiment attempts to show that this is true, but as we will see later, nature has

other ideas.

Don't worry if you don't understand the following you are not alone, and all will be explained. 16

MIT News

web.mit.edu:

E=mc² passes tough MIT test

Elizabeth A. Thomson, News Office, December 21, 2005

"The mass loss was obtained at MIT by measuring the difference between the mass of the nucleus before the emission of a gamma ray and after. The mass difference was measured by comparing the cyclotron orbit frequencies of two single molecules trapped in a strong magnetic field for several weeks.

Pritchard notes that the mass of the nucleus is about 4,000 times larger than the much smaller mass difference. As a result, "determining the mass difference requires the individual masses to be measured with the incredible accuracy of one part in 100 billion -- equivalent to measuring the distance from Boston to Los Angeles to within the width of a human hair!"

Despite the results of the current test of E=mc², Pritchard said, "This doesn't mean it has been proven to be completely correct. Future physicists will undoubtedly subject it to even more precise tests because more accurate checks imply that our theory of the world is in fact more and more complete." 17

There are those who take the word of physicists without question and there are those who don't. It is at this point that we are all supposed to say, 'err, OK', and leave with heads spinning and slightly bowed, but it is really all meaningless gobbledegook. It is meant to make physicists look smart and the rest of us poor plebs appear to be idiots. Physics and modern art are much the same, depending on a plausible-sounding story to evoke a seeming credibility.

The C in E=MC² refers to the speed of light, a statistical measurement with the speed element dependent on time. Unfortunately time is something never actually proven to exist by any scientific standard and is nothing more than a convenient idea that has, admittedly, been around for millennia. We begin to see the first hole in what will become a logical Swiss Cheese of a science of unreality that measures things that do not exist with incredible exactitude.

Why is it seemingly so easy for so many to laugh at the UFO phenomenon witnessed by millions? Yet, they take seriously the ever more fantastical claims of physicists, things too far away or too small, or too large to see, or even universal in scale. The black hole, dark matter, dark energy, gravity waves, not observed by anyone. No one questions the one part in 100 billion MIT test?

Is Time Real?

The concept of time as something we move in or through is crucial to the survival of physics as a bona fide scientific discipline, but there never has been a scintilla of evidence to show that time even exists. The speed of light, for example, depends on time and without time as an entity it becomes a meaningless and inconstant number.

en.wiki tells us that:

"Time has been a major subject of religion, philosophy, and science, but defining it in a non-controversial manner applicable to all fields of study has consistently eluded the greatest scholars. A simple definition states that "time is what clocks measure", nothing more." 18

And so, a strong argument can be made in support of the idea that time does not exist, except in the form of numbers, measurements and movements made by the fingers and digits of a clock.

Time was originally, historically, measured by the rotation of the Earth, day/night being its simplest and earliest terms. Ancient astronomers (the term is used because time is an observation of the heavenly bodies) made ever more subtle measurements -years, months (by the Moon), hours, minutes, and seconds. Observations of the Sun's position on the horizon gave us years and this was divided into twelve months and the months into seven day weeks. All of this based upon the angles of the Earth's rotation and the angles of the Earth's position with regard to its orbit about the Sun and the phases of the moon.

Time was originally the movement of the Earth with reference to its surrounding Solar System bodies.

Time can therefore be described as movement. There is nothing, scientific or philosophical, that can logically refute this view.

thefreedictionary.com:

MINUTE

"n. Abbr. min.

1. A unit of time equal to one sixtieth of an hour, or 60 seconds.
2. A unit of angular measurement equal to one sixtieth of a degree, or 60 seconds. Also called minute of arc."

SECOND

n. Abbr. sec.

1. A unit of time equal to one sixtieth of a minute.
2. A brief interval of time; a moment. See Synonyms at moment.
3. Abbr. s Mathematics A unit of angular measure equal to one sixtieth of a minute." 19

It's no accident that the terms for time and movement through angles are alike:

Arc minute, Arc second

Wiki:

"A minute of arc, arc minute, or minute arc (MOA), is a unit of angular measurement equal to one sixtieth ($1/60$) of one degree. In turn, a second of arc or arc second is one sixtieth ($1/60$) of one minute of arc. Since one degree is defined as one three hundred and sixtieth ($1/360$) of a rotation, 1 minute of arc is $1/21,600$ of the same. It is used in those fields which require a unit for the expression of small angles, such as astronomy, navigation and marksmanship." 20
This is no different to the method used for time measurement.

en.wiki:

"The opposing view is that time does not refer to any kind of "container" that events and objects "move through", nor to any entity that "flows", but that it is instead part of a fundamental intellectual structure (together with space and number) within which humans sequence and compare events. This second view, in the tradition of Gottfried Leibniz and Immanuel Kant, holds that time is neither an event nor a thing, and thus is not itself measurable nor can it be travelled." 21

An overwhelming case can be made that time has no objective existence, does not exist and that its only reality is derived from the mathematical, angular measurements of the movements of Solar System bodies.

If we say that time is movement, then something like the speed of light comes out as: Light travels 186,000 miles while the Earth's rotation moves through an angle that represents one second. Or $1/86,400$ th of 360 degrees or 0.0041666 degrees of a day and night. When making assumptions about time we are comparing a linear movement with an angular movement.

Many just do not understand this alternative position or refuse to try, due to the influence of science-based education and the need for a measurable time-scale to support scientific theory. Time is movement and there is nothing else in nature that can represent it.

Note: The writer does not subscribe to the idea of the abandonment of time, which is a useful concept to get us to work on time in the morning. It's fine as long as the reader understands that time does not exist in any way or form suggested by the metaphysical claims of academic scientific physics. It is a Santa Clause that gets the kids to sleep on Christmas Eve, or the tooth fairy.

Atomic Clocks

Hafele-Keating Experiment

hyperphysics.phy-astr.gsu.edu:

"In 1971, experimenters from the U.S. Naval Observatory undertook an experiment to test time dilation . They made airline flights around the world in both directions, each circuit taking about three days. They carried with them four caesium beam atomic clocks. When they returned and compared their clocks with the clock of the Observatory in Washington, D.C., they had gained about 0.15 microseconds compared to the ground based clock." 22

THE POLITICS OF KNOWLEDGE

electromagnetism.demon.co.uk:

"Louis Essen, elected FRS for developing the Caesium (Atomic) Clock, wrote to Nature that the alleged confirmation of Relativity by the gentlemen who took Caesium Clocks round the world by airplane was bogus because the caesium clock did not have the claimed accuracy. Nature refused to publish, preferring the PC 'confirmation' of relativity to stand." 23

Science tells lies and Essen is obviously not one of the inner sanctum of faceless, nameless and enlightened physicists who understand the perfect scam, the magical, metaphysical production of infinitesimally small or large, incredibly, 'accurate' numbers from numbers that are statistically generated or based upon the non-existent.

Every clock depends on a tick/tock, be it by pendulum, spring escapement or quartz crystal, to keep time and the more accurate the tick, the more accurate the clock. The atomic clock has an extremely accurate tick/tock synchronised with the Caesium 133 atom.

Unfortunately, it is necessary to establish the length of a second before one can calibrate an atomic clock. In other words, the Caesium 133 atom used in the clock does not oblige by giving a tick/tock that is an exact match to, or fraction of a second. And so, the standard second has to be determined beforehand to calibrate the atomic clock. No magical second appears in the clock itself, this is done by returning to the original method, ancient and hoary with age, the positions of the Sun, Moon, planets and stars and the second obtained by the angle of Earth's rotation is called 'ephemeris time'. Ephemeris time however, does not correspond to anything in nature.

Blinded by complexity

infoplease.com:

"By convention, the standard seasonal year is taken to be A.D. 1900 and to contain 31,556,925.9747 sec of ephemeris time. In 1984 ephemeris time was

renamed terrestrial dynamical time (TDT or TT); also created was barycentric dynamical time (TDB), which is based on the orbital motion of the sun, moon, and planets. For most purposes they can be considered identical, since they differ by only milliseconds, and often therefore are referred to simply as dynamical time." 24

The Earth's rotation and orbit varies, and we are told that this is inadequate for the purposes of atomic timing and so atomic time was based on the second in the year 1900; but this is not in accord with the Earth's position at the present. The time given by atomic clocks is unsuitable for measuring anything on Earth because it measures time as it was in 1900 and would need to be calibrated for today's second. The writer is not quite sure where this leaves us, apart from having a meaningless atomic time-scale and a headache.

The Stanford University website admits:

"...Finally, as Einstein noted "Space and time are modes in which we think, not conditions in which we exist" which is a view also expressed in 900 AD by the Arabic physicist Ikhwan al-Sufa, "Space is a form abstracted from matter and exists only in consciousness". 25

Seemingly, Einstein and Ikhwan al-Sufa together have demolished the concept of space/time with the blessing of Stanford University as obviously they know that time is just a mode of thinking.

The writer would like at this point, to ask how a theory of space-time physical properties can possibly be constructed from the "modes in which we think" or something that "exists only in consciousness", and how such an idea finds a place in a materialistic, mathematical, evidence based, empirical science?

A mathematical quantity needs to be represented by something tangible and material to fulfil the claims of modern science.

John Gribbin, 'Companion to the Cosmos':

"One of the greatest mysteries in science is the distinction between the past and the future. At a subatomic level, neither the old ideas of classical mechanics nor the modern theory of quantum mechanics distinguish between the past and the future" 26

The reasoning on the web page at the link below 'What is Time?' depends on a not unusual, illogical, circular argument so common in academic science: The premise (time exists) is assumed to be true in the complete absence of any supporting evidence.

Evidence is carefully chosen in support of the 'attributes' - of things with no

proven existence.

The attributes take on a pseudo-life of their own while never proving the existence of the premise.

If there is no direct testable evidence in support of the reality of time then all arguments are untested, untestable and invalid.

It's important to distinguish between an attribute and a property of time as time has no properties apart from those ascribed.

Quote from the link: What is Time?

thekeyboard.org.uk:

"In order to investigate the nature of time it may help to break it down into four main questions.

1) How does time flow? ('Flow' is an assumed attribute unobserved and unobservable)

2) Does time flow in only one direction? ('Direction' is an attribute of the attribute 'flow')

3) Is there a constant 'Universal' time? ('Universal' is an assumed attribute.)

4) Is time a 'real' dimension?" (Not outside-of metaphysical mathematics.) 27

It is a common assumption that we 'move' into the future, again, making time into movement.

Time has no properties that can be demonstrated in a lab.

The phrase 'the fabric of time' is a contradiction because time cannot be described as a fabric, being something beyond the material, in fact insubstantial, not substance, not fabric, not real in any empirical scientific sense.

The work of Professor Stephen Hawking relies heavily on the time concept and I wrote to him recently asking for his comments after being invited to do so on his website.

His reply, or one written for him:

hawking.org.uk:

"He very much regrets that due to the severe limitations he works under, and the enormous number of requests he receives, he is unable to compose a reply to every message, and we do not have the resources to deal with many of the specific scientific enquiries and theories we receive." 28

I was expecting such a prominent figure to jump at the opportunity to show just how much is known about a subject so close to his heart – but no, not a word about "Is time real"? Could it be that he has no answer? He would be without a job were he to agree. And so, I must assume he only replies to true believers who hang on his every word and do no thinking of their own.

I challenge any physicist to prove empirically that time exists as an entity, a

container, or something within which we or even the universe exists.

Failure to do so can only portray the work of Hawking and even that of Einstein as merely metaphysical folderol, a fantasy that can be likened to The Emperors New Clothes.

Light speed

en.wiki and others:

"In 1973 the speed of light was measured by Evanson et al at $299,792.4574 \pm .001$ and then in 1983 it was tied to the meter length at $299,792.4575$ for the sake of convenience and because so many differing results were being obtained." 29

The speed of light was measured by so many scientists, all obtaining different results, that it would be tedious for the reader were I to list them. It was finally agreed to represent the speed of light with a statistical value. We can see that measuring "E=mc² to one part in 100 billion, equivalent to "measuring the distance from Boston to Los Angeles to within the width of a human hair!" is more than a little fanciful when c is not known to any such accuracy and the certainty that the time element in the speed of c is no more than a fantasy.

The Standard Metre

scientificamerican.com:

"The meter bar lasted a good long time; but it became cumbersome and error-prone to refer to a specific, physical meter bar. Finally, after 71 years, a new standard emerged. In 1960 the General Conference on Weights and Measures redefined the meter in terms of the number of waves of a very precise color (wavelength) of light emitted by krypton 86 atoms. That revision did not last so long. In 1983 the Conference discarded the krypton standard and redefined the meter in terms of the speed of light--what might be called a theoretical definition. The meter is now officially $1/299,792,458$ the distance travelled by light in a vacuum in one second." 30 31

The metre is therefore defined by a light-speed that is also a statistical measurement in metres-per-second, the second derived from the second of 1900 that is no longer valid for Earth-bound measurements; circular or what? Circular thinking works because circular thinking works because.....

Relativity Einstein and Arthur Eddington

Back in the early 1900's, when such things were new, Eddington was asked if it was true that only three persons in the world understood Einstein's Relativity, Arthur Eddington is said to have replied, "I wonder who is the third"? He was a bit of a wag.

Einstein later remarked that after the mathematicians had gotten a hold on his

theories he did not understand them himself. And so, we seem to have been left with Eddington alone who understood, and when he died he took the secret with him. The physicists of today are still not in agreement as to what Einstein said or the meaning of the mathematics, as we will see.

In the far distant past, it must have been obvious to most that the Sun travels around the Earth. But, at some point in history, due to problems with astronomical observations, it was agreed by most that the Earth and the planets did indeed orbit around the Sun; it made calculations and understanding so much easier and it was logically acceptable. This is an example of something not immediately, intuitively obvious, becoming accepted as factual and literal.

Compare Relativity Theory: something that is still disputed among the "experts" even after a hundred years of continuous study. Claimed at the outset, first by Eddington and later by others, to be counter-intuitive and 'only accessible to those few who understand it'. We are still waiting to be told who they are, because they disagree with one-another. Some of us have the feeling that we are being led up the garden path, by something not intuitively correct and not logically acceptable, making understanding more complex or seemingly impossible. The plain fact presents itself, that the physicists are incapable of explaining just how it all works to the rest of us because they are unsure of how it works and don't agree among themselves. Becoming a physicist does not endow one with superhuman qualities and a request for an explanation to those non-physicists with equal intelligence is not unreasonable after a hundred years.

So Far

Both the speed of light and the metre are statistical measurements and are used here to determine mass (M) based on the theoretical $E=MC^2$. (the speed of light being the 'C' and M the mass in the equation).

The question arises: How can a measurement of one part in 100 billion be made when the accuracy of the speed of light, not to mention the length of the standard metre are so much less accurate? Let's also throw-in the non-existence of time.

Maybe a physicist would care to enlighten us?

Wiki and cs.princeton.edu:

"COLLOQUIUM ON PATHOLOGICAL (Mad) SCIENCE

by Irving Langmuir (1881 1957)

Symptoms of Pathological Science:

1. The maximum effect that is observed is produced by a causative agent of barely detectable intensity, and the magnitude of the effect is substantially independent of the intensity of the cause.
2. The effect is of a magnitude that remains close to the limit of detectability; or,

many measurements are necessary because of the very low statistical significance of the results.

3. Claims of great accuracy.

4. Fantastic theories contrary to experience.

5. Criticisms are met by ad hoc excuses thought up on the spur of the moment.

6. Ratio of supporters to critics rises up to somewhere near 50% and then falls gradually to oblivion." 32 33

Irving Langmuir invented of the term 'Pathological Science' around 1953, now it is applied to anything that a particular scientist or group of scientists find inconvenient in the face of the prevailing paradigm. In other words, anything that contradicts the word of an academic scientist or evidence that a scientific theory may be wrong is madness. If you keep on repeating this, you may start to believe it. This must be the most supreme example of unashamed arrogance in the history of the world.

It must have been at this point (in the 1950's), when science realised that it was very good at doing something, namely, debunking ideas that come from outside of the fraternity with words like pathological and pseudo-science.

Charles Fort commented years ago that science must make the ideas of outsiders seem unreal in order to make its own ideas seem more real, a kind of universal law, or an exchange if you will?

At least five of the six pathological symptoms given by Langmuir can be applied to the MIT measurements above and the same applies to the general and special relativity theories themselves. Madness it seems, is relative and only applied to non-scientists.

Is the claim that mass is converted into energy in the form of radioactivity true? Science has always taken it for granted that the decay of radioactive material proceeds at a fixed rate and that this is so reliable that it can be used to fix the dates of paleontological artefacts. Again, a universal, but unproven, time-scale.

The following articles look at a more realistic experiment than the MIT test above, with surprising results. I've been told by scientists that the Eckhard Dieter Falkenberg paper below cannot be verified, but even so, if someone else did this experiment it would be worthy of further attention. And then, I found the Russian paper and more recently a third and then a fourth, all relating to the same doubt about atomic theory...

What is quite amazing about these findings is that they also seem to lend themselves to an, as yet, unsuspected power source and the possibility of energy

generation. New and exotic energy sources are something that seem to have become anathema to the modern science of physics.

Science likes to give the impression that it knows all there is to know about energy and further, that an unknown energy is impossible. It follows that if there were to be an unknown energy source, science would be without any means of detection because it does not possess alternative energy detectors. It maintains this stance, and this has the effect of blocking any possible new energy discovery with a by-default denial.

According to the information below, it is not beyond the realms of possibility that if the energy of radioactive elements (that drive atomic reactors) is the result of cosmic rays, then there is a potential to tap that same energy in other ways.

Nikola Tesla

todayinsci.com and Wiki:

After almost one hundred years science has failed to catch-up with Nikola Tesla who predicted these things. Speaking of cosmic rays in 1931, Tesla said:

"I have satisfied myself that the [cosmic] rays are not generated by the formation of new matter in space, a process which would be like water running up a hill. Nor do they come to any appreciable amount from the stars. According to my investigations the sun emits a radiation of such penetrative power that it is virtually impossible to absorb it in lead or other substances. ... This ray, which I call the primary solar ray, gives rise to a secondary radiation by impact against the cosmic dust scattered through space. It is the secondary radiation which now is commonly called the cosmic ray, and comes, of course, equally from all directions in space. [The article continues: The phenomena of radioactivity are not the result of forces within the radioactive substances but are caused by this ray emitted by the sun. If radium could be screened effectively against this ray it would cease to be radioactive, he said.] " 34

—Nikola Tesla

Apeiron, Vol. 8, No. 2, April 2001 32

Radioactive Decay Caused by Neutrinos?

Eckhard Dieter Falkenberg

Uhldingen, Germany

"The result of a long-term experiment is presented and discussed. The experiment aimed at testing the hypothesis that radioactive b-decay might be caused by the omnipresent neutrino flux coming from the sun and other sources, by trying to find a positive correlation between the decay rate of tritium and the annually varying solar neutrino flux, due to the annually changing distance from sun to earth." 35

What was found, during this quite long-term experiment was that the 'radioactive b-decay' varied according to the time of year, it was seasonal, at odds with the prevailing atomic theory that tritium and other radioactive substances are unaffected by outside influences and decay according to a universal time-scale. The assumption that the variation is due to annually varying neutrino flux is just that, an assumption on the part of the experimenter. The neutrino was not known in Tesla's day.

Previously. Summer 2000:

21st Century Science & Technology - Russian Discovery Challenges Existence of Absolute Time

by Jonathan Tennenbaum

21stcenturysciencetech.com:

"Russian scientists discover unexpected regularities in radioactive decay, linked to astronomical cycles..."

(There is certainly an element of Astrology taboo here that will bolster the sceptics case for more exclusion based on prejudice.)

"...Moreover, these periodical changes correlate with the changes in our solar system, and possibly in our universe. To evaluate properly this phenomenon we first ought to understand the cause and mechanism of the first phenomenon."

The authors do not suggest any explanation of the phenomena discussed, and make no hypotheses concerning their possible mechanisms, and quite rightly so! The reader must start thinking on his own, which certainly is the main intent of this publication." 36

Also the intent of the writer of these pages.

And recently, this effect has become so "in your face" to physicists that what seems to be that a damage limitation process has been initiated. I predict that tame researchers will produce null results in equal numbers to those with positive results and the whole thing will be waved away, not unlike the fuss about cold fusion - time will tell?

Is the Sun Emitting a Mystery Particle?

Analysis by Ian O'Neill

Wed Aug 25, 2010 02:21 PM ET,

discovery.com:

"But what if a well-known -- and apparently constant -- characteristic of matter starts behaving mysteriously?

This is exactly what has been noticed in recent years; the decay rates of radioactive elements are changing. This is especially mysterious as we are talking

about elements with "constant" decay rates -- these values aren't supposed to change.

School textbooks teach us this from an early age.

This is the conclusion that researchers from Stanford and Purdue University have arrived at, but the only explanation they have is even weirder than the phenomenon itself:

The sun might be emitting a previously unknown particle that is meddling with the decay rates of matter. Or, at the very least, we are seeing some new physics."

37

The strange case of solar flares and radioactive elements

This story is from the Aug. 23, 2010 issue of Stanford Report.

symmetrymagazine.org and en.wiki:

"When researchers found an unusual linkage between solar flares and the inner life of radioactive elements on Earth, it touched off a scientific detective investigation that could end up protecting the lives of space-walking astronauts and maybe rewriting some of the assumptions of physics...

Ephraim Fischbach, a physics professor at Purdue, was looking into the rate of radioactive decay of several isotopes as a possible source of random numbers generated without any human input. (A lump of radioactive cesium-137, for example, may decay at a steady rate overall, but individual atoms within the lump will decay in an unpredictable, random pattern. Thus the timing of the random ticks of a Geiger counter placed near the caesium might be used to generate random numbers.)

As the researchers pored through published data on specific isotopes, they found disagreement in the measured decay rates – odd for supposed physical constants. Checking data collected at Brookhaven National Laboratory on Long Island and the Federal Physical and Technical Institute in Germany, they came across something even more surprising: long-term observation of the decay rate of silicon-32 and radium-226 seemed to show a small seasonal variation. The decay rate was ever so slightly faster in winter than in summer.” 38 39

The writer at the following link heaps negativity upon the very idea that something could possibly be amiss with physics theory and then congratulates Fischbach for his audacity. This is called 'playing it safe'. Not exactly the free spirit of exploration - more to do with the usual navel contemplating, inward looking attitude that has become so common in scientific circles, fear of ridicule by peers and a general reluctance to show enthusiasm for anything new.

"The Sun Influences the Decay of Radioactive Elements"

news.softpedia.com:

"Researchers at the Purdue University now contest the idea that the constant exist, basing their claim on a series of experiments which show the existence of disagreements in the measured decay rates of various radioactive isotopes.

The new data, proposed by Purdue physics professor Ephraim Fischbach, was tested and confirmed by teams at the US Department of Energy's (DOE) Brookhaven National Laboratory, and the Federal Physical and Technical Institute, in Germany,

These two labs also found that small seasonal variations existed in the decay rates of the chemical elements silicon-32 and radium-226.

Researchers here found that decay rates during the summer season were slightly faster than those present during winter." 40

Heat and Radioactivity: History

William Corliss

science-frontiers.com:

"Thirty years ago, Otto Reifenschweiler was searching for a compound which could protect Geiger-Mueller tubes from damage when they are first ionised. He found the compound, which became a money-spinner for Philips, in a mixture of titanium and radioactive tritium. He also discovered that as the mixture was heated, its radioactivity declined sharply. No process known to physics could account for such a baffling phenomenon: radioactivity should be unaffected by heat. Nevertheless, as the temperature increased from 115C to 160C, the emission of beta particles fell by 28%." 41

Something not quite right with the atomic theory, that casts doubt on the validity of a universal time and throws a large spanner in the works of radiometric rock dating?

The theory of radioactivity is assumed to be true - it has to be true - but no one has bothered to check. A clean power source has been waiting to be researched for a hundred years and not one of our brave scientists has dared to look beyond the wall erected by those who receive funding from the 'interests' who provide support for non-research and thereby retain the status quo.

Gravity

Newton's First Law

The continuing theme that science makes it up as it goes along and ignores nature, is evident in the following:

First we have NASA, and one would think that they would know how things move in space when considering Newton's First Law.

NASA

grc.nasa.gov:

"Newton's first law states that every object will remain at rest or in uniform motion in a straight line unless compelled to change its state by the action of an external force. This is normally taken as the definition of inertia." 42

A cursory glance at a kid's popular astronomy book will show that things in space certainly do not move "in a straight line". Everything out there moves in an orbit and everything orbits something else. The only possible place where this is likely not to apply is outside of the universe, where no one even knows if the laws of physics (whatever they are), apply.

At any point within the universe, an object is subjected to the forces of the surrounding universe and will describe an orbit.

The dogma is forced into young minds at an early age:

physicsforkids.com:

"You can see good examples of this idea when you see video footage of astronauts. Have you ever noticed that their tools float? They can just place them in space and they stay in one place. There is no interfering force to cause this situation to change. The same is true when they throw objects for the camera. Those objects move in a straight line. If they threw something when doing a space walk, that object would continue moving in the same direction and with the same speed unless interfered with; for example, if a planet's gravity pulled on it (Note: This is a really simple way of describing a big idea. You will learn all the real details - and math - when you start taking more advanced classes in physics.)." 43

The tools that float are moving with the spacecraft in orbit and a planet's gravity is pulling on them. They will not "continue moving in the same direction" when thrown", because they will orbit the Earth. Learning "all the real details" is apparently not an option.

All of this is not meant to prove that Newton was wrong - yet, just that he has been misinterpreted by modern academic science. He said that an object will move with a uniform motion; a uniform motion is an orbit and any calculation based on a straight line is likely to be wrong.

This is not new, see en.wiki:

"Buridan also maintained that impetus (inertia) could be not only linear, but also circular in nature, causing objects (such as celestial bodies) to move in a circle."

44

Inertia was once thought to be a property of matter, but this was dropped by modern science, although science does accept that empty space has properties

since Albert Einstein.

"Every body continues in its state of rest or uniform motion in a straight line, except insofar as it doesn't."

The mystical Arthur Eddington again.

Peter Bros: sciencedoubts.com:

"Newton never succeeded in his proof of universal gravitation. Subsequent attempts by his intellectual heirs had to be abandoned when the orbits of planets were found to present greater discrepancies than existed with Newton's use of the Moon's orbit.

The failure has left an unproven proposition at the heart of modern science. Instead of abandoning a failed hypothesis, however, science now assumes Newton's universal gravitation as fact. Science then uses this to predict the mass of planets and stars, predictive facts that are not independently verifiable, perpetuating a proposition that has never been, and never can be tested. Newton's ideas that white light is made up of all colours and that colours are specific wavelengths that emerge from the prism in descending order are propositions -like mass/gravity- as incapable of proof today as they were in his day.

The British Empire Newton helped create collapsed in the twentieth century but Newton's ideas-which Montagu promoted as infallible in order to establish the monetary basis of empire and which Newton viciously perpetuated by bludgeoning all dissent, remain both omnipresent and baseless-the invisible, unquestioned, and ultimately non-existent pillars upon which all scientific thought rests." 45

"Newton, Alchemy, and the rise of the British Empire",

"The mystical foundation of empirical science".

Peter Bros

Newton's gravitation theory did not work and during his lifetime, it failed to plot the position of the Moon. Contemporary astronomers told him so and they disregarded his work, preferring the older and more reliable methods. However, such was his influence at the Royal Society, that his laws of universal gravitation were 'enforced' and remain to this day.

There are still problems:

wisegeek.com:

"Around the late 19th century, astronomers began to notice that Newton's law did not perfectly account for observed gravitational phenomena in our solar system, notably in the case of Mercury's orbit. Albert Einstein's theory of general relativity, published in 1915, resolved the issue of Mercury's orbit, but it has since been

found to be incomplete as well, as it cannot account for phenomena described in quantum mechanics." 46

We will encounter real life problems with gravity and the non-response of science to something so central to its credibility in a later chapter. It seems that the quote above is something of an understatement.

Einstein's answer to the perihelion advance of Mercury has been challenged and the effect attributed to the non-spherical shape of the Sun and various other causes, not least that he was not the first to suggest the theory...

alternativephysics.org:

"...using only Newtonian gravitation plus the reasonable assumption that gravity propagates at light-speed, (Paul) Gerber calculated the correct result. Given that classical mechanics can fully account for the missing precession, in what way can we say that the precession proves GR theory instead of Gerbers calculation? Here there is no need for the relativity calculation. It is also important to note that Gerbers paper was published 17 years before the GR papers and thus developed independently of GR." 47

It's all a bit of a mess and, as we can see from the link below, direct measurement is still the most reliable method to determine the position of the Moon (and presumably the rest of the Solar System planets) in its orbit.

En.wiki:

"The most significant improvement of position observations of the moon have been the lunar laser ranging measurements, obtained using earth-bound lasers and special retro-reflectors placed on the surface of the moon." 48

We will be looking at this in more detail in a later chapter.

New physics, technology on sale, in the shops?

In a recent exchange with a senior physicist, the author of these pages was accused of criticising theoretical physics as if it were 'the application of physics', something he rightly thought to be quite different. This would be fine if there were anything new to apply, but the only applications that I personally can think of are applications of physics that are a hundred years old.

I throw out a challenge to all of those who swoon in admiration of science: To name me one NEW concept (not a development of and old one,) that led to something useful, that is on sale in the shops, and that is the result of modern physics and scientific method and has been newly discovered in the last twenty years and then another in the last thirty years. I know of none, although I have searched in my own disbelief that such a thing could possibly be true, but it seems to me that it is true.

Parallel and equally unbelievable to me, although probably part of the same hypnotic phenomenon is that of new motor vehicles, and how marketing describes them as so much more advanced than last years model. As an engineer, the author knows that cars have not changed in their basics in almost a hundred years, just like physics, but everyone thinks that they have, just like physics. There are changes of a cosmetic, electronic and safety nature, agreed, but an engineering drawing of a 1920's car engine is strikingly similar to one of today. The same applies to gearbox, clutch, brakes and transmission all invented a hundred years ago or more. Science also cashes-in on the marketing, advertising industry that seems to be the only activity with any new ideas. I have nothing but admiration for advertisers, who year after year reinvent the same old technology. We must also not forget the evergreen Hollywood "Scientist Saves the World" scenario. I know of no example of this actually happening although I can point to one or two disasters.

'The new lab' will do so much more than the old one', as will the new LHC do more than those that went before, it "may help scientists to understand the creation of the universe" or it may not. It's all advertising and little ever transpires that is of any practical use. Practical utility is something that theoretical science retreats further from with every passing year.

And so, there is no modern applied physics because there is nothing new to apply; just jam tomorrow, pie-in-the-sky, advertising hype. A kind of hypnotic suggestion that causes us to see scientific advances when they are only promises and speculation. Scientific 'presentism' is responsible for these misconceptions where everything under the Sun is attributable to recent, modern, academic, scientific research. Even relatively modern science history is treated as if it were a time of dark ignorance.

perceptions.couk.com:

"physics is the only subject in the university curriculum in which the first year's study rarely gets beyond what was known in 1900." 49

The GPS Problem

It's a popular misconception that Einstein's relativity theories have been proven many times. The in-vogue idea being, that the operation of the Global Positioning System (GPS) is a living proof that relativity is a real effect.

Every so-called proof has historically been riven with controversy and GPS is no exception. Some physicists were sure that GPS would not work because of relativistic effects, others now insist that it's because of relativistic effects that it

does work. What this seems to show is that they are just as much in the dark as the rest of us?

For more on this:

Rethinking Relativity by Tom Bethell

...."To offset these two effects, the GPS engineers reset the clock rates, slowing them down before launch by 39,000 nanoseconds a day. They then proceed to tick in orbit at the same rate as ground clocks, and the system "works." Ground observers can indeed pin-point their position to a high degree of precision. In (Einstein) theory, however, it was expected that because the orbiting clocks all move rapidly and with varying speeds relative to any ground observer (who may be anywhere on the Earth's surface), and since in Einstein's theory the relevant speed is always speed relative to the observer, it was expected that continuously varying relativistic corrections would have to be made to clock rates. This in turn would have introduced an unworkable complexity into the GPS. But these corrections were not made. Yet "the system manages to work, even though they use no relativistic corrections after launch," Van Flandern said. "They have basically blown off Einstein."

The latest findings are not in agreement with relativistic expectations. To accommodate these findings, Einsteinians are proving adept at arguing that if you look at things from a different "reference frame," everything still works out fine. But they have to do the equivalent of standing on their heads, and it's not convincing. A simpler theory that accounts for all the facts will sooner or later supplant one that looks increasingly Rube Goldberg-like. I believe that is now beginning to happen."

Dingle's Question:

"University of London Professor Herbert Dingle showed why special relativity will always conflict with logic, no matter when we first learn it. According to the theory, if two observers are equipped with clocks, and one moves in relation to the other, the moving clock runs slower than the non-moving clock. But the relativity principle itself (an integral part of the theory) makes the claim that if one thing is moving in a straight line in relation to another, either one is entitled to be regarded as moving. It follows that if there are two clocks, A and B, and one of them is moved, clock A runs slower than B, and clock B runs slower than A. Which is absurd.

Dingle's Question was this: "Which clock runs slow? Physicists could not agree on an answer. As the debate raged on, a Canadian physicist wrote to Nature in July 1973: "Maybe the time has come for all of those who want to answer to get together and to come up with one official answer. Otherwise the plain man, when he hears of this matter, may exercise his right to remark that when the experts

disagree they cannot all be right, but they can all be wrong."

The problem has not gone away.

Alan Lightman of MIT offers an unsatisfactory solution in his *Great Ideas in Physics* (1992).

ldolphin.org:

"[T]he fact that each observer sees the other clock ticking more slowly than his own clock does not lead to a contradiction. A contradiction could arise only if the two clocks could be put back together side by side at two different times." But clocks in constant relative motion in a straight line "can be brought together only once, at the moment they pass." So the theory is protected from its own internal logic by the impossibility of putting it to a test. Can such a theory be said to be scientific?" 50

Note the use of the straight line.

Again, the absurdities of relativity theory are apparent, but we are told that we mere mortals are incapable of unravelling the Gordian knot that is relativity theory.

As can be seen above, an "official answer" can never be disproved and the emperor can never be accused of having no clothes. Science continues in its blissfully illogical inscrutability; naked.

The early decades of the twentieth century saw the rise of modern physics with the introduction of Albert Einstein's theories. By the thirties physics had come to be seen as so esoteric as to be considered beyond the grasp of the average person. Physicists were elevated to a godlike status by the popular press who also promised a modern scientific, technological, utopia where work was relegated to history. Unfortunately none of this came to pass and the only technology attributable to Einstein was the atomic bomb, something well on its way into production by the Nazis who had also banned Jewish science.

However, the reputation of physicists remained, as it does to this day and they were in a position to debunk any technology they considered not to be aligned with modern theory. The problem with this is that all of our modern technological wonders have their roots in a time when ether theory was dominant. Radio, television and the main basic components that make computers possible can all be traced back to the 1930's or before.

Since the 1930's we have had a steady drip of what is assumed to be new technology that is also assumed to be thanks to modern science. We will look at this in more detail in the technology chapters where the rise of modern technology can be seen in a chronological order. How science, in this case physics since the thirties, has been theorising on anything but new technology.

All of this was a gift to those who had a vested interest in maintaining the status quo. Electrical power generation and distribution have not changed in a hundred years, in fact not since Tesla's attempt to introduce cheap loss-less distribution of power has there been any suggestion of an improvement.

Chapter 2

At Wits' End

Logic, Scepticism, Rationale and Imagination.

“There is not a crime, there is not a dodge,
there is not a trick, there is not a swindle,
there is not a vice which does not live by secrecy.
Get these things out in the open, describe them,
attack them, ridicule them in the press, and sooner
or later public opinion will sweep them away”.

Joseph Pulitzer

Logic?

According to lhup.edu:

"Science proceeds from facts to laws to theories by a difficult-to-define process called induction. Induction includes pattern-recognition, brainstorming, tinkering, creative guessing and that elusive "insight". It is not a process of deductive logic."

51

It is interesting that induction is undefined and I would go further by saying that it is indefinable and that science has no formal thinking system at all, apart from 'do as you are told'.

The use of formal logic is discouraged by science, although we do have mathematical logic, a branch of mathematics that grew out of symbolic logic. Program logic, the use of mathematical logic for computer programs and digital logic, a class of digital circuits, none of which addresses the human thinking process.

This chapter emphasises the scientists' dislike of logic for reasons that will become clear. The use of logic encourages independent, critical thought and awkward questions for the science teacher.

Uses and Misuses of Logic

By Donald E. Simanek

lhup.edu:

Professor of Physics at Lock Haven University.

"Formal logic, uses and misuses

"Formal logic was invented in Classical Greece and integrated into a `system' of thought by Aristotle. It was, for him, a tool for finding truth, but it didn't keep him from making the most profound errors of thought. Nearly every argument and conclusion he made about physical science was wrong and misguided. Any tool

can be misused, and in these pre-scientific days logic was misused repeatedly...
...The bottom line is that logic alone can tell us nothing new about the real world.
Ditto for mathematics, as Albert Einstein observed: "Insofar as mathematics is exact, it does not apply to reality; and insofar as mathematics applies to reality, it is not exact." 52

The writer above surreptitiously equates logic with mathematics as a diversion from the idea of using logic to critique science. Human logic is about thinking. There is a whole range of human thinking that is not mathematical. Therefore: human logic is not normally about mathematics unless mathematics is the goal.

It is most perplexing to have to point out to a scientist the fact that logic can be applied to thinking and language. Logic gives us the ability to look at a statement, complex or simple and know that it makes no sense. If it is irrational, or just plain daft, and to be able to do so even if the statement is issued by the highest authority. To some, this is something new about the real world.

The sentence above about 'tool misuse', seems to infer that logic was invalid before the advent of modern academic science. This is scientific hubris and revisionism at its best, as highlighted throughout these pages.

The rationale is circular: With hindsight Aristotle would have known better had he been a modern scientist, completely ignoring the huge contribution that he and many others gave to us throughout history.

This is called 'Presentism'.

en.wiki:

"Presentism is a mode of literary or historical analysis in which present-day ideas and perspectives are anachronistically introduced into depictions or interpretations of the past." 53

The term "pre-scientific" is emotional and totally devoid of meaning. It begs the question that there is a known specific point in time when science began.

en.wiki:

"Begging the question (Latin *petitio principii*, "assuming the initial point") is a type of logical fallacy in which a proposition relies on an implicit premise within itself to establish the truth of that same proposition. In other words, it is a statement that refers to its own assertion to prove the assertion. Such arguments are essentially of the form "a is true because a is true" though rarely is such an argument stated as such. Often the premise 'a' is only one of many premises that go into proving that 'a' is true as a conclusion." 54

Logic, at the time of Aristotle, was used with the best information available. Today we use logic with the best information available, but that information will be updated with the passing of time. This does not invalidate logic unless one supposes that today's knowledge is complete, which is what the science of professor Simanek appears to do.

ILLOGICAL

The lhup.edu web site used as an example, represents an attempt to discourage the use of logic in its true form, replacing it with a pseudo-logic based on scientific rationalisation.

Science must make all of its disciplines agree with each other in order for it to be an acceptable and complete structure. In doing so 'it assumes' that they are all true. It is this assumption that makes science illogical, because there is no literal proof that all disciplines, or even any of them are true in a literal sense. Having realised this, the only course of action seems to be to declare logic flawed and inferior to science itself.

The usual circular argument:

Science is threatened by logic

Science must be seen to be superior to logic

Therefore: only the scientific version of logic is to be seen as being valid.

Therefore: only scientific rationale, as a substitute for logic, is taught in scientific education.

Therefore: most people don't know much about logic because it was missing from their science-dominated education.

It must be taken as a foregone conclusion that professor Simanek's argument is 'true' before the argument can be used, and thereby its 'truth' accepted as the only option in education, imposed by academic science and presented as 'the only way to think'. The problem is that learning science by rote is not thinking but reciting; preconceived ideas are not necessarily logical.

Logic is a gift for discerning truth.

Professor Simanek seems to assume that modern science is the last word on knowledge, a culmination of learning and method that cannot be excelled, when in fact there are and always have been, other ways of seeing the world; reductionist materialism being only one choice of philosophy. Academic science seeks to remove the choice, after pleading its impartiality and innocence will continue to be, apart from government itself, the most authoritarian organisation on Earth.

The authors of the following Wiki pages seem also to disagree with the professor:
Aristotle (384 BC 322 BC)

en.wiki:

"Kant stated in the Critique of Pure Reason that Aristotle's theory of logic completely accounted for the core of deductive inference." 55

en.wiki again:

"Aristotle's views on the physical sciences profoundly shaped medieval scholarship, and their influence extended well into the Renaissance, although they were ultimately replaced by Newtonian physics." 56

en.wiki:

"Modern formal logic follows and expands on Aristotle. In many definitions of logic, logical inference and inference with purely formal content are the same." 57

Aristotle's logic worked with the information available to him in his time, just as it does today.

For example: the Ptolemaic epicycles worked by giving the motions of the Moon, the Sun and the planets. If this system were applied to a modern computer it would work reliably in predicting the position of planets. The fact that we now acknowledge a solar-centric system is irrelevant, people have always tended to use that which works best for their time with the given data. A more recent example is that of phlogiston, first stated in 1667 by Johann Joachim Becher, that worked until the discovery of oxygen; both of the earlier systems were logically replaced by evolving simpler systems. 58

It is well known that Isaac Newton (1643-1727) spent most of his life studying alchemy and his alchemy was based, just like the philosophy of Aristotle, on the five elements: Earth, Air, Fire and Water. And yet we find that Newton is credited by scientific academia as having made the most outstanding contributions to modern science, and that his science was derived directly from his alchemy?

Something decidedly illogical here when modern science undermines its own founding fathers, when – Professor Simanek: "Nearly every argument and conclusion he (Aristotle) made about physical science was wrong and misguided." It is an undisputed fact that many of the founding fathers of modern science were also alchemists.

This is why science does not like logic and prefers to be authoritarian.

To claim that such ideas are proven wrong by modern standards is naive to say the least. What they tell us is that there was a gradual evolution in methods and a

growth in knowledge over more than two thousand years, without which there would be no modern science. Claiming that things were wrong with hindsight is a typical stratagem that should be obvious to the student, but for some strange reason is not.

Rejection of history is common in science, it stems from the need for a linear pseudo-history that starts with:

the Big Bang

age of earth

a single accidental cell

a multiple cellular entity

an aquatic life form

an amphibian

a mammal

a monkey

Cro-Magnon man, who progresses to the pinnacle of natural achievement - the Modern Academic Scientist.

This is never stated directly, but inferred.

All of the above takes place in a completely random fashion with no guiding force and no spontaneous creation of life. It never occurs to anyone that a random process will tend to work in both ways and that it is entirely possible that the primitive-man-to-scientist move may easily have been a retrogressive step...And then we find that it didn't happen that way after all. It 's evident that the 'Cream of the Scientific Crop' has privileges and is able to change horses mid-stream:

Stephen Hawking on the Creation of the Universe

telegraph.co.uk:

"At the Big Bang, the universe and time itself came into existence, so that this is the first cause. If we could understand the Big Bang, we would know why the universe is the way it is. It used to be thought that it was impossible to apply the laws of science to the beginning of the universe, and indeed that it was sacrilegious to try. But recent developments in unifying the two pillars of twentieth-century science, Einstein's General Theory of Relativity and the Quantum Theory, have encouraged us to believe that it may be possible to find laws that hold even at the creation of the universe. In that case, everything in the universe would be determined by the laws of science. So if we understood those laws, we would in a sense be Masters of the Universe."

--Stephen Hawking (Cambridge, July 28, 1997).

en.wiki:"Circular reasoning (also known as paradoxical thinking or circular logic),

is a logical fallacy in which "the reasoner begins with what he or she is trying to end up with." 59

1.The first line in Hawking's statement is unproven and not provable scientifically, as is his "first cause". He uses his first cause as if it were a proven fact and then says that it is not understood: "If we could understand the Big Bang".

2.The universe came into being from nothing: impossible in materialistic, scientific, terms, where everything must have a cause. A universal explosion of matter, from nothing, without a cause is illogical but rational in scientific terms. Therefore: scientific rationale is illogical or logic has no meaning.

3. Einstein's General Theory of Relativity and Quantum Theory were incompatible at the time Hawking wrote this and still are today, again using an unproven premise as proof.

4. "It may be possible", runs into David Hume's "Is-ought" Problem and is no different to 'It ought to be possible'. 60

David Hume tells of viewing the world as it ought to be, rather than as it is and how this involves circular reasoning, the life-blood of science. Nature and the universe 'ought to conform' to the laws and the yet unwritten laws of science; happily they don't. 61

Science's God of Creation is apparently called Gravity, something about which almost nothing is known but has a subtle guiding influence on the cosmos toward complexity.

This author tends toward the God of Levity!

Is Stephen Hawking aware of:

en.wiki:

"Spontaneous generation or Equivocal generation is an obsolete principle regarding the origin of life from inanimate matter, which held that this process was a commonplace and everyday occurrence, as distinguished from univocal generation, or reproduction from parent(s). The theory was synthesized by Aristotle...generally accepted to have been ultimately disproven in the 19th Century by the experiments of Louis Pasteur...The disproof of ongoing spontaneous generation is no longer controversial..." 62

en.wiki Abiogenesis:

"The sequence of chemical events that led to the first nucleic acids is not known."

63

How life started on Earth is a complete mystery to science, as is the Big Bang. Stephen Hawking, unlike Professor Simanek, has a renewed need to turn to

Aristotle for support for his theories.

Any port in a storm!

It also appears that he has rejected one of the few principles that modern science retained from their alchemical forefathers: that every reaction is the result of some previous action and seems to consider the Big Bang to be the first cause of everything - something from nothing - anathema to science.

Come back Fred Hoyle, all is forgiven!

The only parallel to Hawking's theories can be found in the writings of the ancient sages, who told of the creation of the cosmos by an eternal and unknowable spirit force, but they tell the story with so much more elegance.

There can be little doubt that both physics and cosmology have lost the plot.

I rest my case with the observation that academic science does not even know what the word logic means. It maybe has something to do with education?

Before the Big Bang

Astrophysicists freely admit that only around ten percent of the universe is observable, at most. The rest is materialist fantasy, dark matter and ad hoc theory patching. The Big Bang, a joke by Fred Hoyle after his continuous creation theory had been rejected... And before that is only eternity, infinity and whence came the titanic forces that led to the formation of the universe? Meditating on this, how do you equate a materialistic philosophy with the time before the Big Bang? A time before material was created and no physical laws? Something had to be there - you can't get something from nothing?

A sad note: Stephen Hawking, like many other scientists, is an incurable optimist.

An illogical note: Stephen Hawking, an atheist, is a member of The Pontifical Academy of Sciences... just in case! 64

"Science is not formal logic - it needs the (illogical) free play of the mind in as great a degree as any other creative art. It is true that this is a gift which can hardly be taught, but its growth can be encouraged in those who already possess it."

- Max Born (1882-1970) German Physicist. Nobel Prize, 1954.

65

Academic science uses creative art when it comes to talking itself out of trouble. It has the most amazing ways of absolving itself from following the normal customs and practices that apply to the rest of us. Physics and science in general are not logical, but not for the reasons given by Born.

Scientific Rationale

All rational thinking is assumed to be scientific and information not derived from such a source or labelled scientific is deemed unreliable; rationale is assumed to be scientifically universal. The logic behind this is circular, it being that scientific rationale is supported by science and science is supported by its own rationale.

The original rationale is derived from and supported by a minority group of ultra-conservative and self-serving senior scientists.

There is no redress or means of appeal for any decision they make, as any criticism is referred back to the same group who then become the defendant, judge and jury.

It's all wonderfully undemocratic and nothing will pass the filter that does not conform to the ideology of the peer group. Everything you learn at school, college or university and much of what you read in the press or see on TV, is controlled directly or indirectly by these people - science is rationale but rationale is not necessarily logical.

This inevitably has a knock-on effect in decision-making and problem solving, culminating in a block on anything that has not already been through the peer filter. Any new ideas that do manage to run the gauntlet are steered in a particular direction that suits the prevailing status quo. Many ideas fail, not because they are untenable, but because they don't fit into the box of orthodoxy.

It can only be assumed that the scientific regime is a disincentive to all new ideas. For a true science to flourish the data must be interpreted impartially without constraints, dogma, censorship or ideology and this clearly, does not occur within academic science.

It is a curious fact, that outside of science itself there is no mechanism or institution for the evaluation, criticism or control of science. Every other endeavour be it art, literature, law, politics or education is theoretically at least, open to outside opinion and can be influenced by such opinion, but this never happens in science. Science vehemently rejects any such suggestion, claiming that it is by its very nature self-regulatory and above reproach 'and anyway no one but a scientist is qualified to understand!' However, we all know that historically, those who cannot be criticised succumb to the temptations of the flesh.

We can only conclude that if the public, who pay the science bill, demanded an honest scientific appraisal of a subject that science has declared taboo, the results would be according to science's historic denial and not open and honest. Science will not publish anything it considers damaging to its own collective reputation or its status quo. In this respect, science is not self-regulating and does not examine its own problems or even its own pseudo-rationalistic justifications.

The following example appeared in New Scientist magazine Magazine issue 2491, 19 December 2007 written by Michael Brooks

The Placebo Effect

"Don't try this at home. Several times a day, for several days, you induce pain in someone. You control the pain with morphine until the final day of the experiment, when you replace the morphine with saline solution. Guess what? The saline takes the pain away.

This is the placebo effect: somehow, sometimes, a whole lot of nothing can be very powerful. Except it's not quite nothing. When Fabrizio Benedetti of the University of Turin in Italy carried out the above experiment, he added a final twist by adding naloxone, a drug that blocks the effects of morphine, to the saline. The shocking result? The pain-relieving power of saline solution disappeared.

So what is going on? Doctors have known about the placebo effect for decades, and the naloxone result seems to show that the placebo effect is somehow biochemical. But apart from that, we simply don't know.

Benedetti has since shown that a saline placebo can also reduce tremors and muscle stiffness in people with Parkinson's disease. He and his team measured the activity of neurons in the patients' brains as they administered the saline. They found that individual neurons in the subthalamic nucleus (a common target for surgical attempts to relieve Parkinson's symptoms) began to fire less often when the saline was given, and with fewer "bursts" of firing - another feature associated with Parkinson's. The neuron activity decreased at the same time as the symptoms improved: the saline was definitely doing something.

We have a lot to learn about what is happening here, Benedetti says, but one thing is clear: the mind can affect the body's biochemistry. "The relationship between expectation and therapeutic outcome is a wonderful model to understand mind-body interaction," he says. Researchers now need to identify when and where placebo works. There may be diseases in which it has no effect. There may be a common mechanism in different illnesses. As yet, we just don't know." 66

The placebo effect works and has been acknowledged to work for many years. Why is it not used in treatment rather than referring to it as some kind of mistaken, malpracticed anomaly?

en.wiki says:

"A placebo is a simulated or otherwise medically ineffectual treatment for a disease or other medical condition intended to deceive the recipient. Sometimes patients given a placebo treatment will have a perceived or actual improvement in a medical condition, a phenomenon commonly called the placebo effect." 67

Although a placebo may work, it is quite obvious that the placebo does not fit into the scientific, paradigm box and never will. It is also obvious that science has no

intention of changing itself to accommodate that which throws a spanner into the works of so much of what it holds dear. Ignore it and hand-wave it away is in accord with scientific method because every scientist knows that morphine cannot be replaced by saline solution and that the pain did not truly disappear, but was a figment of a misguided, deluded and unscientific, imagination. It would be interesting to test sceptical scientists with placebos to see if the pain disappears.

Criticism of science

en.wiki:

Robert Anton Wilson, Stanley Aronowitz, and Paul Feyerabend all thought that the military-industrial complex, large corporations, and the grants that came from them had an immense influence over the research and even results of Scientific experiments. Aronowitz even went as far as to say "It does not matter that the scientific community ritualistically denies its alliance with economic/industrial and military power. The evidence is overwhelming that such is the case. Thus, every major power has a national science policy; the United States Military appropriates billions each year for "Basic" as well as "Applied" research".

In his *Industrial Society and Its Future*, a.k.a., *The Unabomber's Manifesto*, Theodore Kaczynski, a primitivist, argues that science "marches on blindly, without regard to the real welfare of the human race or to any other standard, obedient only to the psychological needs of the scientists and of the government officials and corporation executives who provide the funds for research.". He also argues that science is a surrogate activity, i.e., "an activity that is directed toward an artificial goal that people set up for themselves merely in order to have some goal to work toward, or let us say, merely for the sake of the fulfilment that they get from pursuing the goal. 68

Why Not Science Critics?

Don Ihde

stonybrook.edu:

"If accepted, the myth [of expertise] has an immediate pragmatic consequence since it suggests that only experts can and should make decisions about their speciality, and that only experts in the same field may judge each other's decisions. What about the non-experts? They seem unqualified to be external reviewers of the decisions of experts, for they do not possess the specialized knowledge that qualifies experts to make certainty claims. In this sense, then the myth of expertise guarantees, ... that experts judge other experts and that experts are shielded and even insulated from public reproach. (Sassower, *KNOWLEDGE WITHOUT EXPERTISE*, p. 65)" 69

It is accepted that some people know more about a given subject than others due

to years of learning, aptitude, experience and various other reasons. However, its doubtful that anyone knows everything about anything and to block outside opinion on the grounds of non expertise or non qualification alone is to exclude knowledge that the expert may not possess.

Experts tend towards professional bodies and are subject to peer pressure and the all too common in scientific circles, taboo areas of study like the placebo, not to mention academic prejudice and illogical scepticism. Experts need regular and systematic scrutiny and need to explain their motivations in terms that can be understood by all.

Definition of the word 'Science'.

There are two meanings of the word science:

The first is a dictionary definition that encompasses almost everything that can be studied by anyone.

The second is academic science, being a group of qualified teaching scientists who call themselves 'Science'. It's this that confuses most, but there is a world of difference between the two and it is this category that is referred to in these pages.

Ideas from the first group are often adopted by the second and become their property (We will examine this in depth later.) under the label 'science'. This gives control of the ideas over to the academics. Having had custody of such an idea for some time without serious contradictions arising, the idea is, as it were, chiselled into the stone of academia and becomes immovable. This has the effect of halting progress, since such things are often regarded as the last word on a given subject.

New ideas or concepts rarely arise from within academic science itself because of the self imposed restrictions, something at odds with most peoples' perception of what science actually is or does. Science is willingly self defeating in this respect.

Science is no longer science as generally understood, it has become political and authoritarian and most importantly places itself in a position of superior intellectual dominance, a high-ground undeserved and counterproductive. "Science is not powerful because it's right, it's right because it's powerful", being supported by the political, educational establishment and the popular media.

Academically oriented ideology is to be found in every area of our education, taught to us all from an early age. Our qualification and to a greater extent our future success is ultimately in the hands of science. It's little wonder that most assume that there is only one mode of thinking and reasoning.

Scientific Scepticism

Scepticism is not an entity in its own right, it's simply a choice not to believe a

given idea or subject. The sceptic will produce evidence in support of the non-viability of a subject while the believer will present evidence in support of viability. Both have an equal status in logic.

The fact that academic science has chosen to take a sceptical path does not detract from any given non-sceptical statement and gives no logical advantage to scientific scepticism. This is just one more reason why science rejects formal logic. Science supports scepticism because scepticism filters out the things that science finds awkward; it's convenient. 70

The sciences, seen as the 'literal truths' by the sceptics, are simply modern myths and opinion and can be shown to be so.

skepticalinvestigations.org:

"Nearly 20 years ago, sociologist Marcello Truzzi observed that skepticism is an attitude of doubt, not denial. To doubt a given proposition is one thing. To be certain that its false is quite another. Those who claim to know but call themselves skeptics are in fact pseudoskeptics. Truzzi enumerated typical qualities of pseudoskepticism, such as the tendency to discredit without investigating, frequent use of ad hominem attacks, basing claims on plausibility rather than hard evidence, and on and on." 71

Below we read how the sceptics managed to destroy a promising project simply because it dealt with the ideologically taboo subject of remote viewing.

The Skeptical Invaders by Guy Lyon Playfair

skepticalinvestigations.org:

"With the publication of Paul H. Smith's *Reading the Enemy's Mind* (New York: Tom Doherty Associates, 2005) we can now read the whole story of the U.S. military intelligence programme of 'remote viewing' that began in California in the early seventies and came to an inglorious end in 1995 with the disbanding of the remnants of the last operational unit in Fort Meade, Maryland. It is an excellent book, as compellingly readable as it is authoritative, yet some aspects of the story it tells are very sad.

The saddest is the fact that what should have been a ground-breaking programme - the first of its kind anywhere to be funded with public money - that revolutionised the business of intelligence gathering was allowed to deteriorate as it did. Another is the way in which the skeptical community did its best to scupper it right from the start, or even before the start, with what Smith describes as "an invasion of skeptics" in 1972/3 at the (then) Stanford Research Institute, now SRI International. Chief invader Ray Hyman displayed some rather uncertain powers

of observation, referring to the "incredible sloppiness" of the experiments he witnessed there with the 'blue-eyed' Uri Geller (black-eyed, actually), but forgetting to mention that the only experiments he and his colleagues were able to see were some that they set up themselves.

Some twenty years later, after what became known as Star Gate had been bounced from one funder to another ending up where it started, with the CIA, that agency commissioned a report from the ostensibly impartial American Institutes of Research (AIR) which sought the opinions of statistician Jessica Utts, a genuine expert who concluded that "psychic functioning has been well established", and Ray Hyman, who concluded that it hadn't. One of Paul Smith's most startling revelations is that out of the three to four thousand remote viewing sessions carried out by some two dozen viewers over the years, the AIR team based its findings on "approximately forty sessions conducted in 1994 and 1995 by three demoralised viewers" (p.449)." 72 That's the way they do it folks!

Biased Scepticism

Scientific scepticism has become a driving force among scientists even though there are no sceptical standards, no degrees in scepticism, no sceptical measurements or means of evaluation, it has become bound to academia like a Siamese twin. Most disconcerting is the biased scepticism that rejects on principle and declares unscientific while never turning its sceptical spotlight onto science itself. This is called dogma, something to be considered by those who claim they are proud to call themselves sceptics.

It works by attaching the science label to scepticism itself. Science is sceptical, therefore scepticism is scientific - the customary circular logic of science that is unscientific and illogical by any standards.

Also in this area are those who call themselves sceptics but have an extreme materialistic agenda. They are often characterised by their exaggerated hatred of any form of religion, singling it out as the single cause of the world's ills. They claim to be some kind of saviours sent to rescue us from medieval superstition, whilst preaching a gospel of science just like evangelists.

The monks of a new inquisition are with us.

Things that have nothing to do with academic science are judged by scientific standards. Paranormal, psychic, clairvoyance, religion and spirituality are judged by those who claim to be scientists but are in fact riding on the back of science to further their own materialistic, sceptical agenda. Such people have a morbid fear of the loss of what they see as scientific control.

The consensus of scientific opinion on all of this seems to be something of a mystery. On the one hand, if asked directly a scientist will say that

religion/spirituality/occult is not part of science and not his/her area of expertise. On the other we have constant reminders that there is no scientific evidence to support paranormal matters and that they therefore cannot exist, suggesting that science knows all but never actually saying so. The demand for scientific evidence of the spiritual so often repeated by sceptics is in fact a non sequitur in that this would require material evidence for something non-material.

The fact that most scientist never study these things and are totally unqualified to comment on them is not considered relevant. There are no scientific measurements of spirituality and no authenticated scientific tools with which to measure, and yet scientific opinion is actively sought on such subjects and given a high status.

Confirmatory Bias

en.wiki

“Confirmation bias (also called confirmatory bias or myside bias) is a tendency of people to favour information that confirms their beliefs or hypotheses. People display this bias when they gather or remember information selectively, or when they interpret it in a biased way. The effect is stronger for emotionally charged issues and for deeply entrenched beliefs.” 73

Publication Prejudices: An Experimental Study of Confirmatory Bias in the Peer Review System

Michael J. Mahoney

Cognitive Therapy and Research, Vol. 1, No. 2, 1977, PP. 161-1 75

pages.stern.nyu.edu:

"The tragic effects of confirmatory bias are not, however, restricted to clinical disorders. In fact, as has been argued elsewhere (Mahoney, 1976), the most costly expression of this tendency may well be among scientists themselves. To the extent that researchers display this bias, our adequate understanding of the processes and parameters of human adaptation may be seriously jeopardized. If we selectively "find" or communicate only those data that support a given model of behaviour, then our inquiry efforts will hardly be optimally effective. Despite the fact that confirmatory bias in scientists was first noted by Francis Bacon (1561 – 1626) over three centuries ago, precious little research has been devoted to the topic and the few extant studies have hardly challenged Bacon's observations. One study found that the vast majority of scientists drawn from a national sample showed a strong preference for "confirmatory" experiments (Mahoney & Kimper, 1976). Over half of these scientists did not even recognize disconfirmation (modus tollens) as a valid reasoning form! In another study the logical reasoning skills of 30 scientists were compared to those of 15 relatively uneducated Protestant ministers (Mahoney & DeMonbreun, 1977). Where there were

performance differences, they tended to favour the ministers. Confirmatory bias was prevalent in both groups, but the ministers used disconfirmatory logic almost twice as often as the scientists did." 74

Taboo Subjects, threats to control

Belfast homoeopathy results

“MADELEINE Ennis, a pharmacologist at Queen's University, Belfast, was the scourge of homoeopathy. She railed against its claims that a chemical remedy could be diluted to the point where a sample was unlikely to contain a single molecule of anything but water, and yet still have a healing effect. Until, that is, she set out to prove once and for all that homeopathy was bunkum.

In her most recent paper, Ennis describes how her team looked at the effects of ultra-dilute solutions of histamine on human white blood cells involved in inflammation. These "basophils" release histamine when the cells are under attack. Once released, the histamine stops them releasing any more. The study, replicated in four different labs, found that homeopathic solutions - so dilute that they probably didn't contain a single histamine molecule - worked just like histamine. Ennis might not be happy with the homeopaths' claims, but she admits that an effect cannot be ruled out.

So how could it happen? Homeopaths prepare their remedies by dissolving things like charcoal, deadly nightshade or spider venom in ethanol, and then diluting this "mother tincture" in water again and again. No matter what the level of dilution, homeopaths claim, the original remedy leaves some kind of imprint on the water molecules. Thus, however dilute the solution becomes, it is still imbued with the properties of the remedy.

You can understand why Ennis remains sceptical. And it remains true that no homeopathic remedy has ever been shown to work in a large randomised placebo-controlled clinical trial. But the Belfast study (Inflammation Research, vol 53, p 181) suggests that something is going on. "We are," Ennis says in her paper, "unable to explain our findings and are reporting them to encourage others to investigate this phenomenon." If the results turn out to be real, she says, the implications are profound: we may have to rewrite physics and chemistry." 75

Water Memory

The victim at the centre of what was to become a witch-hunt was immunologist Jacques Benveniste who had results much like those of Ennis. These were not fly-by-night charlatans but scientists with funded laboratories, teams of researchers and reputations for excellence, who even so, became martyrs to the sceptical cause.

The champion selected by the scientific establishment, under the guise of the BBC TV Horizon program, was a stage magician, not skilled in matters scientific, but a

sceptic, popular among other sceptics...

en.wiki:

“James Randi (born Randall James Hamilton Zwinge; August 7, 1928) is a Canadian-American stage magician and scientific skeptic best known as a challenger of paranormal claims and pseudoscience. Randi is the founder of the James Randi Educational Foundation (JREF). Randi began his career as a magician named The Amazing Randi, but after retiring at age 60, he began investigating paranormal, occult, and supernatural claims, which he collectively calls "woo-woo".⁷⁶

No bias there!

Nature online 8 October 2004

"Back in 1988, however, Benveniste was very much part of the establishment. He was the senior director of the French medical research organization INSERM's Unit 200, in Clamart, which studied the immunology of allergy and inflammation. That was when he sent his notorious paper to Nature¹. In it, he reported that white blood cells called basophils, which control the body's reaction to allergens, can be activated to produce an immune response by solutions of antibodies that have been diluted so far that they contain none of these biomolecules at all."⁷⁷

The sceptical scientific establishment would immediately interpret this as being Homoeopathic and no matter how dilute the wording, an allergic, knee-jerk reaction would set in.

Biased scepticism and confirmatory bias are most evident in Taboo areas. The Water Memory BBC TV Horizon program ⁷⁸ serves as a prime example of the biased debunking of something that would threaten the status quo of academia.
⁷⁹

“The water memory caper” is an icon, albeit 20 years old, that represents the determination of science to kill-off at all costs, any idea that it will sanction what it considers to be a paranormal connection with itself. (in this case Homoeopathy) This is contrary to its paymasters the public, who would dearly love to have some support for the constant irrationality in their daily lives. In other words, science is failing to deliver what is required by those who fund the project.

Creating the illusion of detachment, science displays a determination to follow an exclusively extreme materialistic myopia coupled with a counterfeit elitism and is prepared to sacrifice its own to do so.

A further puzzling aspect of the water memory fiasco was the need for a scientifically unqualified magician to oversee the proceedings. The assumption is immediately made that Jacques Benveniste and scientists from the other labs

involved are perpetrating some kind of hoax conspiracy that can only be discerned by a magician. The illogical rationale is that if something can be reproduced by a magician using trickery, then all such phenomena are trickery. Such are the workings of the sceptically inflamed scientific mind. Scientists appear to have a strong affinity with stage magicians, presumably because their skills support often dubious sceptical accusations of trickery.

'Had Water Memory not been debunked, the whole of the extreme materialistic paradigm would have been endangered.' 'Things such as Homoeopathy would be seen by some as acceptable subjects and this could lead to, 'Who knows what? Excuses such as," we can't let in any old rubbish" are proffered with a wave of the hand, as if digging holes in the information highway somehow helps the flow of traffic.

If science wants to distance itself from such subjects, that's fine, but constant denial and materialistically rationalised debunking is suspicious to say the least and surely needs some kind of logical justification.

80

SYMPTOMS OF PATHOLOGICAL SKEPTICISM

(c)1996 William J. Beaty

amasci.com:

"Many members of the mainstream scientific community react with extreme hostility when presented with certain claims. This can be seen in their emotional responses to current controversies such as UFO abductions, Cold Fusion, cryptozoology, psi, and numerous others. The scientists react not with pragmatism and a wish to get to the bottom of things, but instead with the same tactics religious groups use to suppress heretics: hostile emotional attacks, circular reasoning, dehumanizing of the 'enemy', extreme closed-mindedness, intellectually dishonest reasoning, underhanded debating tactics, negative gossip, and all manner of name-calling and character assassination.

Two can play at that game! Therefore, I call their behaviour "Pathological Skepticism," a term I base upon skeptics' assertion that various unacceptable ideas are "Pathological Science." Below is a list of the symptoms of pathological skepticism I have encountered, and examples of the irrational reasoning they tend to produce..."81

Criticisms of the Burden of Proof

The strange notion that sceptics are on solid ground and there is no need to prove any of their assertions:

en.wiki:

"Some claim that the Burden of Proof is improper as a weapon in rhetoric, and does not lead to truth. A lack of evidence for a position does not justify the opposing position. The Burden of Proof has been described by some as a "Get-out-of-jail-free" card, absolving the card-holder of all obligations to prove their own position. This is an inappropriate use of the Burden, as it avoids the issue and neglects to address the logical possibility of the opposing argument. In the example above involving Thor, a true skeptic would not reject the logical possibility that Thor is real unless the definition of Thor is shown to be logically incoherent. A lack of evidence on the side that "has the burden" to provide evidence is not justification for the complete rejection of that ideology by the skeptic - because that would constitute an unsubstantiated faith placed in the counter-argument. Skepticism often invokes a methodology of "choosing disbelief" rather than open-mindedness. What remains is to determine the value of degrees and modes of skepticism and open-mindedness as evidenced by precedent in achievements in science, medicine and other fields of knowledge. A mind too narrow cannot produce the creativity and innovation that have been pivotal to many human advances. A mind too open is prey to all new claims that fall within the realm of logical possibility."⁸²

The quote above, "value of degrees and modes of skepticism." is something that does not exist in science, instead there is a feedback-loop that processes anything new back into the system rejecting anything not already in the system or anything remotely challenging the system, thereby preventing any form of change to the system.

Scepticism seems to operate by using the 'nudge and wink' technique. If certain subjects are broached the person next to you is nudged and returns a wink of approval. All done and dusted and all very scientific.

Scientists are human and science needs checks and constrains like all human endeavours - these do not exist.

Imagination

Imagination seems to get a bad press these days, used by science as a tool for debunking; taboo subjects are 'figments of the imagination'; imagination replacing the word fantasy. But it must be remembered that everything that mankind has ever achieved, every invention, innovation, any new idea is directly from someone's imagination. In principle, there are no limits and nothing is impossible. Those who wish to do the impossible throw away the text book called impossible. Just about every major invention or new concept has been declared impossible by authority at some time. Think of the Wright brothers who achieved impossible heavier than air flight or Tesla who gave us our AC electrical distribution system that made our modern world of technology possible. They did

it by discarding the old discouraging ideas and by encouraging their own imagination. Imagination makes the impossible into a challenge to be overcome. Imagination, our creative energy, is debunked by academic science.

"Science does not know its debt to imagination".

Ralph Waldo Emerson

Imagination

"Imagination, which knows no bounds, is the fountainhead for the most adventurous explorations. It can have great impact on the material world, of course, but one mustn't therefore conclude it is composed of matter or energy. Imagination is non-material. To think otherwise can wind you up in using some version of physics to depict imagination-and then you are imposing limits on it. This is an error. Imagination doesn't obey any laws of physics."

Jon Rappoport

Rationalisation is king and it seems we can do nothing without it. It must, however, be remembered that it's through rationalisation that the thief justifies his actions by rationalising that if he did not steal it, someone else would.

Rationalisation has historically been used scientifically to justify the abuse of ethnic and minority groups.

We use it to justify our own questionable actions.

Companies and organisations use financial rationalisation as an alternative to examining mistakes.

It is rationalisation that puts limits on our imagination.

Rationalisation is suspect.

Scientific rationalisation is not scientific logic and is questionable.⁸³

As humans, we have a tendency to rationalise in order to bring some semblance of control into our chaotic lives. Academic science has capitalised on this with a complete - or so its exponents would have us believe - rational system that they call 'Science'. This is then force-fed to us all through the education/media system until it seems to be the only possible means of thinking and the route to all answers.

The observation that mankind did very well before the advent of modern science is countered by misdirecting our attention to the technology around us, that is more often than not, not the work of academics and only adopted by academic science. In this way, an undeserving academic science is given credit for that which it has not done. Physics, in fact, distances itself from technology ever more with the passing of time.

What we have is the subtle illusion that every improvement is thanks to science and by default this thanks is transferred to academic science that claims to BE

SCIENCE - all other science being relegated to inferior or pseudo-science; this is rationalisation at its most illogical. What the reader will discover as he/she scans these pages is that most of the technology that is assigned to academics derives from what these same scientists call pseudoscience. It was discovered or invented by those who are not scientist. Scientists, contrary to popular belief, are not good at discovery.

Nature

The proud boast of science is that through its study of nature it provides physical evidence through repeatable experiments.

However, nature never repeats anything.

Every leaf on every tree is different.

Every man and woman is subtly different from other men and women.

Every planetary orbit is affected by the influence of other planets, moons and the galaxy and is different from the last.

Every snowflake.

Nature has no interest in repeats, only to try every possible permutation of variation and change; a far cry from exacting, repeatable science.

Whatever science is studying it's certainly not nature, but some abstract, nameless, undisclosed entity of its own making.

De-mystifier Education – Qualification

The mystique of science is a hurdle for many and the education stratagem is used on a regular basis. A scientist will claim that the layman is not able to criticise science because he is unqualified to do so. This is designed to throw a charge of insecurity into any interloper. The answer is that all education is based on average intelligence and this includes the scientific. What this means is that fully half of the global population is a potential scientist - if they do the work, they get the qualification. This does not discount those with talent and natural ability, but these things are not given by education or qualification, they are inborn, inherent qualities that scientists either have or lack, just like anyone else.

A scientific education does not make anyone brilliant and no brain transplant is performed during their education, just the instilling of certain ideas that are almost impossible to dislodge, a form of brainwashing. 84 85

An Inconvenient Truth

tcm.phy.cam.ac.uk:

“Dear Prof. Josephson,

I am very sorry to have to inform you that, at my initiative, Mike Towler and I are withdrawing our invitation for you to attend our workshop at The Towler

Institute this summer.

It has come to my attention that one of your principal research interests is the paranormal. I have told Dr Towler that, in my view, it would not be appropriate for someone with such research interests to attend a scientific conference. On this basis, I have urged him to agree to withdrawing the invitation, much to his personal regret.

I do wish I had noticed this earlier, the oversight is entirely my fault. Nothing personal, of course. It is a purely intellectual matter. We are very sorry for any inconvenience caused, and wish you a pleasant summer.

Yours sincerely,

Antony Valentini

Theoretical Physics Group

The Blackett Laboratory

Imperial College London

Prince Consort Road

London SW7 2AZ

United Kingdom" 86

There is some intriguing reading on the same subject with a link at the footnote:
87

This kind of dogma induced snobbery is paralleled maybe, by that of a priest entering a den of iniquity. There is a more serious problem with this thinking however, in that all science from before the rise of 'modern science', and this must include Newton, Faraday and Boyle et al, two of whom were alchemists and one self-educated, and all the discoverers who were religious or had a connection with paranormal subjects - must be rejected on the grounds that they were unscientific.

Also rejected is all technology that is not as a result of the guiding hand of modern physics and this means the vast majority of it, as we will see. It gets even worse when one considers that many of the great names in science history, who gave us the ideas to dispel much of our drudgery, were themselves involved in paranormal studies. One could even say that it was the rule rather than the exception that the discovery of a great truth is accompanied by an interest by the discoverer in a paranormal subject, in some way or another.

What would we have left if we were follow the guidelines of such physicists? Things look quite bleak as they have given us the LHC and the theories of Einstein, neither of which have, or are even likely to lead to any usable technology or any conceivable benefit to any person who is not a physicist. One can only assume that they wish to impose a new dark-age, where theory takes the place of theology. The destruction of non-academically generated technology

perhaps, and of course a book-burning? A thought police maybe, and burning at the stake for those of us who dare to think for ourselves?

I seem to be experiencing a slight *deja vu*.

en.wiki:

"It is believed by some philosophers (notably A.C. Grayling) that a good rationale must be independent of emotions, personal feelings or any kind of instincts. Any process of evaluation or analysis, that may be called rational, is expected to be highly objective, logical and "mechanical". If these minimum requirements are not satisfied i.e. if a person has been, even slightly, influenced by personal emotions, feelings, instincts or culturally specific, moral codes and norms, then the analysis may be termed irrational, due to the injection of subjective bias." (The last sentence contains a perfect description of modern scientific thinking.) 88

More on exclusion:

(Dr. Bernard) "Newgrosh notes, how easy it used to be even for entirely self-taught outsiders and part-time amateurs to break into mainstream academia... Not only does this not happen in the modern world, where academia is distrustful of outsiders and its publications are by and large closed to non-members of the academic elite but the general perception is that if you have no academic qualification you cannot be recognized as having any expertise. The Royal Society is a club that would reject a Herschel or Faraday today." 89

Chapter 3

Wireless Connections

Not the official version of the history of radio

"It is not uncommon for engineers to accept the reality of phenomena that are not yet understood, as it is very common for physicists to disbelieve the reality of phenomena that seem to contradict contemporary beliefs of physics" – Henry H. Bauer

The word 'wireless' has enjoyed something of a revival in recent times with wireless radio connections to computers, telephones and other electronic appliances, but the invention of Radio, or Wireless Transmission as it was called in the early days, cannot be attributed to any single individual. Once the word was out that various people had witnessed sparks jumping from one charged conductor to another uncharged conductor, all manner of experimenters and tinkerers would try to duplicate the effect. The world and his wife were experimenting with electricity and it is thanks to these individual pioneers that we have radio or even electricity. Most are forgotten, but academia retains some of the more educated names and presents them as discoverers extraordinary in the time honoured way to support the notion that academic training and qualification are THE requirements for innovation, invention and originality, when the direct opposite is true.

It must be remarked that the early wireless transmissions were not radio as we know it today, but more in the nature of what we now call interference. Before the introduction of digital transmissions, the domestic VHF/UHF TV picture transmissions would be ripped apart by a passing, unsuppressed motor vehicle ignition or other noisy electrical equipment. The 'noise' is what was originally used for radio signal transmissions. A wireless telegraphy transmission was Morse code without telegraph-wires.

Dit-Da-Dit.

It was the discovery of two separate components that made radio signals usable, without which radio transmissions and audible reception as a medium for communication would have been impossible. They were the tuned circuit with wound coils and capacitors and the coherer, that lead to the improved rectifier, demodulator or diode. As the reader will see below, it was the tuned circuit that led the US Supreme Court in 1943 to grant full rights to Nikola Tesla for his radio patents; sadly after his demise. The coherer cannot be attributed to any single individual.

Francesco Zantedeschi

en.wiki:

"C.1830 Francesc Zantedeschi suggested a connection between light, electricity and magnetism. In 1829 and again in 1830, Zantedeschi published papers on the production of electric currents in closed circuits by the approach and withdrawal of a magnet, thereby anticipating Michael Faraday's classical experiments of 1831..." 90

catholicism.academic.ru:

"Zantedeschi was among the first to recognize the marked absorption by the

atmosphere of the red, yellow, and green rays; he also thought that he had detected in 1838 a magnetic action on steel needles of ultra-violet light. Though this effect was not confirmed, it is interesting to note that a connection between light and magnetism was suspected so many years before the announcement in 1867 by Clerk-Maxwell of the electro-magnetic theory of light. In a tract of 16 pages, published in 1859, Zantedeschi defended the claims of Romagnosi (Below), a physician of Trent, to the discovery in 1802 of the magnetic effect of the electric current, a discovery which is usually accredited to Oersted of Copenhagen in 1820. Zantedeschi's experiments and papers on the repulsion of flames by a strong magnetic field (discovered by Padre Bancalari of the Pious Schools in 1847) attracted general attention at the time." 91

en.wiki:

"Padre Bancalari was professor of natural philosophy at the University of Genoa. In 1847, he discovered that flames were diamagnetic by showing that the(y) were repulsed by a strong magnetic field." 92

It is safe to say that much more was known about electricity and magnetism at this time than is given credit by the text books of academia. It is also of interest that they are religious figures and as such would be considered 'unscientific'.

Michael Faraday

en.wiki:

"In October 1813, he (Humphry Davy) and his wife, accompanied by Michael Faraday as his scientific assistant (and valet), travelled to France...Davy was asked by Gay-Lussac to investigate a mysterious substance isolated by Bernard Courtois. Davy showed it to be an element, which is now called iodine." 93

From a contemporary 'The Gentleman's Magazine'. See figure 1
archive.org:

"Nov. 28. The Bakerian Lecture was delivered by Professor Faraday, illustrated by experiments. After alluding to the experiments of Padre Bancalari, (See above) the lecturer showed the opposite magnetic (c)ondition of oxygen and nitrogen..." 94

What we have above is a contemporary report of a Royal Society lecture given by Michael Faraday, where he gives credit to Padre Bancalari before giving a practical demonstration of Bancalari's discoveries, all but forgotten today. It can be assumed that many of the discoveries attributed to Faraday were in fact the work of others, but Faraday has been canonised by science and given scientific, superhero qualities to which we mere humans are unlikely to aspire.

It's no secret that the scientific names now renowned went looking for new

science across continental Europe and as Humphrey Davy's assistant, Faraday went on several field trips. It therefore becomes nigh on impossible to determine who discovered what. 95

We will encounter more of this tendency to elevate the scientist to sainthood as we proceed, something that supports the notion that both religion and science were forged in the same fire.

Note. en.wiki:

"Although Faraday received little formal education and knew little of higher mathematics, such as calculus, he was one of the most influential scientists in history. Historians of science refer to him as the best experimentalist in the history of science." 96

Notwithstanding, Faraday is yet another name that would be lost or labelled unqualified, debunked or called a pseudo-scientist in today's scientific climate. Consider Faraday's electric motor, that if it was indeed Faraday's original idea, was to kick-start a revolution in technology that is still evident today, the electric motor being the basis for most subsequent electrical labour-saving devices. It was to be another forty years before James Clerk Maxwell's theory of electricity appeared, proving that technology precedes academic, scientific, theory unless an academic gets there first and debunks the whole idea.

en.wiki:

"Gian Domenico Romagnosi (1761 1835) ...was an Italian philosopher, economist and jurist."

en.wiki:

"Although Romagnosi was not a scientist, he made some experiments with a voltaic pile and its influence on a compass. He published two accounts of his findings in 1802, in Italian newspapers. It is sometimes assumed that he found a relationship between electricity and magnetism, about two decades before Hans Christian Oersted's 1820 discovery of electromagnetism." (This next part of the Wiki article is slightly strange) "However, his experiments did not deal with electric currents, and only showed that an electrostatic charge from a voltaic pile could deflect a magnetic needle." 97 Certainly not an electrostatic discharge, but an electric current issues from a voltaic pile. Even some of the electrostatic generators of the time were capable of giving a steady current. (Van de Graaff generators are described as "constant current" electrostatic devices. 98)The Wiki writer is either defending the mythical super-heroes of science or doesn't know what he's talking about. An electric battery gives a steady current. The voltaic pile is a set of individual battery cells in series that was said to be invented by Alessandro Volta in 1800, the first electric battery.

Batteries are by far the most expensive method of buying electricity and one would expect improvements, but the most common type we use today is all but identical to the one invented by Volta. 99

en.wiki: The voltaic pile is identical to the Baghdad Battery that has been around since 250 BC to AD 224. 100

Hans Christian Ørsted

en.wiki:

"On 21 April 1820, during a lecture, Oersted noticed a compass needle deflected from magnetic north when an electric current from a battery was switched on and off, confirming a direct relationship between electricity and magnetism..."101

...Just like Gian Domenico Romagnosi's discovery some eighteen years before in 1802..... but Oersted had a battery?

Wireless Transmissions

en.wiki

"1832 Joseph Henry, who was trained as a civil or mechanical engineer, performed experiments detecting electromagnetic effects over a distance of 200 feet and postulated the existence of electromagnetic waves." 102

en.wiki:

1846 "Michael Faraday speculated that light was a wave disturbance in a force field"... using the then extant 'aether theory'. It is interesting to speculate on the number of useful discoveries that emerged from this old and now debunked theory. It is also interesting to compare the absence of generally usable technological ideas emerging from physics since its demise. 103

David E. Hughes

1878, David E. Hughes, again a self-educated man, not a scientist, noticed that sparks could be heard in a telephone receiver when experimenting with his carbon microphone. He developed his carbon-based detector further and eventually could detect signals over a few hundred yards. I would guess that he used carbon granules rather than metal filings for his version of the coherer. Huges is a contender for being the first to achieve wireless transmissions.

He demonstrated his discovery to the Royal Society in 1880, but was told it was merely induction and he therefore abandoned any further research.

Dismissive hand-waving skills were as common then as they are now among scientist, and mainly serve to delay or prevent the progress of others, which is exactly what happened.

en.wiki:

"Marconi knew Hughes through Preece and Lodge..."

"...James Clerk Maxwell's theories were not yet well received and Hughes' transmissions were wrongly assumed to be electromagnetic induction. His achievements went unrecognised for decades." 104

Yet another triumph for the Royal Society. Nothing changes and today new ideas are still treated with the same contempt. The cold fusion fiasco is a modern example of science rejecting something potentially important on the basis of theory, even though a new clean energy source is desperately needed by the world.

William Crookes and David Hughes

Crookes was one of the true electrical pioneers of his day, but because he was a chemist rather than a physicist and he dabbled in psychic research, he hardly gets a mention among the mythological gods of science.

earlyradiohistory.us:

"In the opening remarks at the third annual dinner of the Institute of Electrical Engineers, held in London on November 13, 1891, the institute's president, William Crookes, spoke of the "bewildering possibility of telegraphy without wires, posts, cables, or any of our present costly appliances".

In the February, 1892 issue of Fortnightly Review, Crookes' 'Some Possibilities of Electricity' expanded on this theme...

Crookes' review included one particularly arresting sentence: "...some years ago I assisted at experiments where messages were transmitted from one part of a house to another without an intervening wire by almost the identical means here described".

J. J. Fahie contacted Crookes about this intriguing statement, and was told that the unidentified experimenter was David Hughes (who had been present at the Institute's annual meeting in November) and, who, beginning in 1879, apparently had transmitted and received radio signals, although he was discouraged from further research by reviewers who thought he had not done anything unusual." 105 106

Note the contrast between a scientist who is prepared to listen and those who already know it all. We will meet the esteemed Mr. Crookes again in the chapter on television.

Also note, how many of the radio pioneers are not physicists and how the amateur physicists like Crookes have ceased to exist today.

Heinrich Hertz rises to fame after the delay in radio development courtesy of the Royal Society.

en.wiki:

"Heinrich Rudolf Hertz was the experimental physicist who confirmed Maxwell's

work in the laboratory. From 1886 to 1888 inclusive, in his UHF experiments, he transmitted and received radio waves over short distances and showed that the properties of radio waves were consistent with Maxwell's electromagnetic theory." (The "UHF" must be taken with a pinch of salt, as Hertz used a loop of wire and a spark-gap for his transmissions).107

Nikola Tesla

But Tesla had other ideas about Hertz' work and told him so:

pbs.org:

Tesla said, "The history of science shows that theories are perishable. With every new truth that is revealed we get a better understanding of Nature and our conceptions and views are modified. Dr. Hertz did not discover a new principle. He merely gave material support to hypothesis which had been long ago formulated. It was a perfectly well-established fact that a circuit, traversed by a periodic current, emitted some kind of space waves, but we were in ignorance as to their character. He apparently gave an experimental proof that they were transversal vibrations in the ether. Most people look upon this as his great accomplishment. To my mind it seems that his immortal merit was not so much in this as in the focusing of the investigators' attention on the processes taking place in the ambient medium. The Hertz-wave theory, by its fascinating hold on the imagination, has stifled creative effort in the wireless art and retarded it for twenty-five years. But, on the other hand, it is impossible to over-estimate the beneficial effects of the powerful stimulus it has given in many directions."108

The Hertz-wave theory was chiselled into the stone of academia and continues to stifle creative effort to this very day.

teslauniverse.com:

Was the the high frequency generator that Hertz used also thanks to Tesla? As can be seen in the pages of 'The Electrical Experimenter' April, 1919, Tesla accuses James H Rogers of ground radio109 fame, of stealing his ideas. 110

teslauniverse.com:

"The Rogers Underground Wireless" contains a reference to "a novel and original high frequency generator" of Mr. Rogers' invention. May I not — to use the President's elegant expression — call attention to the fact that this device was described by me years ago, as will be evident from the following excerpt of a communication which appeared in the Electrical Review of March 15, 1899..."
Nikola Tesla 111

Alexanderson Alternator

"In 1891, Frederick Thomas Trouton gave a lecture which stated that, if an electrical alternator were run at a great enough cycle speed (in more-familiar

terms, if run fast enough and with enough poles), it would generate high-frequency wireless energy. Nikola Tesla developed alternators with up to 50,000 hertz output. A forerunner to the Alexanderson alternator, his devices, by early 1896, produced continuous frequencies that were in the longwave radio frequency range of the VLF and LF bands." 112

"Tesla had some ten years of experience with high frequency AC behind him by the time he moved to Colorado Springs. In 1889, on his return from Pittsburg where he had been working as a consultant to Westinghouse on the development of his polyphase system, he began work on the construction of an alternator for generating currents at much higher frequencies than those used in ordinary power distribution. In 1890 he filed applications for two patents for alternators working at over 10 kHz." 113

Tesla, who was the original inventor, or as he preferred, the discoverer of the alternator, was the first to construct a high frequency alternator. He soon abandoned his researches in this area, because of the limitations, in favour of electronically generated high frequency currents.

Reginald Fessenden, described as "The Father of Radio Broadcasting", who seems to have been the first to transmit a voice via radio, was using Tesla's patents for both his tuned circuits and his high frequency alternator.

We will see as we progress that Tesla, having been challenged by Marconi, was vindicated as the original inventor of radio in the 1943 supreme court case, and that he was not at all happy with Dr. Hertz and his Hertzian waves.

Never mentioned these days is the fact that Maxwell's electromagnetic theory was also formulated on the assumption that the aether theory was valid and this in turn was confirmed by Hertz. 114 All reference to the aether was subsequently removed and in its present modified form it is an incomplete theory, due to modern physical science.

And so, here and on other pages, we have a modern technology up-and-running and still working despite the fact that the theory has since been debunked by an opposing relativistic, modern physics that has never produced any electronic technology useful to the general public. The author wonders what the supporters of scientism have to say about all of this? The ones I have asked seem not to have an answer.

The Coherer

An antenna connected directly, or even through a tuned circuit to a headset or even through an audio amplifier will not give an audible radio reception, just a hum or a buzz. What is required is a "detector" (demodulator), some kind of rectifier (diode). The earliest of these, applied to radio signals, was the coherer.

Temistocle Calzecchi Onesti

1884

en.wiki:

"Onesti demonstrated in experiments in 1884 through 1886 that iron filings contained in an insulating tube will conduct an electrical current under the action of an electromagnetic wave. This discovery was the operating principle behind an early radio wave detector device called the coherer, developed about 6-10 years later by Oliver Lodge, Edouard Branly, and Guglielmo Marconi, which was influential in the development of radio." 115

teslatech.info:

"The phenomenon of coherence, first observed in 1835, found its first application by 1852 as a lightning protector for telegraph lines. Under stress of a high voltage lightning strike, the coherer would short to ground, thus diverting destructive currents away from the rest of the system. Later, the coherer played an important role in making the development of radio possible. 116

At some point in history someone (a tinkerer) decided to attach a coherer to their home-made wireless receiver and ta-dah. There were not many electrical components in those days and it would be interesting to know who first observed the effect in or before 1835.

Edward Branly

teslatech.info and en.wiki:

In 1884, Professor Edward Branly's studies of nerve impulses led him to develop the coherer as a device for detecting radio signals. His device was a glass tube filled with metal filings and two electrodes. The device decreased in resistance in the presence of electrical energy, as the filings stuck together or cohered." 117

Nerve impulses!

Branly's coherer was no different to anyone else's, metal filings in an insulated tube with a contact at each end.

Although the coherer is made to appear to have been invented by an academic, this is something assumed, and intended to enhance the reputation of academia. Branly used the coherer in his demonstrations. No one knows who invented it and no one knows why it works to this day; and so the mainstay of science, the theory, is absent. I would guess that suggesting that something works without a good scientific rationalisation is pushing the sceptics into dangerous and uncharted territory.

David E. Hughes, whom we met above, being ejected from the Royal Society, is

often described as professor Hughes, for effect, but he was professor of music not physics as some would have us believe.

en.wiki tells us that Hughes was the inventor of the coherer and of the cat's-whisker diode detector:

"He experimented with the discovery, and described his creation of both the device classically known as a "coherer", and an improved semiconductor carbon and steel point-contact rectifying diode, which he also called a "coherer". The point-contact diode version of the device is now known as a crystal radio detector, and was the key component of his sensitive crystal radio." 118

en.wiki:

"Coherence of particles by radio waves is an obscure phenomenon that is not well understood even today. Recent experiments with particle coherers seem to have confirmed the hypothesis that the particles cohere by a micro-weld phenomenon caused by radio frequency electricity flowing across the small contact area between particles. The underlying principle of so-called "imperfect contact" coherers is also not well understood, but may involve a kind of tunnelling of charge carriers across an imperfect junction between conductors. 119 Or it may not..

The IEEE, Institute of Electrical and Electronics Engineers, has other ideas about how the coherer works:

"The action of the waves on metallic powders has, however, remained some what mysterious; for ten years it has been the subject of important researches by Professor Lodge, M. Branly, and a very great number of the most distinguished physicists. It is impossible to notice here all these researches, but from a recent and very interesting work of M. Blanc, it would seem that the phenomenon is allied to that of ionisation." 120 or not! Ionisation is another word for electrical charge and as all electrical devices are charged this is just another way of saying they don't know how it works.

Oliver Heaviside

Radio-reflecting layers in the upper atmosphere.

Yet another non-scientific but prolific character of interest to these pages:

en.wiki:

"Oliver Heaviside FRS (1850 – 1925) (who) was a self-taught English electrical engineer, mathematician, and physicist who adapted complex numbers to the study of electrical circuits, invented mathematical techniques to the solution of differential equations (later found to be equivalent to Laplace transforms), reformulated Maxwell's field equations in terms of electric and magnetic forces and energy flux, and independently co-formulated vector analysis. Although at

odds with the scientific establishment for most of his life, Heaviside changed the face of mathematics and science for years to come.” 121
(Yet another amateur physicist of the day)

en.wiki:

“The Kennelly–Heaviside layer, named after Arthur Edwin Kennelly and Oliver Heaviside, also known as the E region or simply the Heaviside layer, is a layer of ionised gas occurring between roughly 90–150 km (56–93 mi) above the ground — one of several layers in the Earth's ionosphere. It reflects medium-frequency radio waves, and because of this reflection, radio waves can be propagated beyond the horizon.

Its existence was predicted in 1902 independently and almost simultaneously by the American electrical engineer Arthur Edwin Kennelly (1861–1939) and the British (amateur) physicist Oliver Heaviside (1850–1925). However, it was not until 1924 that its existence was shown by British scientist Edward V. Appleton, for which he received the 1947 Nobel Prize in Physics. In 1925, Americans Gregory Breit and Merle A. Tuve first mapped its variations in altitude.” 122

We see Heaviside described as a "physicist" coupled with "self-taught", something that would perplex and annoy today's academics.

Edward Appleton

Of interest but not unusual in these pages is the Nobel prize in physics, awarded to Appleton for the discoveries of others. He was awarded the prize for making measurements of reflections from atmospheric layers already discovered. He has even had one of the radio reflecting layers named after him to ensure his place in science history:

The Appleton Layer

talktalk.co.uk:

"Band containing ionized gases in the Earth's upper atmosphere, at a height of 150–1,000 km/94–625 mi, above the E-layer (formerly the Kennelly-Heaviside layer). It acts as a dependable reflector of radio signals as it is not affected by atmospheric conditions, although its ionic composition varies with the sunspot cycle. The Appleton layer has the highest concentration of free electrons and ions of the atmospheric layers. It is named after the English physicist Edward Appleton." 123

en.wiki:

"The existence of a reflecting atmospheric layer was not in itself a completely new idea. Balfour Stewart had suggested the idea in the late nineteenth century to

explain rhythmic changes in the earth's magnetic field. More recently, in 1902, Oliver Heaviside and A.E. Kennelly had suggested such a hypothesis may explain the success Marconi had in transmitting his signals across the Atlantic." 124

Schumann Resonances

en.wiki:

"The first documented observations of global electromagnetic resonance were made by Nikola Tesla at his Colorado Springs laboratory in 1899." 125

websters-dictionary-online.com:

"In 1899, Nikola Tesla, in his Colorado Springs experiments, transmitted extremely low frequency electromagnetic waves between the earth and ionosphere, up to the Kennelly-Heaviside layer (Grotz, 1997). Tesla made mathematical calculations and computations based on his experiments. He predicted the resonance frequency of this area within 15% of modern accepted experimental value. (Corum, 1986) In the 1950s, researchers confirmed the resonance frequency was at the low range 6.8 Hz." 126

They predicted the layer rediscovered by Appleton in 1902.

nobelprize.org:

"The Nobel Prize in Physics 1947 was awarded to Edward V. Appleton for his investigations of the physics of the upper atmosphere especially for the discovery of the so-called Appleton layer". 127

In these pages, there will be several other examples of a Nobel prize awarded to a scientist who did little to deserve it. The practice continues today because no one is prepared to say that the emperor has no clothes.

Tuned Circuits

Tesla 1891

en.wiki:

"Around July 1891, Nikola Tesla constructed various apparatus that produced between 15,000 to 18,000 cycles per second. Transmission and radiation of radio frequency energy was a feature exhibited in the experiments by Tesla which he proposed might be used for the telecommunication of information.

After 1892, Tesla delivered a widely reported presentation before the Institution of Electrical Engineers of London in which he suggested that messages could be transmitted without wires.

Later, a variety of Tesla's radio frequency systems were demonstrated during another widely known lecture, presented to meetings of the National Electric Light Association in St. Louis, Missouri and the Franklin Institute in Philadelphia.

128

All subsequent transmissions and receptions seem use the same patented tuning methods. U.S. Patent 645,576 and U.S. Patent 649,621

Jagadish Chandra Bose

en.wiki:

1894 "In November 1894, the Indian physicist, Jagadish Chandra Bose, demonstrated publicly the use of radio waves in Calcutta, but he was not interested in patenting his work." 129 It was already patented.

1894 again:

The Oxford Mail, Monday, 20 March 2000, has the headline "Museum rewrites 'wireless' history", It tells of an exhibition and how Sir Oliver Lodge and Dr Alexander Muirhead combining their expertise, had produced the world's first wireless telegraph apparatus, which was demonstrated on August 14, 1894.

oxfordmail.co.uk:

"A transmitter was set up on the original Clarendon physics building and a receiver in the museum's lecture room - 100m away. A message was passed, although no-one knows what was said. A year later, Marconi stole a march on Lodge and Muirhead when he borrowed some of their ideas and patented his own device." 130

It was to be another year before Guglielmo Marconi made a serious attempt at radio transmission. He seems to have "borrowed" his ideas from just about every wireless researcher on the planet.

1895 Alexander Stepanovitch Popov

fecha.org:

"In a May, 1895 Popov reported sending and receiving a wireless signal across a 600 yards distance. In March, 1897, Prof. Popov equipped a land station at Kronstadt and the Russian navy cruiser Africa with his wireless communications apparatus for ship-to-shore communications In about 1900, Russian history sources say either 1899 or 1901, Popov's wireless apparatus was used in what may have been the first ever use of radio communications to help a vessel in distress. The battleship General-Admiral Apraksin was going down amidst the ice floes of the Gulf of Finland with hundreds of sailors and officers aboard, but Popov's radio system enabled them to contact Hogland and Kutsalo islands 45 kilometers away. Those wireless stations relayed the distress messages and rescue orders to the icebreaker Ermak. 131 132

en.wiki:

"Beginning in the early 1890s he continued the experiments of other radio pioneers, such as Heinrich Hertz. In 1894 he built his first radio receiver, a version of the coherer. Further refined as a lightning detector, (?) it was presented to the Russian Physical and Chemical Society on May 7, 1895—the day has been celebrated in the Russian Federation as Radio Day." 133

Eugne Ducretet

1897: "A year after Marconi's experiments, Eugne Ducretet begins his trials of radio broadcasting. According to Ducretet, he built his devices using Popov's lightning detector (coherer) as a model. By 1898 Ducretet was manufacturing equipment of wireless telegraphy based on Popov's instructions. At the same time Popov effected ship-to-shore communication over a distance of 6 miles in 1898 and 30 miles in 1899."134

Karl Ferdinand Braun

en.wiki:

1897 "Ferdinand Braun joined the line of wireless pioneers. His major contributions were the introduction of a closed tuned circuit..." (Invented by Tesla.) 135

en.wiki:

"Braun's British patent on tuning was used by Marconi in many of his tuning patents. Guglielmo Marconi used Braun's patents (among others). Marconi would later admit to Braun himself that he had "borrowed" portions of Braun's work. In 1909 Braun shared the Nobel Prize for physics with Marconi for "contributions to the development of wireless telegraphy".136

The First Broadcast of Speech

1900 Reginald Aubrey Fessenden

Amplitude modulation. Speech, music etc.

en.wiki:

"Reginald Fessenden, experimenting with a high-frequency spark transmitter, successfully transmitted speech on December 23, 1900 over a distance of about 1.6 kilometers (one mile), which appears to have been the first audio radio transmission. At this time the sound quality was too distorted to be commercially practical, but as a test this did show that with further technical refinements it would become possible to transmit audio using radio signals." 137

1906 AM Radio Amplitude Modulation

en.wiki:

"AM radio began with the first, experimental broadcast on Christmas Eve, 1906, by Canadian experimenter Reginald Fessenden, and was used for small-scale voice and music broadcasts up until World War I." 138

radioblvd.com and ac6v.com:

"Reginald Fessenden first transmitted voice in 1900 using a spark transmitter but the audio quality was not commercially useable due to distortion from the poor quality of the carrier wave available from a spark transmitter. As early as 1903, Fessenden had been experimenting with mechanical transmitters - high frequency alternators - as a source of a pure continuous wave carrier for audio transmissions. NESCO (National Electric Signaling Company) was formed to finance Fessenden's research and his high frequency alternators were built by General Electric. In early December, 1906, " 139

en.wiki:

1904: "The U.S. Patent Office reversed its decision, awarding Marconi a patent for the invention of radio, possibly influenced by Marconi's financial backers in the States, who included Thomas Edison and Andrew Carnegie. This also allowed the U.S. government (among others) to avoid having to pay the royalties that were being claimed by Tesla for use of his patents." 140

One can't but wonder how Sir Oliver Lodge and Dr Alexander Muirhead fared amid all of this chicanery? It would be interesting to know if they also claimed Tesla's stolen patents as their own?

1909, The Joint Nobel Physics Prize to Guglielmo Marconi and Karl Braun
Marconi's company was failing and then more bad news - he had to share the prize with his chief competitor, Braun.

markpadfield.com:

"For Marconi himself, 1909 brought more good news: he was the first Italian to be awarded the Nobel Prize for Physics.

The bad - and, to many, bewildering - news was that he shared it with Professor Karl Braun, German (not the) inventor of the cathode ray tube and a founder of his company's chief competitor, Telefunken.

Before the ceremony in Stockholm held in December, the two physicists were reluctant to meet. When they did, Braun apologised handsomely, and conceded the prize should have been Marconi's alone." 141

This makes absolutely no sense as Marconi would later admit to Braun himself that he had "borrowed portions of his work" and Marconi's patents were later shown to belong to Tesla.

As we will see in later chapters, there is always an element of the unlikely when

awarding Nobel prizes to scientists.

1910, Miessner

ac6v.com:

"The first Cat's Whisker Detector invented by B. F. Miessner in 1910, who received The De Forest Audion Award in 1963. This patent was sold to John Firth for "a magnificent sum of \$200".

From the "On the Early History of Radio Guidance". Library of Congress Card # is 64-2115. 142

He patented it, but it's doubtful that he invented it.

web.mit.edu:

1904!

"Sir J. C. Bose holds the first patent worldwide to invent a solid-state diode detector (Cat's Whisker) to detect EM waves. The detector was built using a galena crystal." 143

"Detector for electrical disturbances, Patent Number 755,840, dated March 29, 1904, Application filed September 1901." 144

viewzone2.com:

1943, Marconi's claim to be the inventor of radio overturned,

"..the Supreme Court granted full rights to Tesla for the invention of radio, nullifying the claims of Marchese Guglielmo Marconi who had patented a two-tuned-circuit design and a more practical four-tuned-circuit modelled after Tesla's. Marconi's patent on the invention of radio was overturned by the U.S. Supreme Court because Tesla's work predated it (Case #369, 6/21/43). Marconi did succeed in beating Tesla as the first person to send a wireless telegraph across the Atlantic, which prompted Tesla to remark, "Let him continue. He is using seventeen of my patents." In addition, Tesla's 1903 patents 723,188 and 725,605 contain the basic principles of the logical AND circuit element basic to all computers." 145

We see how a Nobel Physics Prize for physics is awarded to a developer and not to the inventor of the technology - for marketing rather than for science. It's quite amazing that even today there are those who think that Marconi was the inventor of radio.

didyouknow.org:

"Bose had solved the problem of the Hertz not being able to penetrate walls, mountains or water. Marconi was present in the meeting of the Royal Society and it is thought that he stole the notebook of Bose that included the drawing of the (Bose) Mercuri Coherer with a telephone detector.

Marconi's Coherer, which he used in 1901, was the exact copy of that of Bose. Apparently Marconi was unable to explain how he got to the design. He said that an Italian Navy engineer called Solari had developed it, but Solari later denied it. Marconi then said that Italian Professor Timasina did, which later was exposed as a lie by another Italian professor, Angelo Banti, who claimed that the design was invented by signalman Paolo Castelli." 146

Edwin Armstrong and FM Radio

On September 26, 1905, Albert Einstein published his Special Relativity, but it took a while for it to sink into the consciousness of academia.

We now move to the 1930's and important changes in science and technology. It was a time when Albert Einstein's theories were beginning to take a firm grip on physics and physics was becoming 'counterintuitive'. The idea that only a physicist could do physics was becoming entrenched because Einstein's new theories were said to be accessible only to physicists. The end of the old theory of ether, its existence denied by Einstein, coincides with the end of a Golden Age of Invention in electronics.

The basics for all of our modern electronics were invented before this time, with the possible exception of the computer.

Armstrong's FM Radio in 1933 is within the limits of my "No new electronic technology after the 1930's", theory. He was an academic, although he is not, as is usually the case with pioneering electronics engineers, described as a physicist.

radio.about.com:

"Edwin Armstrong, American electrical engineer and inventor, is most commonly known for inventing frequency-modulated or FM radio in 1933. Frequency modulation or FM improved the audio signal of radio by controlling the noise static caused by electrical equipment and the earth's atmosphere. Edwin Armstrong received U.S. patent 1,342,885 for a "Method of Receiving High-Frequency Oscillations Radio" for his FM technology.

However, Edwin Armstrong should be known for inventing three key innovations: regeneration, superheterodyning, and frequency modulation. Every radio or television set today makes use of one or more of Edwin Armstrong's inventions."

147

According to en.wiki:

"The original heterodyne detector was pioneered by Canadian inventor Reginald Fessenden in 1905, but it was not pursued far because local oscillators available

at the time (the oscillating arc) were unstable in their frequency output. The vacuum tube electronic oscillator would not come along until 1912." 148

"The Inventor of FM Was a Little Nuts"

“The man who invented FM Radio, Edwin Armstrong (an American electrical engineer and inventor) (1890–1954), had bizarre habits and lived a life that ended tragically.

Armstrong loved radio towers and was prone to climbing them. He once even climbed to the top of the 450-foot RCA radio tower on top of the RCA Building in New York City and stood on the very top - absolutely infuriating the head of RCA at the time, David Sarnoff. Armstrong – who invented FM in 1933, committed suicide in 1954 by walking out of a high-rise building's window and falling to his death.” 149

However, he was probably driven nuts by the pounding he received from Lee de Forest and RCA: 150

The Thermionic Valve (Vacuum Tube or just Valve)

Thermionic emission

en.wiki:

"The phenomenon was initially reported in 1873 by Frederick Guthrie in Britain. While doing work on charged objects, Guthrie discovered that a red-hot iron sphere with a positive charge would lose its charge (by somehow discharging it into air). He also found that this did not happen if the sphere had a negative charge. Other early contributors included Johann Wilhelm Hittorf (1869–1883), Eugen Goldstein (1885), and Julius Elster and Hans Friedrich Geitel (1882–1889)." 151

Rediscovered by Edison in 1880.

en.wiki:

“Lee de Forest (1873 – 1961)

was an American inventor with over 180 patents to his credit De Forest invented the Audion, a vacuum tube that takes relatively weak electrical signals and amplifies them.”

De Forest is a name connected with the development of wireless telegraphy, he invented the Audion in 1906. In January 1906, de Forest filed a patent for a diode vacuum tube detector, a two-electrode device for detecting electromagnetic waves, a variant of the Fleming valve invented two years earlier. The Fleming valve was all but identical to the Audion invention of de Forest and it's difficult to understand how de forest managed to obtain a patent. Sir John Ambrose Fleming FRS (1849–1945) was an English electrical engineer and physicist. He is also known for inventing the first thermionic valve or vacuum tube, the diode, then

called the kenotron in 1904, two years before de Forest.

The Fleming valve is in turn, a development of the "Edison effect" of thermionic emission, discovered accidentally whilst Edison's team was researching the light bulb.

However, we also find that: "The phenomenon (the Edison Effect) was initially reported in 1873 by Frederick Guthrie in Britain...The effect was rediscovered by Thomas Edison on February 13, 1880, while trying to discover the reason for breakage of lamp filaments and uneven blackening (darkest near one terminal of the filament) of the bulbs in his incandescent lamps. And so can we assume that all three got the idea from an undisclosed source?

One year later, De Forest filed a patent for a three-electrode device that was a much more sensitive detector of electromagnetic waves. It was granted US Patent 879,532 in February 1908. The device was also called the de Forest valve, and since 1919 has been known as the triode...

...De Forest had, in fact, stumbled onto this invention via tinkering and did not completely understand how it worked.

De Forest "invented" a further most crucial element of his Audion without understanding how or why it worked? 152

So much for scientific methodology and theory.

en.wiki:

"While de Forest's addition of a third element to the Audion (the grid) and the subsequent move to modulated (voice) radio is not disputed, unsurprisingly, De Forest did not put his device to work but Armstrong's research and experimentation with the Audion moved radio reception beyond the crystal set and spark-gap transmitters to amplification. Radio signals could be amplified via regeneration to the point of human hearing with a loudspeaker. Armstrong later published a paper detailing how the Audion worked, something De Forest could not do. De Forest did not understand the workings of his Audion." 153

Armstrong made De Forest's idea work, but he paid dearly for his insight:

Fathom.com:

"Armstrong went after De Forest early on, while he was still a student (when) De Forest gave a lecture at Columbia about his radio tube. That evening, by showing De Forest that he did not understand the very tube that he had created, Armstrong began a lifelong angry discussion with him that ended in serious litigation. Nevertheless, when the value of Armstrong's regeneration circuit came to the fore (with the creation of the radio as we know it, after 1920), Lee De Forest sued him and claimed to have created regeneration. The suit went to the Supreme Court twice and, in 1933, the court decided in De Forest's favour for the second and final time." 154

agilewriter.com:

“RCA Uses its Enormous Power to Bankrupt Armstrong”

"That's when RCA and the other corporations who now wanted FM but were unwilling to pay for it, delivered a staggering blow to Armstrong. They got the FCC to change the frequencies allocated to FM, so that all the FM sets in existence at that time were rendered useless. RCA then developed and patented its own FM specification that was essentially a rip-off of Armstrong's idea. Armstrong sued of course, and RCA used its superior resources to keep the case tied up in the courts for years while they continued to make millions on products based on FM technology.

Though Armstrong had made millions from his earlier inventions, he spent it all on developing FM and the fighting in the courts over patent infringement suits. Over time, the court battles took their toll on his marriage as well. He had sold many of his assets and was already facing bankruptcy, and he needed even more money to pay his lawyers so they could continue the fight over his patents. He begged his wife to give him back some money he had given her several years earlier to save for their retirement, but she refused. One night in 1954, during a particularly heated argument, he took a swing at her with a fire poker and she left him for good.

Edwin Armstrong was a broken man. He never got to enjoy the financial rewards that his great contributions to communications technology should have brought him, and he couldn't go on any longer without his wife. One day he dressed up in a nice suit, put on his scarf, overcoat and hat, and walked out of his 13th floor apartment window at the New York River House. Though he was never able to compromise with those who had stolen from him, his widow eventually settled with RCA for one million dollars—the same amount he had turned down in 1940. By then, it was really a paltry sum compared to how much RCA had profited from cheating him. She was also able to reach settlements with the other corporations who had infringed on her husband's patents and ultimately received about 10 million dollars." 155

Nikola Tesla

Returning to Nikola Tesla, whose name has been abused and maligned by academia since the time of his death and even before. I'm told that until recently the US Smithsonian Institution Museum displayed his polyphase AC system next to a bust of Thomas Edison, a great insult, not to mention an unsurpassed show of ignorance.

“Tesla's name is:

Omitted in school textbooks.

Omitted in technical journals
Unknown even to some engineers” 156

I know that the inventor of the AC system is unknown to engineers because I have made a point of asking a number of them over many years. It follows that they were taught an untrue and distorted history of electricity at college and so, we must assume that such a manipulated and distorted history can only have originated within academic science.

Tesla's radio was of a different category to that of his contemporary Hertz. His intention was to transmit both communications and electrical power with the same system. This is poorly understood by most of Tesla's supporters and certainly not understood by academic science. The science that is presented to the public has never studied his loss-less power transmission system and never improved on his method of AC generation. The AC generators that feed our households and our industry with electricity are exactly the same as the ones that Tesla first installed at the first Niagara Falls A.C. power station.

We have a hundred year old power generation system at a time when there are more scientists than ever before in the history of the world and at a time when there never was such a need for new and clean energy. I think that there is a systems failure at the heart of science, or maybe academic science is not such an exact science.

From WikiTalk: a discussion about Tesla and Marconi:

“Regarding Mr. Susnjar’s other complaints, which may or may not have been directed at my commentary, the distinction between wireless transmission via radio waves, and via electrical conduction through the earth or upper atmosphere, is often lost on Tesla biographers. The latter is the mechanism which Tesla intended to utilize, and the former is the one that his contemporaries developed, and which became the basis of radio today.(He is speaking of an alternative system that most of us know nothing about.) The following excerpt from the description of Tesla’s American patent number 649,621, dated May 15, 1900 emphasizes the distinction between the two approaches to wireless communication:

It is to be noted that the phenomenon here involved in the transmission of electrical energy is one of true conduction and is not to be confounded with the phenomena of electrical radiation which have heretofore been observed and which from the very nature and mode of propagation would render practically impossible the transmission of any appreciable amount of energy to such

distances as are of practical importance.

(Here, we have yet another clear example of presentism, as both were considered as being the same thing, at a time when aether theory was the dominant force and all electromagnetic phenomena were vibrations in the aether medium)

He continues: "What I now claim as my invention is - 1. The combination with a transmitting coil or conductor connected to the ground and to an elevated terminal respectively, and means for producing therein electrical currents or oscillations, of a receiving coil or conductor similarly connected to ground and to an elevated terminal, at a distance from the transmitting-coil and adapted to be excited by currents caused to be propagated from the same by conduction through the intervening natural medium, a secondary conductor in inductive relation to the receiving-conductor and devices for utilizing the current in the circuit of said secondary conductor, as set forth."

157

Today's radios are thought not to require a ground connection, essential in Tesla's system, just one of a catalogue of differences between the Tesla and the Hertzian radio systems. We will return to this subject in a later chapter.

Mobile Phones thanks to a Hollywood actress Hedy Lamarr.

hypatiamaze.org:

Hedy Lamarr Hollywood actress and co-inventor of frequency-hopping spread-spectrum. Again a non-scientist, (her education ended at sixteen), gives us a major technology. How could such a technology arise from the academics with no preceding theory?

hypatiamaze.org:

"Today, spread spectrum devices using micro-chips, make pagers, cellular phones, and, yes, communication on the internet possible. Many units can operate at once using the same frequencies. Most important, spread spectrum is the key element in anti-jamming devices used in the government's 25 billion Milstar system. Milstar controls all the intercontinental missiles in U.S. weapons arsenal." 158

en.wiki:

"On August 11, 1942, US Patent 2,292,387 was granted to Antheil and "Hedy Kiesler Markey", Lamarr's married name at the time." 159

en.wiki:

"Avant garde composer George Antheil, a son of German immigrants and neighbor of Lamarr, had experimented with automated control of musical instruments, including his music for Ballet Mecanique, originally written for Fernand Lger's 1924 abstract film. This score involved multiple player pianos playing

simultaneously.

Together, Antheil and Lamarr submitted the idea of a secret communication system in June 1941. On August 11, 1942, US Patent 2,292,387 was granted to Antheil and "Hedy Kiesler Markey", Lamarr's married name at the time. This early version of frequency hopping used a piano roll to change between 88 frequencies and was intended to make radio-guided torpedoes harder for enemies to detect or jam." 160

Microwave Cooker

The microwave cooker was a spin-off from radio technology used in early radar. en.wiki:

"The use of high-frequency electric fields for heating dielectric materials had been proposed in 1934, (another 1930's discovery) for example US patent 2,147,689 (application by Bell Telephone Laboratories, dated 1937) ...This idea was not used for a technology until the heating effect of microwaves was discovered accidentally in 1945 by Percy Spencer, a self-taught American engineer." It melted a chocolate bar in his pocket. 161

Conclusion

After looking at the origins radio, its offspring and the widespread assumption that it is all as the result of a benevolent academic science bestowing its gifts upon mankind, I fail to see much input from academic scientists, theory, any evidence of scientific method, or even any indication as to where the original ideas came from in most of the technology above. But, as usual the credit is taken by something most insubstantial called 'science' and by default science becomes the property of academia who claim to be Science. Then given to those it has deemed to be heroes, but who have played little or no part. We start to see the beginnings of a manufactured mythological science, designed to support an ideal of science rather than anything substantial.

Academic science is keen to formulate theories that appear to fit the facts after the technology is up-and-running, contrary to the claims of science, that insists that theory comes first. The result of such theories is to halt any further progress that takes place outside of the accepted theory, like Tesla's loss-less power transmission. A new idea becomes pseudo-science because it fails to fit the Hertzian theory; a circular rationalisation; it's as if theory were sacrosanct and the technology a minor irritation. This customary, obligatory, anti-progress is the price we all pay for the dubious benefits of academic science, that is ultimately a librarian who falsely claims to have written all the books.

Chapter 4
Extraordinary Popular Delusions About Science
Radio Astronomy

"Every revolutionary idea seems to evoke three stages of reaction (by scientists).

They may be summed up by the phrases:

1- It's completely impossible.

2- It's possible, but it's not worth doing.

3- I said it was a good idea all along."

Arthur C. Clarke, probably quoting someone else.

SETI

The Search for Extra-Terrestrial Intelligence.

In 1960, Cornell University astronomer Frank Drake performed the first modern SETI experiment, "Project Ozma". The object of the experiment being, to search for radio signals from distant stars, dependent on the assumption that alien civilisations were transmitting signals in order to contact other civilisations with radio equipment just like his own. 162 The further assumption was that radio is the only method of communication for those who have aspired to scientific rationality and which is also assumed by science to be the mark of an enlightened civilisation.

The discovery of radio was attributed by mainstream science, to someone who did not discover it, they even gave him a Nobel prize which he shared with another who also did not invent radio. But, according to a High Court judgement in 1943, it was actually discovered by someone who, by and large, was opposed to much of the thinking of academic science. The logic of all of this is questionable even from these early days, and it's surprising that no one has raised the obvious questions about the sanity of those involved in the misinformation. After all, they have had the best part of a hundred years to get the history right?

Frank Drake was also the author of the famous Drake Equation that states:
 $N = R^* \times fp \times ne \times fl \times fi \times fc \times L$ - very impressive and scientific sounding.

Where:

N. is the number of extraterrestrial civilizations in our galaxy with which we might expect to be able to communicate

R^* . is the rate of star creation in our galaxy

fp. is the fraction of those stars which have planets

ne. is average number of planets which can potentially support life per star that has planets

fl. is the fraction of the above which actually go on to develop life

fi. is the fraction of the above which actually go on to develop intelligent life

fc. is the fraction of the above which are willing and able to communicate

L. is the expected lifetime of such a civilisation.

The problem with all this is that there is not one variable in the whole above equation that anyone can put a number to - it's all total brain-baffling gobbledygook... but it looks scientific.

One would think that starting a project of this kind, the scientists involved would look and see if anyone had done anything like it before and attempt to build on any successes. Not a bit of it: they completely ignored anything that went before and plunged headlong into the abyss, or the Water Hole, where they still reside

today, unsurprisingly, with zero results.

There is also a strange ambiguity in dealing with anything that refers to alien life - a connection with alien craft, UFOs or anything that even hints at the subject is taboo, verboten. And so we have scientists searching for alien radio operators, but avoiding the concept of alien space travellers like the plague. It's OK to listen for them but only crazy people look for them.

As is the custom, this has to be rationalised, and the attempt at logic says, that because academic science has no means or even any idea of how to reach distant stars, no one else in the galaxy can do so. While at the same time admitting that it's unlikely that we are alone - there would be no SETI if this were not admitted.

These far away intelligent races of living beings that SETI are trying to contact can easily be a million years ahead of us and yet they are unable to conquer space and still use snail radio to communicate across the galaxy? 163

40-odd Years of Non-Achievement

"Marking its 25th anniversary this year, the SETI Institute has conducted some of the worlds most profound and influential scientific research since opening its doors for business in 1985. The Institutes mission is to explore, understand, and explain the origin, nature, and prevalence of life in the universe. Put more simply, they seek an answer to a question that has vexed humanity ever since humans first looked up into the night sky and pondered our very existence: Are we alone?"164

That SETI have singularly failed to answer the question and are unlikely to do so, seems to be in-line with the ardent desire of science: to do nothing, but to control our thinking by replacing research with pie-in-the-sky publicity aimed at endless projects. Hollywood style hype and hollow reputation building are the things that pass for achievement, but are, in reality, a road to nowhere.

I read, at least once a week: "This latest research may help scientists to understand xxxx in the future". The research is then filed away in some dusty archive, never again to see the light of day. The future is a pipe dream that never materialises, but hypnotises the gullible into raptures of a bright scientific tomorrow. SETI becomes science fiction incarnate and Hollywood is happy to make movies.

Technology

On numerous occasions academic scientists have made it abundantly clear that any science not done in their name, without their approval or contrary to their theorising, is pseudo-science. Technology is often called science and TV programs and magazine articles that refer to themselves as scientific, invariably present more technology than science. The assumption is then made that technology, being science, means that science is technology and it follows that technology

arises from science. There is a problem with this, in that the research for these pages shows, more often than not, that a given technology did not arise from an academic scientific source. In fact most technological breakthroughs were achieved by lone individuals with no formal scientific training. This is certainly the case with our next example:

Radio Astronomy and Grote Reber

en.wiki tells us, and most assume it to be true:

"Karl Guthe Jansky (October 22, 1905 – February 14, 1950) was an American physicist and radio engineer who in August 1931 first discovered radio waves emanating from the Milky Way. He is considered one of the founding figures of radio astronomy." 165

Karl Jansky is presented as the first radio astronomer, but it was Grote Reber, an amateur radio enthusiast who discovered radio astronomy, something that most people today see as the domain of astrophysicists and cosmologists. But, Reber built the first parabolic radio astronomy dish at home in his back yard, with no help or advice from any scientific source.

Karl Jansky is described as a physicist in his Wiki biography, but at the time of his accidental discovery of radio noise from space he was working as a radio engineer. He had done a physics degree at university as do many others who are not described as physicists. But, because he has been elevated to scientific stardom, he also has to be seen as a brother scientist.

Nature

nature.com:

Education: The PhD factory

“The world is producing more PhDs than ever before. Is it time to stop?” 166

He was a teacher for most of his working life. His claim to fame, a discovery made while working as an engineer for Bell Telephone Laboratories in Holmdel, NJ. The Bell Company asked him to investigate the 10-20 meters band for sources of static interference that may have caused problems with short-wave radio-telephone communication transmissions. In 1932, he detected the first radio waves from a cosmic source, but for the rest of his life did nothing more for radio astronomy. He was not a radio astronomer and his antenna was not of the ideal kind used for radio astronomy and never intended to be so.

Three types of static were identified by Jansky:

Nearby thunderstorms, distant thunderstorms, and a faint steady hiss of unknown origin. This was eventually traced to the direction of the centre of the Milky Way galaxy. Jansky spent over a year investigating, at which point Bell withdrew his funding. The cosmic static was not a problem for radio propagation and therefore

not worth investigating, although he publicised his results in the Proceedings of the Institute of Radio Engineers in December of 1932. The only person who seems to have taken an interest was Grote Reber. 167

Reber wrote to Jansky and asked for a job working alongside him at Bell Labs, but was surprised and disappointed to learn that Bell Labs was not interested in pursuing Jansky's discovery of extra terrestrial radio noise. Reber contacted a number of observatories and universities but none was interested in cosmic star static.168

The Worlds First Radio Telescope designed and built by Reber See figure 2

n1maa.com:

"The astronomers were afraid of it because they didn't know anything about radio. The radio people weren't interested because it was so faint it didn't even constitute interference. Nobody was going to do anything. "So, all right, if nobody was going to do anything, maybe I should do something". "So I consulted with myself and decided to build a dish!", Reber said. 169

ieeeghn.org:

"His backyard radio dish was 31ft (9.5m) in size, could be pointed accurately, and cost \$1300. It was constructed by Reber in 4 months while temporarily unemployed. With this instrument he constructed the first celestial radio maps of the sky, plotting radio strength vs.position. (Robertson P. 1992: 14-16)". 170

Although Jansky showed no further interest in radio astronomy he has since been elevated in status, even having the Jansky, a measure of flux density named after him. By contrast, Reber, the first to attempt systematic, scientific, radio astronomy has remained all but anonymous in academic circles. Such is the selective history concocted by science.

There was no theory that predicted cosmic radio transmissions of this kind at that time and it's hardly surprising that the astronomers would stick to theory. They tended, then as now, to be more interested in mathematical theory than actual observations. (The writer has contacted several astronomers on this point and they all seem to agree that they are first mathematicians and second astronomers.) It was to be another ten years before the scientific community caught-up with the idea and took notice of Reber's work. There seems to be much confusion on this point today and an assumption is made that Reber was backed by science from the onset. Not true.

Reber became disillusioned with academic science, something that seems to have remained with him for the rest of his life. His refusal to join the academic ranks is the reason he became persona non grata in circles scientific and his name all but forgotten.

n1maa.co:

"Because Reber had "...no academic connection and unclear credentials..." his

paper drew little attention from the astronomy community. He soon became discouraged by the lack of support for his work and his vision to build a large radio telescope. Reber describes..."First, the astronomers had a nearly complete lack of knowledge of electronic apparatus, viewing it as black magic. Second, and more important, the astrophysicists could not dream up any rational way by which the radio waves could be generated, and since they didn't know of a process, the whole affair was at best a mistake and at worst a hoax." Grote described the scientific community as "self appointed pontiffs looking over my shoulder giving bad advice. Fundamentally, the kind of things I want to do are the kind establishment men will not have any part of." 171

Nothing changes.

The "no theory" stratagem crops up over and over again in these pages, usually used as a means of hand-waving away a new discovery. If the discovery persists, like the emissions from space, a theory is concocted and academic science is then able to claim the original idea like an adopted child. The history of the discovery is then revised to give the illusion that it was the theory that was the most important element. Alternatively, science will grant an honorary award to the discoverer and welcome them into the fold. Either way academic science wins and receives a standing ovation for doing so. Reber refused to join the club and was excluded...

At the time of the birth of radio astronomy it would have been all but impossible for an academic scientist to have conceived of the same idea under the prevailing theory and this serves as a classic example of theory being a disincentive to further astronomical discovery. Theory predicted that only hot cosmic bodies like stars would emit radio waves and emissions from the planet Jupiter discovered in the 1950's after Ginzburg's new theory, would have been considered absurd at an earlier date. Scientific theory is often an obstacle on the path of progress and discovery.

1940's Theory

"Reber found that the radio power was weaker at higher frequencies, contrary to what was predicted by the (1940's) theory of thermal radiation. This theory applies to the light from stars or any hot object such as molten iron or stove burners, and predicts that the radio emission increases at higher frequencies. But Reber found just the opposite relation for the Milky Way. Some other, "non-thermal", process had to be at work.

It was not until the 1950s that a Russian physicist, V.L.Ginzburg, worked out the theory of synchrotron radiation, which explains the observed radio spectrum." 172 Reber was not a big bang theory believer; he believed that red shift was due to repeated absorption and re-emission or interaction of light and other electromagnetic radiations by low density matter, over intergalactic distances, and he published an article called "Endless Boundless Stable Universe", which outlined

his theory. Similar theories were presented by Fred Hoyle and Halton Arp, also rejected in favour of the Big Bang that has become a permanent and immovable feature. 173

And so, we see that radio astronomy, presented as if it were academic science is no such thing and is just usurped and manipulated to fit the prevailing paradigms of academia. The story of radio astronomy continues, using Reber's ideas:

answers.com:

"It was reading (Grote) Reber's results that stimulated Jan Oort to pose the problem that led to Hendrik van de Hulst's discovery of the 21-centimeter hydrogen emission." 174

en.wiki:

"Hendrik Christoffel "Henk" van de Hulst (Utrecht, November 19, 1918 Leiden, July 31, 2000) was a Dutch astronomer and mathematician. In 1944, while a student in Utrecht, he predicted the existence of the 21 cm hyperfine line of neutral interstellar hydrogen. After this line was discovered, he participated, with Jan Oort and Alex Muller, in the effort to use radio astronomy to map out the neutral hydrogen in our galaxy, which first revealed its spiral structure. 175

However, a map had already been made by Reber.

en.wiki:

"... but Reber refused a research appointment from Yerkes. He turned his attention to making a radiofrequency sky map, which he completed in 1941 and extended in 1943. He published a considerable body of work during this era, and was the initiator of the "explosion" of radio astronomy in the immediate post-Second World War era." 176

strw.leidenuniv.nl:

"At that time (1944) scientific news from the United States had not reached Europe for several years. But news had arrived earlier which was to fundamentally change astronomy. An American engineer, and radio amateur, Grote Reber, had proceeded from the discovery made several years earlier by Karl Jansky, in Jansky's investigation of the source of interference which disturbed long-distance communication systems. Reber had himself constructed a steerable antenna and with this instrument had made a map of cosmic radio emission. The emission was particularly strong in the general direction of the center of the Milky Way. Reber's map, together with the news of an interpretation by two American astronomers that the emission could not be explained in terms of known mechanisms, reached Oort in Leiden. Oort immediately saw the challenge of a new subject of astronomical research, and he also realized that radiation at radio wavelengths would penetrate the cloudy Dutch sky.

At a meeting of the Nederlandse Astronomen Club held at the Leiden Observatory on April 15, 1944, the possibilities and prospects of radio astronomy were

discussed for the first time. Oort had asked Henk van de Hulst to consider the possibility of observing a spectral line in the radio regime. At the meeting, Henk gave a talk in which he suggested that neutral atomic hydrogen, which in its hyperfine transition radiates and absorbs at a wavelength of 21 cm, might be expected to occur at such high column densities as to provide a spectral line sufficiently strong as to be measurable. Shortly after the end of the war several groups set about to test this prediction. The 21-cm line of atomic hydrogen was detected in 1951, first at Harvard University followed within a few weeks by Dutch observations made in Kootwijk and by Australian ones made near Sydney." 177

answers.com:

"Edward Mills Purcell .is credited with the discovery of nuclear magnetic resonance in 1945. (We will meet Mr Purcell again when we look at MRI and NMR) His scientific achievements included being the first scientist to detect radio emissions originating in the hydrogen of galaxies and his investigations into solid-state physics are still considered pioneering." 178

en.wiki:

"Purcell also made contributions to astronomy as the first to detect radio emissions from neutral galactic hydrogen (the famous 21 cm line due to hyperfine splitting), affording the first views of the spiral arms of the Milky Way." 179

blackwellpublishing.com:

"Shortly after the end of the war, several groups set about to test this prediction. The 21 cm line of atomic hydrogen was detected in 1951, first at Harvard University followed within a few weeks by Dutch observations made in Kootwijk and by Australian ones made near Sydney." 180

The first, but by no means the last example of a scientist, Purcell, being elevated far beyond the level of his actual achievements for what can only be described as political reasons. Three groups were looking for the already predicted 21 centimetre line of hydrogen and all three found it within weeks of each other. Purcell was just one of a team who were the first, after two years of research. 181

Radio emissions from Jupiter, no theory.

nasa.gov:

"Our identification of Jupiter as a radio source is not based directly on reasoning, but more on luck," Franklin, a scientist at the Carnegie Institution of Washington, later recounted." 182

As science always works from a point of hindsight, it is seldom mentioned these days that the chance discovery of radio emissions from Jupiter in 1955, by Bernard Burke and Kenneth Franklin came as a complete surprise to astronomers. Or, if the astronomers were unaware of the lack of a theory, then it was a complete surprise to the physicists. The theory, used up until that point did not

allow for non-thermal emissions from sources such as planets, and radio signals were only expected to emanate from hot bodies such as stars.

nrao.edu and en.wiki:

"It was not until 1950 that a Russian physicist, V.L.Ginzburg, worked out the theory of synchrotron radiation, which explains the observed radio spectrum. Synchrotron radiation (radio noise) results from electrons moving at speeds close to the speed of light in magnetic fields." 183

Another example of a technology before a theory.

astronomyonline.org:

"The gas giant planets (Jupiter is one) emit more heat than they receive so are more prone to emit radiation in the radio bands. The most common form of radio emission is by way of Synchrotron Radiation." 184

History, Synchrotron Radiation

en.wiki:

"Synchrotron radiation was named after its discovery in a General Electric synchrotron accelerator built in 1946 and announced in May 1947 by Frank Elder, Anatole Gurewitsch, Robert Langmuir, and Herb Pollock in a letter entitled "Radiation from Electrons in a Synchrotron..."

...It was first detected in a jet emitted by M87 in 1956 by Geoffrey R. Burbidge, who saw it as confirmation of a prediction by Iosif S. Shklovskii in 1953, but it had been predicted several years earlier by Hannes Alfvén and Nicolai Herlofson in 1950.

T. K. Breus noted that questions of priority on the history of astrophysical synchrotron radiation is quite complicated, writing: "In particular, the Russian physicist V.L. Ginzburg broke his relationships with I.S. Shklovsky and did not speak with him for 18 years. In the West, Thomas Gold and Sir Fred Hoyle were in dispute with H. Alfvén and N. Herlofson, while K.O. Kiepenheuer and G. Hutchinson were ignored by them." 185

According to the above, synchrotron radiation had already been observed in lab-based electronic equipment in the 1940's, ('We knew about it all along') but there was certainly no connection made to radio emissions from Jupiter or any other cosmic body.

Of interest, the Jupiter radio emissions surfaced again in connection with the 'Velikovsky Affair' and his book 'Worlds in Collision' published April 3, 1950, in which Velikovsky predicted that Jupiter would emit radio energy.

Carl Sagan disagreed:

en.wiki:

"Regarding Jupiter's radio emissions, Sagan noted that "all objects give off radio waves if they are at temperatures above absolute zero." 186

By Jove

Since *Worlds in Collision* was published in 1950 and as the discovery of radio emissions from Jupiter was in 1955 and that it came as a complete surprise to science, it would have been impossible for Velikovsky to have derived his prediction from a scientific source. As we have seen above, no theory was available for science to predict the radiation from Jupiter's belts until after 1956 at the very earliest. The general acceptance by science of a theory that was considered controversial at the time would have certainly taken much longer. This leads our reasoning to the conclusion that at the time of discovery and for several years afterwards it was a mystery to science as to why there were Jupiter emissions at all.

There is much regarding all of this that is confusing and decidedly cock-eyed in nature. Sagan, with the customary scientific hindsight-slight-of-hand, treats the idea of radio emission from Jupiter as if it were a foregone conclusion, based on already existing science - something it certainly was not; call it the "We knew about it all along", syndrome.

This habit of scientists who when reading the past history of science, do so in the light of present-day knowledge, persists to this day and even seems to be compulsory in order to obtain peer approval.

Had this been common knowledge as Sagan seemed to suggest, the detection of Jovian radio waves would have been announced by Reber and several academic researchers who realised (after the discovery) that they had, in fact, recorded Jupiter themselves.

"On the Recent Discoveries Concerning Jupiter and Venus" was a letter published in *Science* magazine (December 21, 1962, Vol. 138, pp. 1350-52) from Princeton University Prof. Valentine Bargmann and Columbia University astronomer Lloyd Motz concerning two of Velikovsky's predictions, one on radio noises from Jupiter, the other on the heat of Venus.

Velikovsky.info:

"Soon after that date, the text of the lecture was deposited with each of us [it is printed as supplement to Velikovsky's *Earth in Upheaval* (Doubleday, 1955)]. Eight months later, in June 1954, Velikovsky, in a letter, requested Albert Einstein to use his influence to have Jupiter surveyed for radio emission. The letter, with Einstein's marginal notes commenting on this proposal, is before us. Ten more months passed, and on 5 April 1955 B. F. Burke and K. L. Franklin of the Carnegie Institution announced the chance detection of strong radio signals emanating from Jupiter. They recorded the signals for several weeks before they correctly

identified the source.

This discovery came as something of a surprise because radio astronomers had never expected a body as cold as Jupiter to emit radio waves." 187

Worlds in Collision, a book written by Immanuel Velikovsky and first published April 3, 1950 predicted radio emissions from Jupiter. There can be no doubt that it was Velikovsky who was the first to make such a prediction.

Throughout these pages we will see that there are names that repeat in regard to discoveries anticipated by those who are not part of the academic science nexus, two of the most notable being Nikola Tesla and Imanuell Velikovsky. They also happen to be among the most abused by academics and we will return to this theme.

John H Nelson of RCA and academic prejudice.

The following is quite amazing, not least because John Nelson was doing work very similar to that of Karl Jansky, seen above.

eham.net:

John H. Nelson's theory of propagation:

Is there anything to it?

By David Dalton, K9WQ

eham.net:

"In March 1951, John H. Nelson, an engineer for the RCA Communications Co. in New York, published an article in RCA Review describing a theory for predicting shortwave radio propagation over the North Atlantic. Nelson developed the theory by comparing planetary positions relative to the sun with logs of propagation conditions maintained at RCA's receiving station at Riverhead, Long Island.

The article said that certain configurations of the six inner planets correlated with degraded propagation conditions. Nelson was not dogmatic about his theory. Rather, in the article and in a follow-up article published in May 1952, he encouraged further study. Nelson believed that his theory was about 85 percent accurate in its predictions." 188

w4uvh.net:

" I immediately thought of the work of a John H. Nelson of RCA from the 1950's. He made his living by predicting shortwave propagation conditions using the alignment of the planets. His employer, RCA Global Communications was a prime user of (Short-wave)SW for cablegrams in the days before communications satellites and undersea fibre-optic cables. Since the orbits and future positions of the planets are totally predictable, Nelson was able to do long term propagation forecasts using his technique. He was also propagation editor for 73 magazine until 1982." 189

The writer of the following has done some enquiring computer analyses into the methods used by Nelson with positive results:

eham.net:

"More recently, David Dalton, K9WQ, did some follow up tests of Nelson's theory. He tested past propagation records against planetary positions going back in time to see if there was any correlation."

His conclusion is that there are some interesting correlations and he suggests additional study.¹⁹⁰

The following, 'more scientific' study however, shows no correlation at all.

Eham.net:

"Shortwave Radio Propagation: Analysis of the Forecasts of John Nelson

Geoffrey Dean Correlation 1983, 3.1, 4-37.

This study examines Nelson's claims that heliocentric planetary aspects correlate with shortwave radio quality (hard aspects make it worse) and that they can be used to improve the accuracy of forecasts.

Computer analysis of 2006 half-day or quarter-day quality forecasts (based on planetary positions) made by Nelson for RCA during 1964-5, and 4960 daily forecasts made for 73 Magazine during 1966-82, failed to find support for his claims. There was no significant correlation between forecast and outcome (mean $r = 0.01$), and the outcome on days forecast as poor was not significantly different from that on days forecast as good.

This writer is saying, in effect, that RCA Global Communications were paying Nelson for years of doing nothing and continued to pay him for making incorrect predictions about something they considered very important and would have certainly checked. In addition there were his 4,960 daily forecasts for '73 Magazine', read by radio amateur enthusiasts who seem not to have noticed that they were all wrong?

Eham.net again:

"Nelson's forecasts performed considerably worse than US Government forecasts and a control forecast based on the quality one solar rotation before." ¹⁹¹

It seems that the study of cosmic effects on radio propagation does not lend itself easily to modern scientific analysis and this may have something to do with the fact that it encroaches on two taboo subjects for scientists: The obvious first one being its connection to Astrology. The second is the dogma that nothing but gravity can affect the earth or the sun at planetary distances. Something that NASA is beginning to find embarrassing in the light of recent discoveries.

Handbook of Unusual Natural Phenomena

William Corliss

EFFECT OF ASTRONOMICAL BODIES ON RADIO TRANSMISSION, P166

"In the late 1940's and early 1950's, J. H. Nelson of RCA was attempting to discover a method of forecasting shortwave radio transmission conditions. His studies led him to conclude that while solar activity was important, other

astronomical conditions were also involved. Here is a brief excerpt from his controversial 1952 paper. "Cyclic variations in sunspot activity have been studied by many solar investigators in the past, and attempts were made by some, notably Huntington, Clayton, and Sanford, to connect these variations to planetary influences. The books of these three investigators were studied and their results found, sufficiently encouraging to warrant correlating similar planetary interrelationships with radio signal behavior. However, it was decided to investigate the effects of all of the planets from Mercury to Saturn instead of only the major planets as they had done. The same heliocentric angular relationships of 0, 90, 180, and 270 degrees were used, and dates when any two or more planets were separated by one of these angles were recorded.

"Investigation quickly showed there was positive correlation between these planetary angles and transatlantic short-wave signal variations. Radio signals showed a tendency to become degraded within a day or two of planetary configurations of the type being studied. However, some configurations showed better correlation than others.

"Considerable study was devoted to the most severe degradations and led to the discovery that when three planets held a multiple of 90 degrees' arrangement among themselves, the correlation was more pronounced. These arrangements were called 'multiple configurations'; [they] exist when two planets are at 0 degree with each other and a third planet is 90 degrees or 180 degrees away from them. Also, a multiple exists when two planets are separated by 180 degrees with a third planet 90 degrees from each. These multiples are quite common. A more uncommon type of multiple is the case where all three planets are at 0 degree with each other. From the few cases recorded, this type of multiple shows the least correlation.

"Many of the multiples are completed in the space of a few hours, being accompanied by sharp severe signal degradation. At other times, the multiple may take several days to pass, being accompanied by generally erratic conditions during the period" (Electrical Engineering, 71:421,1952).

Nelson's work was attacked on the basis that the planets exert no known forces strong enough to affect terrestrial conditions, but the astrological overtones of Nelson's papers made the controversy more emotional than usual. The RCA work, however, was done solely for practical engineering purposes without prejudice one way or another.

Nelson's correlations are certainly not without precedent, as illustrated by this notice in Nature. "In a recent communication to the Editors, Mr. P. A. de G. Howell, 77 Glandovey Road, Fendation, Christchurch, N.W., New Zealand, claims to have observed during 1938-1939 and 1944-1945, a correlation between the variation in long-distance transmission conditions at short wavelengths and the

phase of the moon. It was observed that there was a minimum of background noise at high signal strength with little tendency to fade for about two or three days on either side of full phase, these conditions changing to a maximum of noise with poor signals and fading around the time of new moon" (Nature, 159: 396, 1947).

The moon's gravitational attraction does create tides in the upper atmosphere and ionosphere that can conceivably affect radio transmissions; thus the lunar effect is scientifically acceptable whereas planetary effects are not." William Corliss Nelson's charts do look somewhat like astrological charts, and the black and white, authoritarian mind of the scientist is bound to produce a knee-jerk reaction. But this can only be described as prejudice and is certainly not science. It matters not if Nelson was or was not onto something. Nothing even remotely resembling Astrology or a host of other related subjects, that so offend the sceptics, will be considered for study by science. 'The influence of the planets is too weak to affect anything on earth', is the party line used to rationalise the 'cannot possibly work' dogma and even if Nelson's methods worked well, 'it's due to other unspecified effects'. It is under the influence of such closed-minded inhibition that science is constructed and by default, so is our education system.

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Tesla, Marconi, Todd and John H. Nelson of RCA
An Historic Report On Life In Space:
Tesla, Marconi, Todd
by C. D. Jackson and R. E. Hohmann
International Business Machines Corp. Kingston,

AMERICAN ROCKET SOCIETY
17th ANNUAL MEETING AND
SPACE FLIGHT EXPOSITION
PAN PACIFIC AUDITORIUM
LOS ANGELES, CALIFORNIA
NOVEMBER 13 - 18, 1962

Commentary

Introduction:

Our attention was directed toward the existence of this paper by one of our colleagues in the scientific community. After further inquiry, it was found that this paper is archived at the Linda Hall Library (an independent research library

of science and technology, 800-662-1545) in Kansas City, Missouri. The paper is archived on microfiche and, after further investigation, we found that no original hard copy is obtainable from either the Linda Hall Library or IBM's archives. We then ordered a photocopy of the paper be made from microfiche and sent to NIDS. What we present below are scanned images of this photocopy in JPG format which is the lowest image format size obtainable for this document.

The text and figures 1 and 4 (not reproduced here) are clear and legible after scanning, but we found that figures 2 and 3 are difficult to understand as they are photographic data from a Jenkins Radio-Camera (ca. 1924).

The Linda Hall Library provided three photocopies of the page containing the four figures using different contrasts for each to help us find the best copy of these microfiche images. Thus, we provide below two scanned images of figures 2 and 3 to let the viewer see for themselves what we believe to be the two best presentations of them. Figures 2 and 3 are difficult to understand or interpret since they represent photographic data from the Jenkins Radio-Camera.

During the years 1899-1924 three experimental scientists, Nikola Tesla, Guglielmo Marconi, and David Todd (working independently of each other) observed laboratory data and related phenomenon which suggested the possibility that they were monitoring interplanetary communications. During the same period (1899) -1924) the Russian theorist Konstantin Tsiolkovsky deduced a model of an intelligence existing independently of terrestrial influence. Tesla, Marconi, and Todd did not know that they were working with identical data, nor did they know that these data corroborated, in a quantitative manner, the theoretical model built by Tsiolkovsky.

This paper presents the investigations and experimental data of Nikola Tesla, Guglielmo Marconi and David Todd. The data are first brought together in a historical model (1899-1924) and then are shown to be the natural complement of a current theoretical model (1959-1962). These data are then recommended for assembly into a quantitative five model according to the theoretical outline described by Tsiolkovsky.*1

Our purpose in this paper is to examine the original data of Tesla, Marconi and Todd in response to a rhetorical inquiry presented by the Office of the Director of Defense Research and Engineering, asking: "What research is being done to keep abreast of the scientific advances of the past... to see that there is not needless duplication of effort? Did the advances of the past fail to find application due to a lack of need for application at the time, or failure to have developed some technique or material ancillary to the application of the scientific advance?"

For purpose of economy-of-presentation, biographical details of Tesla, Marconi, Todd and Tsiolkovsky are omitted and only as much historical background is used as is necessary to establish a chronology of events.

Tesla: Experiments in High-Frequency (1892-1907)

As early as 1892, Nikola Tesla had defined the use of the magnetic field of the terrestrial globe as a means of signal and energy transmission. To reduce this idea to practice, Tesla designed and built equipment capable of producing high-frequency currents, including the ability for tuning both transmitting and receiving coils to any desired frequency or wavelength.

Tesla's Wardencllyffe Tower

In a paper delivered at the 1893 meeting of the National Electric Light Association, Tesla stated that the purpose of his laboratory investigation was to know what is the capacitance of the earth, and what charge does it contain if electrified.

"Though we have no positive evidence of a charged body existing in space without other oppositely charged electric bodies being near," said Tesla, "there is a fair probability that the earth is such a body, for by whatever process it was separated ... it must have retained a charge as occurs in all processes of mechanical separation."

Tesla continued his lecture, stating that the intent of his calculations was "... to ascertain at what period the earth's charge when disturbed, oscillates, with respect to an oppositely charged system or known circuit."

In effect Tesla was theorizing that the planet Earth has a circuit-identification, i.e., a 'signature' of its own, and that, given the proper equipment, he could broadcast this identity wholesale into the universe.

Tesla's views regarding the origin of the earth are derived from ideas proposed by Sir George Darwin (1845-1912), e.g., that the moon was torn from the Earth by solar tides cf. *Mysteries of the Moon*, Dr. Harold Urey, *New York Times*, October 8, 1961.

By 1896 Tesla developed a prototype oscillator of sufficient capacity that he was able to demonstrate a loop circuit which was tied in with the earth's magnetic field. Test of the oscillator at the Houston Street Laboratory (New York) in 1896 are best remembered for the earthquake tremors that were distributed over an area of twelve city blocks. Three years after the Houston Street effort Tesla was now ready to begin a full scale experiment. For this purpose he had constructed a special laboratory near Colorado Springs, Colorado.

The Colorado laboratory (Figure 1) was located on a vast expanse of plain, 2000 meters above sea level. The entire laboratory was designed in keeping with Tesla's plan to make the terrestrial globe a propagation device for the transmission of energy.

Figure 1.(not reproduced) With reference to Figure 1, the mast is 280 feet high

and is topped with a copper ball approximately three feet in diameter. The interior of the building was walled in a circular manner to accommodate the winding of a primary coil 75 feet in diameter. In operation, surges of power were driven, alternately, into the earth and outward from the top of the mast. Broadcast wavelengths were registered at 2000 meters. Banks of incandescent lights plugged into the ground 26 miles from the laboratory-site flowed and flashed throughout the experiments. Specialized instrumentation built to record the experiments at the Colorado laboratory was sensitive to the point that Tesla could detect and catalogue every type of atmospheric electrical disturbance within a radius of 1100 miles.

It was during the tests conducted in Colorado in 1899 that Tesla detected the phenomenon which he described as an interplanetary communication. Speaking of the data that, unexpectedly, had registered on his instruments Tesla said that the signals took place "... periodically, and with such a clear suggestion of number and order that they were not traceable to any cause then known to me. I was familiar ... with such electrical disturbances as are produced by the sun, Aurora Borealis and earth currents, and I was as sure as I could be of any fact that these variations were due to none of these causes. The nature of my experiments precluded the possibility of the changes being produced by atmospheric disturbances Although I could not decipher their meaning, it was impossible for me to think of them as having been entirely accidental ... a purpose was behind these signals ...they are the results of an attempt by some human beings, not of our world, to speak to us by signals .. I am absolutely certain that they are not caused by anything terrestrial."

Following the experience in Colorado in 1899, Tesla became increasingly reluctant to release further details via the press and other public media. There is reason to believe, however, that the phenomenon Tesla recorded in Colorado, in 1899, consisted of three parts which, eventually, Tesla identified in terms analogous only to our present-day Information Theory.

Tesla's efforts to respond in kind with a fourth part were therefore understandably abstruse to the point where "... for particular reasons," he said, the "... full technical report descriptive of the apparatus and results would be reserved for the records of the academies of science."

Marconi-Todd: Observations and Experimentation (1899-1924)

On March 27, 1899, while Tesla was completing construction of the Colorado laboratory, Guglielmo Marconi concluded his first significant communication experiment: wireless transmission/receiving across the English Channel.

The achievement (transmission of the code-letter 'V' from Wimereaux, France, to South Foreland, England - a distance of 50 miles) was the culmination of personal convictions and laboratory efforts closely resembling the equipment approach taken by Tesla. "Electrical actions or manifestations," said Marconi in 1897, describing his basic patent, "are transmitted through the air, earth, or water by means of electric oscillations of high frequency."

And again, as with Tesla, Marconi's method of inquiry was to search for, and to duplicate the prototypes already existing in nature.

Experimental techniques, according to Marconi's view are "... no more than a simple consequence of observing and studying the means employed by nature to obtain her effects of heat, light, of magnetism across space. As the heat and light of the sun upon which depend the life of our planet are transmitted across millions and millions of kilometers of space, as the light of the most distant stars, as the electrical and magnetic perturbations of nature are manifested to us after having crossed the most immeasurable distances, it appeared to me {Marconi} that by adopting means similar to those adopted by nature, it should be possible to transmit these effects at our will..."

The correctness of Marconi's approach, i.e., finding his prototypes in the phenomena of nature, and implementing his findings with compatible devices, was aptly demonstrated on December 12, 1901, with the transmission of the first transatlantic message. Signals (a repetition of the code-letter "S") sent from the 25 Kilowatt station at Poldhu (Pold-ju) in Cornwall, England, were received via a kite-borne antenna flown from St. Johns, in Newfoundland, a distance of 1800 miles. Following this success and the eventual establishment of an international Wireless Telegraph Company, Marconi once again turned to basic research.

To ensure personal independence, Marconi fitted out a floating laboratory (the 220 foot yacht Elettra). In this environment Marconi could work "...at all hours of the day and the night, finding without delay suitable grounds for all kinds of experiments which would be difficult and complicated to carry out on land." It was in September, 1921, aboard the Elettra, while conducting atmospheric experiments in the Mediterranean area, that Marconi detected the phenomenon which he described as an interplanetary communication. The first report of this experience was released by J. C. H. MacBeth, London Manager of the Marconi Wireless Telegraph Company.

"The signals", MacBeth said, "registered high in the meter band, although the maximum length of earth-produced waves at the time was 14,000 meters. The theory that the waves were produced by electrical disturbances was disproved by the regularity of the pulses. Although the pulses apparently consisted of a code, the only signal similar to earth codes was one resembling the letter V in the

Marconi Code. Marconi himself expressed the belief that the signal had originated ... at some point in outer space."

In his own discussion of the signals Marconi stated that he expected interplanetary communications to take the form of a "... transmission of pictures accompanied by a simple code."

In this statement Marconi anticipated by 3 years the results of the remarkable "listening" experiment conducted by Dr. David Todd, then professor of Astronomy at Amherst College, Massachusetts.

On the night of August 22, 1924, the planet Mars approached to within thirty-four and a half million miles. Realizing that this close an approach would not come again until the year 2000, a "listening" experiment was arranged by Dr. Todd. At Dr. Todd's suggestion the U.S. Government, through diplomatic channels, requested that all countries with high-power transmitters turn off their equipment for 5 minutes every hour from 11:50 p.m. August 21, to 11:50 p.m. August 23.18

A radio-photo message device was used to record results of the experiment. The device was attached to a receiving set and adjusted to a wave-length of 6000 meters. Incoming radio signals received during the test period were converted to light signals which, in turn were printed on a reel of photo-sensitive tape five inches wide. Figure 2 (left) Figure 3 (below) The printed tape, following the experiment, was 25 feet long, comprising 16 printed frames, and contained a pattern of dots and dashes (Figure 2) plus some configurations of grouped signals (Figure 3) located at approximately 30 minutes intervals on the tape.

The rationale for determining whether the signals reported by Tesla, Marconi and Todd, i.e., between 1899 and 1924, are the result of random noise, electrical leaks, or the effects of various diathermy machines, or whether the signals are authentic, requires first of all that the data be assembled into a historical model. The second requirement is that the model agree with a theoretical construct. And, finally, that in the matching of the historical model to the theoretical construct there be neither forcing nor expedient collusion. We shall examine all three of these conditions.

Historical Model

As shown in Figure 4 there is a consistency of signal-to-noise-response between the sending of the Morse 'V' in March, 1899, and the monitoring of an unknown identical response in September, 1921. In this first cycle the signal-to-response time was 22 years. The consistency holds true again for the sending of the Morse 'S' in December, 1901, and the monitoring of the Morse 'S' plus an additional code in August, 1924. Again the signal-to-noise time was 22 years. No other data are known.

Prudence demands that we not surmise and add more to the model than actually exists.

Theoretical Model

If we regard the historical model (Figure 4) as a discrete period of time (1899-1924) marking the very earliest attempts at communication by means of electromagnetic radiation, then, according to the hypothesis of Dr. Frank D. Drake (Radio Astronomy Observatory, Green Bank, West Virginia), other older civilizations searching the universe for radiation from abodes of life would "... detect the very early transmissions of a civilization having just discovered radio. Using passive observation equipment on the order of a very powerful radio telescope, detection of these primitive efforts would be reliable and quick. Drake's hypothesis agrees closely with the data of the historical model. Tesla's Colorado experiments in 1899 were, using Drake's words, "... the very early transmission of a civilization having just discovered radio". The immediate detection of Tesla's experiments by means of passive observation equipment is strongly suggested in the delayed signal-echo-phenomena observed by Hals, Stormer, Van Der Pol, and E. V. Appleton (1927-1928),²⁴ and the careful calculations and experimental data by Budden and Yates (1952) concluding that the delayed echo-phenomena they were examining was in fact the result of planar reflections from a system "... fixed in space relative to the earth and moving [in orbit] permanently with the earth."

"Once a civilization is discovered," says Drake, continuing his hypothesis, "it is expected that ... an introductory signal [be sent] to the new found civilization." In this regard the multi-million volt surges of radio noise generated by Tesla during the Colorado experiments in 1899 were intended to produce electrical waves " ... of such magnitude that, without the slightest doubt, [the] effect will be perceptible on some of our nearer planets." During a pause in the experiments there had been noted by Tesla - and anticipating by 60 years Drake's comment above - a series of incoming signals "... taking place periodically and with such a clear suggestion of number and order ... the feeling in constantly growing on me that I had been the first to hear the greeting of one planet to another."

The physical characteristics of the monitored signals as listed in the historical model (Figure 4), and as posited in theory, likewise present a remarkable similarity. The signals monitored by Tesla (1899), Marconi (1921); and by Hals, Stormer and Van Der Pol (1927) are characteristically simple. The signals are, basically, a "response-in-kind" repeating the original transmission, although on a higher-frequency, and performing, at least in part, a recognition function. In this respect the historical model supports Sebastian von Hoerner's opinion that "... the

nature of the signals will be defined entirely by the purpose they serve and by the most economical way to achieve this purpose."

The simplicity appropriate to a recognition of a civilization just having discovered electromagnetic techniques is likewise consistent with M. H. Briggs' theory that another civilization would "... deliberately render the signal capable of detection as an artificial transmission by sending a 'message' composed of some regularly repeated pattern of impulses."

A more sophisticated theory - which nevertheless is exactly analogous with the radio-photo data recorded during Dr. Todd's listening experiment (1924) is offered in Drake's private suggestion that other civilizations would "... send out pulses in clusters - a series of pulses followed by a pause, another series, another pause, and so on. The number of signals in each pulse could stand for intensity of light or dark and we could build up a picture on the basis of the information received." The radio-photo tape used in the listening experiment (1924) recorded 16 increments or frames, of clustered pulses, each increment separated by a 30 minute pause. The format of the pulses suggested two distinct efforts: signals, and images (Figures 2 and 3). A most interesting comment here, and certainly beyond explanation, is Marconi's emphatic statement to the press (September, 1921) following his own experience of monitoring signals originating from an unknown point in space, that he fully expected interplanetary communication to be in the form of "...transmission of pictures accompanied by a simple code."

The final piece of information carried over from the historical model is the data representing signal-to-response time. Tesla's experience, as we have noted earlier, is identifiable with the Budden and Yates conclusion pointing to the existence of a system fixed in space relative to the earth and moving in orbit permanently with the earth, and with F. D. Drake's theory of a passive observation system tuned to detect and to respond quickly to new sources of electromagnetic radiation. With Marconi and Todd, however, the signal-to-response time on both occasions was 22 years. And here, too, the historical model agrees most exactly with the contemporary theory that the probability of occurrence of life in the universe is best predictable on the basis of considering first those stars most resembling our own sun. The following table, prepared by Su-Shu-Huang³⁴ of the Institute of Advanced Studies, at Princeton, quantitatively reconstructed this theory:

Nearby Stars On Whose Planets (If Any) Living Beings Have A Better-Than-Average Chance To Develop

Star	Distance in	Light Years	Spectral Type
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Luminosity

Sun	G2	1.00	
Epsilon Eridani 0.34		10.8	K2
Tau Ceti 0.38		11.8	G4

Signal-to-response times rated at the speed of light place the transmitted/monitored signals of Marconi and Todd exactly in the Epsilon/Eridani/Tau Ceti bracket.

The Antecedence of the Historical Model

The experience of Tesla, Marconi, and Todd were, respectively, personal and individual; there was no joint effort or comparative analysis either before or after the experience. In each instance a particular phenomenon was observed and recorded - and nothing more. As discrete events representative of isolated scientific phenomena distributed over the years 1899-1924, the value of each event at the time of occurrence was, therefore, impossible to ascertain. In composite form, however (as brought together in Figure 4), there comes into existence and without in any way distorting the individual events themselves - an inter-relationship of events. This inter-relationship (and the potential it carries) is the male factor that makes theory come alive with meaning. For this reason neither the events of the historical model nor the data of the theoretical construct can, alone, be meaningful. The fact that the historical model came into existence first, and that the shaping of the theoretical model came 35 years later (beginning in 1959), is less important than the fact that each is a natural complement to the other.

Tsiolkovsky: An Advanced Theoretical Model

In the development of a theoretical model to give meaning to the historical events of 1899-1924 we have used the interim period of 35 years as a guarantee, i.e., an insulation, to assure that the complementary matching is natural rather than collusive. We have presented an historical approach to the subject and, deliberately, have avoided any attempt to interpret the data, reserving this subject for a specific paper. As a preliminary estimate, however, there are indications that the final interpretation will proceed more along the lines of Information Theory, and Image Processing, rather than in the conventional manner of reducing signals to alpha-numeric characters. The factors of guidance in this future effort are the intuitions inherent in the advanced theoretical model proposed by Konstantin

Tsiolkovsky (1857-1935). In the samemanner that the model comprising the historical events of 1899-1924 is complementary to the opinions of the present-day scientific community, so too can we predict with some accuracy that a quantitative analysis of these same historical data will advance the state of the art to the level of Tsiolkovsky's theory of interplanetary communication.

Even before Shannon's development of the Information Theory (1948), Tsiolkovsky had maintained that "...the simple repetition of signals is an obsolete method, convenient only in the initial state of interstellar communication, in a form of short and simple signals." Probing deeply for answers to the questions of entropy and negentropy, Tsiolkovsky worked with concepts that would not be related to signal theory until many years later with the advent of Wiener, Shannon, and Weaver.

"Science cannot avoid strange paths" was Tsiolkovsky's dictum. In this paper we have utilized the historic approach in an attempt to mark out the beginning of just such a path, and, insofar as possible, to remove some of the strangeness.

Dr. David Todd was professor emeritus of astronomy at Amherst College.

Special Acknowledgement

The authors extend a particular acknowledgement of the assistance of Mrs. Walter V. Bingham for making available for use in this paper private documents and notes belonging to her father, the late Dr. David Todd.

More info' :

Listening to Mars: 1924 <http://www.shorpy.com/node/12482>

From the book Series The Unexplained Mysteries of Mind Space and Time
SIGNALS FROM THE STARS?

<http://kbmorgan.com/ufos/ufofiles/db707.htm>

US Navy Ordered to Listen for Martian Radio Broadcasts in 1924

<http://www.examiner.com/article/us-navy-ordered-to-listen-for-martian-radio-broadcasts-1924>

NY Times

RADIO HEARS THINGS AS MARS NEARS US; A 24-Tube Set in England Picks Up Strong Signals Made in Harsh Dots. VANCOUVER ALSO FAVORED At Washington the Translator of McLean Telegrams Stands by to Decode Any Message.

[http://select.nytimes.com/gst/abstract.html?](http://select.nytimes.com/gst/abstract.html?res=F1061FF6355412738FDDAA0A94D0405B848EF1D3)

[res=F1061FF6355412738FDDAA0A94D0405B848EF1D3](http://select.nytimes.com/gst/abstract.html?res=F1061FF6355412738FDDAA0A94D0405B848EF1D3)

Chapter 5

Television Personalities

History of Television

“Any theory will account for some facts; but only the true explanation will satisfy all the conditions of the problem ...”. William Crookes.

This chapter follows along the now well trodden path taken by radio and radio astronomy - to find a true-as-is-possible history of television invention and development. To ask about the actual, as opposed to mythical contributions made by academic science; to dispel myths attached to well known names and fabled scientific heroes.

In the following Wiki article, we see that J.J. Thomson, an English physicist is mentioned first and the actual inventor, chemist William Crookes, who did most of the work, is mentioned last. This is due to scientific revisionism and its habit of claiming all invention for its beloved sons...

"The experimentation of cathode rays is largely accredited to J.J. Thomson, an English physicist who, in his three famous experiments, was able to deflect cathode rays, (They had already been deflected by others) a fundamental function of the modern CRT. The earliest version of the CRT was invented by the German physicist Ferdinand Braun in 1897 (untrue) and is also known as the Braun tube. It was a cold-cathode diode, a modification of the Crookes tube with a phosphor-coated screen." 1

Let us see what really happened?

We need first to look at the large and invaluable contribution made by William Crookes and more important at the time, the X-ray and nuclear research during

the development of Crookes type tubes that eventually became the cathode ray tubes used in TV until relatively recently. The cathode ray tube was also the forerunner of what was to become the particle accelerator, being used in the early days in just the same way as the LHC technology of today.

Although we will see that academic physicists were involved in cathode ray experimentation, they were only able to build their reputations on a firm foundation provided by the almost unheard of today, chemist and psychical researcher William Crookes.

William Crookes and the Cathode Ray Tube.

Historically, by far the most important component of electronic TV is the cathode ray tube, used in all TV sets and monitors until it was replaced by the flat screen (Flat Panel Display).

The vacuum tube or valve may or may not have evolved from the Crookes tube, I have found no connection even though they work on the same principle. It was used in radio and later in TV for amplification, switching and rectification, to be eventually replaced by the transistor, yet another important technology like so many within these pages, originating from the work of non-academic inventors prior to the 1930's, when everything in science changed.

Crookes, who was self taught, is now called a physicist, but he was educated to be a chemist and became an amateur physicist, something that does not exist today, or is not taken seriously by academia. He was also a spiritualist and a member of the Society for Psychical Research, an interest that would certainly cause concern for the materialist, Humanist denizens of the scientific community of our day. If Crookes were alive in our time he would be referred to as a pseudo-scientist or at best a 'tinkerer', a derogatory expression when used by a physicist that denotes a departure from theory. Let us look at his tinkering? 2

Radioactivity

en.wiki:

"In his investigations of the conduction of electricity in low pressure gases, he discovered that as the pressure was lowered, the negative electrode (cathode) appeared to emit rays (the so-called cathode rays, now known to be a stream of free electrons, and used in cathode ray display devices). Crookes investigated the properties of cathode rays, showing that they travel in straight lines, cause phosphorescence in objects upon which they impinge, and by their impact produce great heat. As these examples indicate, he was a pioneer in the construction and use of vacuum tubes for the study of physical phenomena. He was, as a consequence, one of the first scientists to investigate what are now called plasmas. He also devised one of the first instruments for the study of nuclear radioactivity, the spintharoscope." 3 4

en.wiki:

"In 1903, Crookes turned his attention to the newly discovered phenomenon of

radioactivity, achieving the separation from uranium of its active transformation product, uranium-X (later established to be protactinium). He observed the gradual decay of the separated transformation product, and the simultaneous reproduction of a fresh supply in the original uranium. At about the same time as this important discovery, he observed that when "p-particles", ejected from radioactive substances, impinge upon zinc sulfide, each impact is accompanied by a minute scintillation, an observation which forms the basis of one of the most useful methods in the technique of radioactivity." 5

en.wiki:

"In 1861, Crookes discovered a previously unknown element with a bright green emission line in its spectrum and named the element thallium. Crookes also identified the first known sample of helium, in 1895. He was the inventor of the Crookes radiometer." 6 7 8

Encyclopædia Britannica, Cathode Ray Tube:

"...he devoted himself from 1856 entirely to scientific work of various kinds at his private laboratory in London. His researches on electrical discharges through a rarefied gas led him to observe the dark space around the cathode, now called the Crookes dark space. He demonstrated that cathode rays travel in straight lines and produce phosphorescence and heat when they strike certain materials." 9

In 1838 Michael Faraday first described the characteristics of the gas discharge tube, a glow witnessed in a partially evacuated tube with an applied a high voltage. "But, "Probably the most important research using cathode-ray tubes was performed in 1875 by the English physicist William Crookes. In order to confirm the experiments of Plucker and Hittorf, Crookes designed his own vacuum tube from which the air could be almost completely removed. So great an improvement over Geissler's tubes were these that the "Crookes tube" quickly became the standard vacuum tube for use in scientific experiments. Crookes continued Plucker's experiments with magnetic fields, confirming the glow was easily deflected. (See J.J.Thomson below) He also installed tiny vanes within his tubes. As the current was applied the vanes would turn slightly (it was as if they were blown by a gust of wind)." 10 11

Heinrich Geissler

discoveriesinmedicine.com:

"The German team of Heinrich Geissler (1815-1879) and Julius Plucker (1801-1868) pioneered the study of cathode-ray tubes. Geissler was a skilled glassworker, employed by the University of Bonn (Germany) as a maker of scientific instruments."

Crookes tubes were being produced on an almost industrial scale at the time. 12

en.wiki:

"Geissler was awarded an honorary doctorate in 1868."

He did not have a qualification in physics when he did his important work and

was not a physicist as stated in the Wiki article. 13

Johann Wilhelm Hittorf

discoveriesinmedicine.com:

"The next scientist to conduct important research using vacuum tubes was Johann Hittorf (1824-1914) in 1869"... 14

Hittorf was a scientist but did little to advance the cathode ray tube, his most noted work being in the area of ion movement using the Crookes tube in his experiments.

"He noticed that when there was any object placed between the cathode and the illuminating side of the tube, then the shadow of that object appeared."

Something already done by William Crookes. 15

Eugen Goldstein

"German scientist Eugen Goldstein (1850-1930) first dubbed Crookes's rays "cathode rays" in 1876." ...and little else of benefit to TV cathode ray tube development. 16

Phillip Lenard

en.wiki:

"As a result of his Crookes tube investigations, he showed that the rays produced by irradiating metals in a vacuum with ultraviolet light were similar in many respects to cathode rays. His most important observations were that the energy of the rays was independent of the light intensity, but was greater for shorter wavelengths of light.

These latter observations were explained by Albert Einstein, whose Serbian wife, Mileva Maric, worked in Lenard's lab for a time, as a quantum effect." 17 I don't think Einstein's wife "worked as a quantum effect", it was the ultraviolet light.

discoveriesinmedicine.com:

"In 1892, Phillip Lenard (Nobel Prize winner for work on cathode rays.) followed up on Heinrich Hertz's discovery that under certain conditions cathode rays could penetrate metal (X-rays?). Lenard succeeded in passing cathode rays through a window of thin metal set into the side of a Crookes tube. The rays exited the tube through the window into the air. Lenard proved that cathode rays were not a phenomenon exclusive to a vacuum. While performing a similar experiment in 1895, the German physicist Wilhelm Roentgen (1845-1923) accidentally discovered an even more penetrating form of radiation, which he called X-ray radiation." 18 19

And so, Roentgen, so beloved by the scientific community, had discovered something already discovered by Lenard, Tesla and Hertz as we will see below, but because they failed to actually call them x-rays, they were disqualified from the discovery?

And then we find that...

en.wiki:

"In April 1887, five years before Lenard, Nikola Tesla began to investigate X-rays using high voltages and tubes of his own design, as well as Crookes tubes. From his technical publications, it is indicated that he invented and developed a special single-electrode X-ray tube, which differed from other X-ray tubes in having no target electrode. The principle behind Tesla's device is called the Bremsstrahlung process, in which a high-energy secondary X-ray emission is produced when charged particles (such as electrons) pass through matter. By 1892, Tesla performed several such experiments, but he did not categorize the emissions as what were later called X-rays. (As if failing to use the phrase 'X-ray' makes them unqualified.)

Tesla generalized the phenomenon as radiant energy of "invisible" kinds. Tesla stated the facts of his methods concerning various experiments in his 1897 X-ray lecture before the New York Academy of Sciences. Also in this lecture, Tesla stated the method of construction and safe operation of X-ray equipment. His X-ray experimentation by vacuum high field emissions also led him to alert the scientific community to the biological hazards associated with X-ray exposure." 20 Tesla was vilified and called a madman by academic science.

en.wikik:

"Wilhelm Conrad Roentgen (1845 1923) was a German physicist, who, on 8 November 1895, produced and detected electromagnetic radiation in a wavelength range today known as X-rays or Roentgen rays, an achievement that earned him the first Nobel Prize in Physics in 1901." Yet again the prize goes to someone other than the discoverer. 21

Tesla must have researched X-rays for some time before Roentgen, as we see below, his lab' and X-ray research being destroyed in the year that Rontgen made his first X-ray discovery:

en.wiki:

"Tesla continued research in the field. He performed several experiments prior to Roentgen's discovery (including photographing the bones of his hand; later, he sent these images to Roentgen) but did not make his findings widely known; much of his research was lost in the 5th Avenue laboratory fire of March 1895." 22

Roentgen was well aware of Tesla's experiments. In fact, Tesla knew about X-rays in 1887. He was lecturing on existing X-ray equipment, his experiments already completed and even to the extent of health and safety issues only two years after Roentgen's so called discovery in 1895.

And we find at Wikiradiography.com:

"Historically, the first X-ray tube was invented by Sir William Crookes. It was used to make a visible fluorescence on minerals." 23

Karl Ferdinand Braun

crtsite.com:

"...Braun a German physicist, interested in the just discovered Cathode rays worked and experimented with Crookes tubes. When he was working at the Physics Institute of the Strasbourg University (from 1895-1918) he developed the first cold Cathode Ray tube with magnetic beam deflection (the same effect discovered by Plucker and Hittorf in 1869 and the cold cathode dates back to Faraday.) and a mica screen covered with phosphor to produce a visible spot. (already discovered by Crookes) The tube, built for him by Franz Mller successor of Geissler was called after its inventor, the Braun tube. Braun used this tube as an indicator tube for studying the effects of Cathode rays in order to visualize alternating currents (discovered by Nikola Tesla) and described this 1897, this was in fact the first oscilloscope." 24

inventors.about.com:

"In 1897 Braun introduced a CRT with a fluorescent screen, known as the cathode ray oscilloscope." 25

4.nau.edu

"Crookes also discovered that some minerals would glow if placed in the tube. This is the phenomenon of cathodoluminescence (production of visible light by electron bombardment"...) 26

Braun had most of his work already done by Crookes.

crtsite.com:

"The Braun tube, (See the illustration at the link) this small early 1900 tube is in fact a cold Cathode Crookes tube with an internal mica screen covered with phosphorescent paint." 27

It's hard to point a finger at the contribution made by Braun. He used a Crookes tube and added a screen of material that had been researched by Crookes, using beam deflection by Plucker and Hittorf for 'his' oscilloscope? He gave the world the little screen with the green glow and the wiggly line, so beloved in early science fiction movies that added a missing mystique to science and the work of TV repair men.

Heinrich Hertz

dartmouth.edu:

"Heinrich Hertz, a leading German experimentalist, tried to deflect cathode rays with an electric field, but was not able to do so. Since he knew that charged particles are deflected by electric fields, Hertz concluded that cathode rays were not charged particles, but waves that could be deflected with magnetic fields." 28
J.J. Thomson

en.wiki:

"The experimentation of cathode rays is largely accredited to J.J. Thomson, an English physicist who, in his three famous experiments, was able to deflect cathode rays, a fundamental function of the modern CRT." 29

en.wiki continues:

"In May–June 1897 Thomson investigated whether or not the rays could be deflected by an electric field. Previous experimenters (Hertz) had failed to observe this, but Thomson believed their experiments were flawed because their tubes contained too much gas." 30

The New World Encyclopaedia says:

"In his second experiment, he investigated whether or not the rays could be deflected by an electric field (something that is characteristic of charged particles). Previous experimenters had failed to observe this, but Thomson believed their experiments were flawed because they contained trace amounts of gas. Thomson constructed a cathode ray tube with a practically perfect vacuum, and coated one end with phosphorescent paint. Thomson found that the rays did indeed bend under the influence of an electric field." 31

The Cambridge Cavendish Museum tells us:

"Eventually Thomson realised that the absence of electric deflection was due to the residual gas in the tube being ionised by the rays. The ions were attracted to the electric plates and cancelled out the applied field. 'The thing to do was to get a much higher vacuum. This was more easily said than done... However after running the discharge through the tube day after day without introducing fresh gas, the gas on the walls and electrodes got driven off and it was possible to get a much better vacuum. The deflection of the cathode rays by electric forces became quite marked..." 32

Deflection by magnetic/electromagnetic means ("a fundamental function", see above) was known by Braun, certainly known by Crookes and as we can see above it was also known to Plucker and Hittorf in 1869 and Arthur Schuster in 1890 below). And so, we see that Thomson added two new electrodes that had been known about for years in his famous experiment.

Thomson's Cathode Ray Tube

Both the Thomson electrostatic and electromagnetic tubes were used for future applications. The Thomson electrostatic CRT being an alternative used mainly for oscilloscopes rather than an improvement.

web.lemoyne.edu:

"In all modern CRT monitors and televisions, the beams are bent by magnetic deflection, a varying magnetic field generated by coils and driven by electronic circuits around the neck of the tube, although electrostatic deflection is commonly used in oscilloscopes, a type of diagnostic instrument." 33

The electrostatic plates of Thomson were for the electrical measurements involved in his sub-atomic studies and not CRT improvements. His electrostatic CRT system was not in general use for TV tubes although it was used in certain applications.

From notes on Thompson's Nobel lecture:

"William Crookes was a productive researcher and highly original and speculative thinker in many areas of physics and chemistry. (See chapter 14, note 29.) His work on electrical discharges in vacuum tubes in the late 1870s laid some foundational work on which Thomson built; indeed, his "Crookes tubes" were widely used in cathode ray research..." 34

What the above is really saying, is that Crookes had already done the research. Thomson was not interested in improving cathode ray tubes, so much as making a name for himself in the field of subatomic physics - for which he received the Nobel prize.

Discovery of the Electron

en.wiki:

"He was awarded a Nobel Prize in 1906, "in recognition of the great merits of his theoretical and experimental investigations on the conduction of electricity by gases." 35

Again, he was following-up on the plasma work started by Crookes. When stealing the thunder of previous inventors, the sons of science retreat into an obscure theoretical quasi-land where anything goes and are thereby able to receive the prestigious honours that should have gone to those more deserving.

en.wiki says:

"Thomson is remembered mainly for his discovery of the electron." 36

en.wiki again:

"Sir Joseph John "J. J." Thomson, OM, FRS (1856 1940) was a British physicist and Nobel laureate. He is credited for the discovery of the electron..." 37

egglescliffe.org.uk:

"One theory was that the rays were waves traveling in an invisible fluid called the "ether." At that time, many physicists thought that this ether was needed to carry light waves through apparently empty space. Another possibility was that cathode rays were some kind of material particle. Yet many physicists, including J.J. Thomson, thought that all material particles themselves might be some kind of structures built out of ether, so these views were not so far apart." 38

The 'discoverer' of the electron was an ether theory man who would be laughed to scorn by the science today. But the discovery and theory of the electron were based in, and emerged out-of, the debunked ether theory.

Richard Laming

en.wiki also says that:

"Between 1838 and 1851 "he (British surgeon Richard Laming c.1798-1879) published a series of papers speculating about the electrical makeup of atoms. He hypothesized that there existed sub-atomic particles of unit charge; perhaps one of the first persons ever to do so." 39

1891 George Johnstone Stoney

en.wiki:

(Astronomer), "Stoney's most important scientific work was the conception and calculation of the magnitude of the "atom of electricity". In 1891, he proposed the term 'electron' to describe the fundamental unit of electrical charge, and his contributions to research in this area laid the foundations for the eventual discovery of the particle by J.J. Thomson in 1897." 40

experiment-resources.com:

1897. "Thomson found out that the charge to mass ratio was so large that the particles either carried a huge charge, or were a thousand times smaller than a hydrogen ion. He decided upon the latter and came up with the idea that the cathode rays were made of particles that emanated from within the atoms themselves, a very bold and innovative idea."41

Bold in as much as it was someone else's idea, and innovative in that it won him a Nobel prize. Unlike Stoney and Schuster below, the originators of the idea, he decided to stick with the results of the experiments of others and bluff-it-out.

1890. Arthur Schuster

en.wiki:

"The German-born British physicist Arthur Schuster expanded upon Crookes' experiments by placing metal plates parallel to the cathode rays and applying an electric potential between the plates."

The field deflected the rays toward the positively charged plate, providing further evidence that the rays carried negative charge.

By measuring the amount of deflection for a given level of current, in 1890 (Arthur) Schuster was able to estimate the charge-to-mass ratio of the ray components. However, this produced a value that was more than a thousand times greater than what was expected, so little credence was given to his calculations at the time." 42

But precedence was given to Thomson for the same thing.

chemteam.info:

"1890 Arthur Schuster calculates the ratio of charge to mass of the particles making up cathode rays (today known as electrons) by measuring the magnetic deflection of cathode rays and Joseph John (J.J.) Thomson first becomes interested in the discharge of electricity through a gas at low pressure, that is to say, cathode rays." 43

Thomson and Arthur Schuster attended the same college, did the same research and knew all about each-others work. The American Association of Physics Teachers think that Thomson was awarded the Nobel because he was a better experimental physicist than Schuster. 44

It seems that Nobel prize winners require an intangible something, "The Right Stuff", that has little to do with contribution, originality or ideas. Just the staying

power required whilst being transformed into a scientific celebrity. The rays had already been deflected by a magnet and as magnetism and electricity are part of the same phenomenon it's a fair bet to say that an electric field should also deflect the cathode rays or there is something seriously amiss with electronic theory.

chemteam.info:

"At this time there was great rivalry between German and British researchers. As concerning the nature of the cathode ray, the Germans tended to the explanation that cathode rays were a wave (like light), whereas the British tended to believe that the cathode ray was a particle. As events unfold over the next few decades, both will be proven correct. In fact, J.J. Thomson will be awarded the Nobel Prize in Physics in 1906 for proving the electron is a particle and his son, George Paget Thomson, will be awarded the Nobel Prize in Physics in 1937 for showing that the electron is a wave." 45

We are thus made aware of the flimsiness of scientific rationale and how much it depends upon reputations. But sometimes reputations are constructed on even less evidence:

dartmouth.edu:

"Heinrich Hertz, a leading German experimentalist, tried to deflect cathode rays with an electric field, but was not able to do so. Since he knew that charged particles are deflected by electric fields, Hertz concluded that cathode rays were not charged particles, but waves that could be deflected with magnetic fields." 46

lemoyne.edu:

"The case of the electron raises several interesting points about the discovery process. Clearly, the characterization of cathode rays was a process begun long before Thomson's work, and several scientists made important contributions. In what sense, then, can Thomson be said to have discovered the electron? After all, he did not invent the vacuum tube or discover cathode rays. Discovery is often a cumulative process. The credited discoverer makes crucial contributions to be sure, but often after fundamental observations have been made and tools invented by others. Thomson was not the only physicist (Note how all the contenders are now called physicists) to measure the charge-to-mass ratio of cathode rays in 1897, nor the first to announce his results. (See Pais 1986.) But Thomson did carry out this measurement and (later) the measurement of the particles's charge, and he recognized its importance as a constituent of ordinary matter." 47

As we see from the above, the early cathode ray tube, that went on to become a particle accelerator for physicists, was used to enhance the reputations of academic scientists in the field of theoretical particle physics and by default it became their property.

None of them saw its potential as a picture tube as this would have been

technology, something anathema to academic science, that prefers obscure theory. The wholesale reassignment of ideas, and failure to give credit for the ideas of non-academic researchers is the rule and not the exception.

There is a huge difference between researchers/discoverers like Crookes and Tesla and academic scientists like J J Thomson, in that the former gave us a technology to prove every theory, whereas the latter did not think this was necessary.

Has the knowledge that an electron behaves like both a particle and a wave advanced technology? I think it would be difficult to say that it has, but science fosters the myth that it will someday be of use. The weapons of obscurity and inscrutability are what keep academics in a job.

When you switch on an electric light, the light does not use-up electrons like putting coal on a fire. When an electric motor is switched on, it does not use-up electrons like petrol in the fuel tank of a car. No electron is changed or used-up, they don't alter at all. If the electron exists, it is as a carrier of energy, an energy that remains completely unexplained, unidentified by science.

There is a web site that graphically demonstrates an electric current fed into the primary of a transformer. The transformer has been split into two and the two halves are connected by a couple of meters of iron wire. Out of the secondary of the transformer appears an electric current. What this shows is that there is no need for electrons to drive our appliances and that the energy we call electricity can be transferred via the magnetic field of a transformer alone. Our homes could be wired with iron wires and our electrical appliances run from a transformer secondary, completely removing the need for electric current in the house wiring. It is but a short step to imagine the utility company supplying energy by magnetic impulse alone; no insulation required! 48

"Let's add a core! Barium Titanate should work. Or PZT ceramic (Lead Zirconate Titanate.) Our "coil" should attract such a core, which means we could build a solenoid actuator. Or a motor. Or just use the PZT core to pick up certain things. Things like lint, and little bits of paper. It's not an electromagnet, it's an electro-electret!" 49

We start to realise that the idea that the electron is a particle or a wave or that it even exists, is a non-question and totally irrelevant as regards any of our existing technology. It makes not a jot of difference to anything that affects the lives of the average person. A scientist will tell us, with the usual circular logic, that all of our electronic technology is thanks to the discovery of the electron by JJ Thomson. It makes sense to those who believe the revisionism, but as we can see from the history in these pages, most of today's technology was already around in its basic form before anyone had ever heard of JJ.

What has been achieved in the intervening years is development.

Neither Faraday, Crookes, Geissler, Tesla, Braun or Hertz used the word electron before it was made popular by Thomson. But we nevertheless see the fruits of

their labours every day. The idea that technological invention or development has to wait for scientific theory is wrong, misleading and dishonest.
Whole document edited up to this point in chapter 5.

The discovery of the Higgs Boson will not affect the lives of the population in any way and is highly unlikely to lead to any improvement in technology. Such things are only important to scientists in as much as they help to keep them employed. The author has no problem with scientists studying irrelevant subjects, but what is a problem is educating and brainwashing us all to think that such things are important in our own lives. The work of science is largely the Emperors New Clothes and all those who can't see them are supposed by science to be somewhat naive?

Real Television

Although we think of TV as being based on the cathode ray Crookes tube, there were, in its early development a number of mechanical systems used for relaying pictures before it became possible, due to contemporary technology, to use all-electronic systems:

Mechanical TV

1884 Paul Gottlieb Nipkow
inventors.about.com:

“Paul Nipkow (German technician and inventor) developed a rotating-disc technology to transmit pictures over wire in 1884 called the Nipkow disk. Paul Nipkow was the first person to discover television's scanning principle, in which the light intensities of small portions of an image are successively analysed and transmitted.”⁵⁰

This system was later used by engineer John Logie Baird.

Transmission of still pictures, not really TV related.

en.wiki:

"Between 1902 and 1907, Arthur Korn German-born physicist and mathematician invented and built the first successful signal-conditioning circuits for image transmission. The circuits overcame the image-destroying lag effect that is part of selenium photocells. Korn's compensation circuit allowed him to send still pictures by telephone or wireless between countries and even over oceans, while his circuit operated without benefit of electronic amplification. Korn's success at transmitting halftone still images suggested that such compensation circuits might work in television. Baird was the direct beneficiary of Korn's research and success.." 51

en.wiki:

"He pioneered the use of light sensitive selenium cells which took over from the function of the stylus and used a Nernst lamp as a light source. On the 18th October, 1906, he managed to transmit a photograph of Crown Prince William over a distance of 1800 km." 52

Korn's rise to physicist status is somewhat unusual:

en.wiki:

"...He (Arthur Korn) then studied physics and mathematics in Leipzig at the age of 15, from where he graduated in 1890. Afterwards he studied in Berlin, Paris, London and Würzburg. In 1895 he became a lecturer in law at the University of Munich, and was appointed professor in 1903. In 1914 he accepted the chair of physics at the Berlin Institute of Technology." 53

A somewhat confusing education for a physicist.

1907

Electronic-mechanical TV

Boris Rosing

inventors.about.com:

"Russian scientist Boris Rosing (who worked with Vladimir Zworykin) (below) used a CRT in the receiver of a television system." 54

bairdtelevision.com:

"Rosing's system employed a mirror-drum apparatus as camera and a cathode-ray tube as receiver to transmit black-and-white silhouettes of simple shapes. The cathode-ray tube had been developed a decade earlier by a German, Karl Ferdinand Braun (in 1897). Rosing's system was primitive, but it was one of the first experimental demonstrations where the cathode ray tube was employed for the purposes of television. Vladimir Zworykin (before emigrating to the U.S.A.) was a student of Rosing and assisted him in some of his laboratory work." 55

1908 A.A.Campbell-Swinton

discoveriesinmedicine.com:

"During the first three decades of the twentieth century, inventors continued to devise uses for cathode ray technology. Inspired by Braun's oscilloscope, A. A. Campbell-Swinton suggested that a cathode ray tube could be used to project a video image upon a screen. Unfortunately, the technology of the time was unable to match Campbell-Swinton's vision." 56

Engineer Alan Archibald Campbell-Swinton's letter published in the 18 June 1908 issue of Nature was a suggestion rather than any kind of practical invention. Philo T Farnsworth (See below) was already hard at work on the idea before the letter was sent. 57

1923

Electro-mechanical TV

en.wiki:

"Vladimir Zworykin,(not a scientist) Russian-American inventor, engineer, and

pioneer of television technology, helped Boris Rosing (a scientist) with experimental work on television in the basement of Rosing's private lab at the School of Artillery of Saint Petersburg, Russia. Rosing had filed his first patent on a television system in 1907, featuring a very early cathode ray tube as a receiver, and a mechanical device as a transmitter. Its demonstration in 1911, based on an improved design, was among the first demonstrations of TV of any kind.

He summarized the resulting invention in two patent applications. The first, entitled "Television Systems", was filed on December 29, 1923, and was followed by a second application in 1925 of essentially the same content, but with minor changes and the addition of a Paget-type screen for color transmission and reception. He was awarded a patent for the 1925 application in 1928 and two patents for the 1923 application that was divided in 1931, although the equipment described was never successfully demonstrated." 58

1923

Mechanical TV

"Charles Jenkins (not a scientist) invented a mechanical television system called radiovision and claimed to have transmitted the earliest moving silhouette images on June 14, 1923." 59

Mechanical TV

tvhistory.tv:

John Logie Baird

"On January 23, 1926, John Logie Baird (Scottish engineer and inventor) gave the world's first public demonstration of a mechanical television apparatus to approximately 40 members of the Royal Institution at his laboratory on Frith Street. These were images of living human faces, not outlines or silhouettes, with complete tonal gradations of light and shade." 60

en.wiki:

"In 1928, he developed an early video recording device, which he dubbed Phonovision.

The system consisted of a large Nipkow disk attached by a mechanical linkage to a conventional 78-rpm record-cutting lathe. The result was a disc that could record and play back a 30-line video signal. Technical difficulties with the system prevented its further development, but some of the original phonodiscs have been preserved, and have since been restored by Donald McLean, a Scottish electrical engineer." 61

Electronic TV pictures

Kalman Tihanyi

en.wiki:

Hungarian inventor, "Tihanyi called his fully-electronic television system "Radioskop", and his application contained 42 pages detailing its design and mass production. Though it bears certain similarities to earlier proposals employing a

cathode ray tube (CRT) for both transmitter and receiver...

From 1929, Tihanyi worked on television guidance for defence applications, building prototypes of a camera for remotely guided aircraft in London for the British Air Ministry, and later adapting it for the Italian Navy. In 1929, he invented the first infrared-sensitive (night vision) electronic television camera for anti-aircraft defense in Britain.

Tihanyi's U.S. patents for his display and camera tubes, assigned to RCA, were issued in 1938 and 1939, respectively.

1936 Tihanyi described the principle of "plasma television" and conceived the first flat-panel television system." 62

en.wiki update:

"Klmm Tihanyi (28 April 1897, zbg - 26 February 1947, Budapest), was a Hungarian (not a) physicist, (but an) electrical engineer and inventor. One of the early pioneers of electronic television, he made significant contributions to the development of cathode ray tubes (CRTs), which were bought and further developed by the Radio Corporation of America (later RCA),[1][2] and German companies Loewe and Fernseh AG.[citation needed] He invented and designed the world's first automatic pilotless aircraft in Great Britain." 63

Philo T. Farnsworth 1922, American inventor and television pioneer.

discoveriesinmedicine.com:

Image Focusing

1922

"It was not until 1922 that Philo T. Farnsworth (See below) used a magnet to focus a stream of electrons onto a screen, producing a crude image. Though the first of its kind, Farnsworth's invention was quickly superseded by Vladimir Zworykin's kinescope, the ancestor of the modern television." 64

Although the Zworykin kinescope never worked?

nationalvanguard.org:

1929 "According to the book Philo T. Farnsworth: The Father of Television by Donald G. Godfrey, the first human images transmitted by Farnsworth were of his wife and her brother, Cliff Gardner. A 3 1/2-inch-square image of his wife with her eyes closed was transmitted on October 19, 1929, Gardner wrote. The book lists her as first woman on TV'.

1957 "Farnsworth an American inventor and television pioneer...predicted HDTV and solid-state flat-screen technology in a 1957 interview: (See Klmm Tihanyi above)

"[W]e think we can eventually get in excess of 2000 lines instead of 525 and do it on an even narrower channel which will make for a much sharper picture. We believe in the picture-frame type of a picture, where the visual display will be just a screen. And we hope for a memory, so that the picture will be just as though its pasted on there." 65

"Sadly, credit for his pioneering work was almost taken from Farnsworth when Jewish-controlled conglomerate RCA under David Sarnoff, with a potential profit in the hundreds of millions if they prevailed, claimed the innovation was the work of one of its house engineers (Klmn Tihanyi above)?. But in 1935, the courts ruled that Farnsworth was the real inventor...

...Nevertheless Farnsworth received little recognition or monetary compensation in later years, because of what some say was purposeful revenge by the Jewish establishment for his defeat of Sarnoff. Many scholars also blame Sarnoff for setting back the development of FM radio (see chapter Radio) for decades because it threatened the AM networks and AM receiver technology in which RCA was heavily invested and for thereby causing the suicide of another European-American innovator, Edwin Armstrong, who invented FM radio in 1933" 66 See Chapter 3.

"At the time he died, Farnsworth held 300 U.S. and foreign patents. His inventions contributed to the development of radar, infra-red night vision devices, the electron microscope, the baby incubator, the gastroscope, and the astronomical telescope.

en.wiki:

Farnsworth said in an interview, "In television, we're attempting first to make better utilization of the bandwidth, because we think we can eventually get in excess of 2000 lines instead of 525 ... and do it on an even narrower channel ... which will make for a much sharper picture. We believe in the picture-frame type of a picture, where the visual display will be just a screen. And we hope for a memory, so that the picture will be just as though it's pasted on there." 67

Flat Panel Display Plasma, LED and Liquid Crystal

en.wiki:

"The first ever flat panel display was invented in 1964 at the University of Illinois." 68

en.wiki:

"Burroughs Corporation, a maker of adding machines and computers, developed the Panaplex display in the early 1970s. The Panaplex display, generically referred to as a gas-discharge or gas-plasma display, uses the same technology as later plasma video displays, but began life as seven-segment display for use in adding machines. They became popular for their bright orange luminous look and found nearly ubiquitous use in cash registers, calculators, pinball machines, aircraft avionics such as radios, navigational instruments, and stormscopes; test equipment such as frequency counters and multimeters; and generally anything that previously used nixie tube or numitron displays with a high digit-count throughout the late 1970s and into the 1990s. These displays remained popular until LEDs gained popularity because of their low-current draw and module-

flexibility, but are still found in some applications where their high-brightness is desired, such as pinball machines and avionics. Pinball displays started with six- and seven-digit seven-segment displays and later evolved into 16-segment alphanumeric displays, and later into 128x32 dot-matrix displays in 1990, which are still used today. " 69

If Tihanyi described the principle of plasma television and conceived the first flat-panel television system in 1936 and Farnsworth predicted HDTV and solid-state flat-screen technology in a 1957, the principles must already have been known. How can the "first ever flat panel" have been "invented at the University of Illinois in 1964"? Prevarications from the groves of academe. 70

Chapter 6

The Smithsonian Flying Circus Birth of Aviation

Samuel Langley

To say that science played no part in the development of aviation would be futile. Science incarnate was Samuel Pierpont Langley (1834-1906), who showed the

world how 'not' to fly. In spite of decades of theorising, huge government funding and the backing of the entire scientific community, particularly in the form of Smithsonian Institution, he failed miserably and became a public laughing stock:

invention.psychology.msstate.edu:

"Needless to say, the Washington critics had a field day. The Brooklyn Eagle quoted Representative Hitchcock as saying, "You tell Langley for me ... that the only thing he ever made fly was Government money." Representative Robinson characterized Langley as "a professor ... wandering in his dreams of flight ... who was given to building ... castles in the air. The War Department, in its final report on the Langley project, concluded, "We are still far from the ultimate goal, and it would seem as if years of constant work and study by experts, together with the expenditure of thousands of dollars, would still be necessary before we can hope to produce an apparatus of practical utility on these lines." Eight days after Langley's spectacular failure, a sturdy, well-designed craft, costing about \$1000, struggled into the air in Kitty Hawk, defining for all time the moment when humankind mastered the skies."

What we see here is a lesson that never seems to be learned: that providing funding for, or throwing money at, theoretical science rarely pays dividends and that placing theory before practical, physical, experiments is not something to be recommended - the practice continues. Langley's adopted aeronautical theories were later shown to be in error by the Wright brother's practical experimentation. Again, as in other pages on this site, we see someone who was a total failure in the area for which he is most remembered, elevated to the pinnacle of scientific achievement. A clue to his success may be that:

en.wiki:

"...he became the third Secretary of the Smithsonian Institution in 1887. Langley was the founder of the Smithsonian Astrophysical Observatory."

earthobservatory.nasa.gov:

"Samuel Langley Born in the Boston suburb of Roxbury, Ma.,... was one of America's most accomplished scientists. His work as an astronomy, physics, and aeronautics pioneer was highly regarded by the international science community. Ironically though, Langley's formal education ended at the high school level, but he managed to continue his scientific education in Boston's numerous libraries."

earthobservatory.nasa.gov says:

"Of all the early trail blazers one of the most controversial, and surely one of the most unlucky,..." ?

Langley built hundreds of model aircraft with steel frames, taking the heavier than air concept to its outer limits and eventually to disaster with his manned flights. It had never occurred to him that the pilot would need some mechanism for steering.

It's difficult to classify Langley, but he was, at the end of the day a typical true believer, a son of the scientific method, to the extent that he attempted to fly on theory, without wings. His mistake was to believe that theory supersedes practical experimental reality - he put theoretical science before the nuts and bolts of engineering. This mistake and others were well taken by the scientific community who these days only theorise about things out of reach and beyond disproof. Things so minute that they cannot be disputed or so far away that they cannot be tested. The experimental tests of relativity using pulsars or the bending of light around galaxies are typical examples of modern science flying safely on the wings of theory. No crash into the Potomac in far distant galaxies and no press photographers in starships to record the ignominious failure.

Simon Newcomb (1835 - 1909)

On the impossibility of a flying machine.

simon-newcomb.co.tv:

Newcomb a Canadian-American astronomer and mathematician remarked, "...the construction of an aerial vehicle ... which could carry even a single man from place-to-place at pleasure requires the discovery of some new metal or some new force.... In the October 22, 1903 (The same year that the Wright's were flying) issue of The Independent, Newcomb wrote that even if a man flew he could not stop. "Once he slackens his speed, down he begins to fall. Once he stops, he falls as a dead mass."

"On the state of astronomy 1888, Simon Newcomb declared: "We are probably nearing the limit of all we can know about astronomy."

gap-system.org:

"Newcomb was specifically critical of the work of Samuel Pierpont Langley, who claimed that he could build a flying machine powered by a steam engine and whose initial efforts at flight were public failures."

"Simon Newcomb was the most honored American scientist of his time." That is unless one includes Langley.

Lord Kelvin declared: "Heavier-than-air flying machines are impossible" and he was one of Britain's most accomplished scientists.

It becomes clear that when it comes to predicting the future, or even a few months ahead, the academics have a poor track-record and declarations by them that certain things are impossible are not uncommon today. The revisionist tale, that scientists were unaware of the Wright's successes does not really hold water. With so many 'authorities' denying the feasibility of heavier than air flight, no one would have bothered to investigate something that the 'experts' had declared impossible. This tendency of those who set themselves up as authorities to be universally believed, persists to this day, encouraged by other scientists, the media and educators. The Hollywood, 'Scientist Saves the World' scenario is about as far removed from what scientists actually do as it is possible to get.

New Scientist magazine declares:

"The number of scientists and engineers who confidently stated that heavier-than-air flight was impossible in the run-up to the Wright brothers' flight is too large to count."

There seems to be some confusion about whether the Wrights flights were common knowledge among the scientific community. However:

en.wiki says:

"When Langley received word from his friend Octave Chanute of the Wright brothers' success with their 1902 glider, he attempted to meet the Wrights, but they politely evaded his request."

Langley and Chanute were buddies and Chanute was in regular contact with the Wright brothers. Langley would have been desperately interested in someone else's flight project as he was about to build an aircraft of his own.

en.wiki:

"Chanute was in contact with the Wright brothers from 1900, when Wilbur Wright wrote to him after reading Progress in Flying Machines. Chanute helped to publicize the Wright brothers' work, (shome mishtake here surely?) and provided consistent encouragement, visiting their camp near Kitty Hawk in 1901, 1902 and 1903. The Wrights and Chanute exchanged hundreds of letters from 1900 to 1910."

Scientific American, failed to report the Wright flight's because they thought them to be a hoax. But Langley, Secretary of the Smithsonian Institution, was claiming to be about to do the same thing? Can this have been a case of an induced scientific scepticism?

en.wiki on Scientific American says:

"Throughout its early years, (of Scientific American) much emphasis was placed

on reports of what was going on at the U.S. Patent Office. It also reported on a broad range of inventions including perpetual motion machines, an 1860 device for buoying vessels by Abraham Lincoln, and the universal joint which now finds place in nearly every automobile manufactured."

museumofhoaxes.com:

The Wright Brothers' discovery of flight: "When two American bicycle repairmen claimed to have built the world's first aircraft in 1903, they were dismissed as cranks. Newspapers refused to send reporters or photographers to witness any of the flights. More than two years later, Scientific American magazine was still insisting that the story was a hoax. By that time, the Wright brothers had completed a half-hour flight covering 24 miles."

The Lying Brothers

amasci.com:

"After their Kitty Hawk success, The Wrights flew their machine in open fields next to a busy rail line in Dayton Ohio for almost an entire year. American authorities refused to come to the demos, and Scientific American Magazine published stories about "The Lying Brothers." Even the local Dayton newspapers never sent a reporter (but they did complain about all the letters they were receiving from local "crazies" who reported the many flights.) Finally the Wrights packed up and moved to Europe, where they caused an overnight sensation and sold aircraft contracts to France, Germany, Britain, etc."

I've heard it said that "The world was not economically ready for some past rejected technologies", but this is a lame self justification for the scientific underground and history shows that every major new innovation creates jobs and wealth. Scientific suppression invariably supports the minority, economic vested interest to preserve the status quo and is still doing so today.

The Smithsonian dispute - when things look bad, cheat!

The Smithsonian had determined to show that it was their son Langley who had pioneered the trail to powered flight and set out on a quest to change history, the idea that a pair of bicycle mechanics could upstage a son of science was unthinkable. In an act of sheer desperation they got their own bicycle mechanic:
aviation-history.com:

"...In an attempt to prove that Samuel P. Langley had invented the first machine capable of sustained flight, the Smithsonian Institution contracted with (Glenn Hammond) Curtiss to verify if Langley's 1903 Aerodrome could fly. The Smithsonian shipped Langley's machine to Hammondsport, where Curtiss and his

associates modified it and eventually flew it off of Lake Keuka on May 28 and June 2. The Smithsonian's witness for these flights, Dr. Albert Zahm, later concluded that the Aerodrome has demonstrated that with its original structure and power, it is capable of flying with a pilot and several hundred pounds of useful load. It is the first aeroplane in the history of the world of which this can truthfully be said.

However, another witness to these flights was Orville Wright's older brother Lorin. He compiled a long list of Curtiss's modifications that, to the Wrights, verified that the plane could not have flown without those changes.

In light of the competing claims, Orville Wright and the Smithsonian argued for three decades over who had first invented a flyable plane. By 1943, the two parties had reached an agreement in favour of the Wrights, and the Wright Flyer of 1903 now hangs proudly in the Air and Space Museum in Washington, DC recognized as the worlds first powered heavier-than-air flying machine."

Presentism, or seeing everything from hindsight is a slight of hand that has become an even more popular distraction these days than it was in the early 1900's. Academic science criticises past discoveries from the viewpoint of modern knowledge, as if 'they should have known better because we do now'. The 'we do now' often originating from sources other than academic science, as in the case of the Wright brothers. Everything becomes so obvious when you are shown the answers and science needs no temptation to claim that it 'knew about it all along'.

aviation-history.com:

"It seems that the Smithsonian had asked Dr. Albert Zahm to procure the services of an aeronautical bicycle mechanic of their own choosing, (Glenn Hammond Curtiss) someone who had an axe of his own to grind - he had tendered contracts to the Wrights and been rejected."

wright-brothers.org:

"...Instead, Curtiss set about rebuilding Samuel Langley's Great Aerodrome that had crashed into the Potomac in 1903 to prove that it could have flown before the Wrights."

wright-brothers.org:

"Dr. Albert Zahm's name crops up several times when researching aviation history. He is said to have concocted the myth about Gustave Whitehead's flights being prior to that of the Wright's."

en.wiki:

“The Aerodrome was heavily modified and flown a few hundred feet by Glenn Curtiss in 1914, as part of his attempt to fight the Wright brothers' patent, and as an effort by the Smithsonian to rescue Langley's aeronautical reputation. Nevertheless, courts upheld the patent.

The Curtiss flights emboldened the Smithsonian to display the Aerodrome in its museum as "the first man-carrying aeroplane in the history of the world capable of sustained free flight".

Fred Howard, extensively documenting the controversy, wrote: "It was a lie pure and simple, but it bore the imprimatur of the venerable Smithsonian and over the years would find its way into magazines, history books, and encyclopedias, much to the annoyance of those familiar with the facts." (Howard, 1987). The Smithsonian's action triggered a decades-long feud with the surviving Wright brother, Orville.”

Flights of Fancy
news.bbc.co.uk:

The BBC web page “Flights of Fancy” article gives various claims for the first powered flight:

An article in the Popular Aviation magazine carried eyewitness accounts, of flights in 1898, 1901 and 1902. “Experts however, say the story lacks credibility. Some even credit it to the "hoax journalism" trend of the day while others believe the "myth" was perpetuated by Albert Zahm, (of the Smithsonian) an arch enemy of the Wright brothers, who was involved in a patent dispute with them.”

The Smithsonian, Curtiss and Zahm
nps.gov:

"While Curtiss and Zahm announced they would return the aerodrome to its original form, the reconstructed machine was not the same that Langley flew. The wings, trussing system, and kingposts all varied from Langley's original aerodrome. These were very important changes, for most knowledgeable authorities believed the wing structure failed, not a defect in the catapult system, during Langley's unsuccessful 1903 test."

en.wiki:

"Testimony in Wrights vs. Curtiss Zahm testified as an aeronautical expert in the 1910-1913 patent lawsuits by the Wright brothers who alleged patent infringement against inventor and manufacturer Glenn Curtiss. His testimony took over a month. He testified on behalf of the Curtiss after declining to testify for the Wrights. There is considerable controversy on this point, as other sources (see T.

Crouch, THE BISHOP'S BOYS, p. 422) report that the Wrights refused to pay Zahm to appear as an expert witness while the Curtiss interests did so with alacrity. Zahm had been on friendly terms with both sides previously but became a long term adversary of the Wrights during and after the trial. Indeed, he worked closely with Glen Curtiss on the controversial 1914 flying tests of the (substantially rebuilt and modified) Langley Aerodrome in an attempt to prove that Langley's machine (and not the Wrights') was the first one "capable" of flying with a man aboard (see R. Hallion, TAKING FLIGHT, pp. 292-293).

He testified that earlier experimental gliders and glider designs and publications, before those of the Wrights, had included a variety of monoplane and biplane designs, with horizontal and vertical rudders, and steering concepts of ailerons and wing warping. There were complex technical issues, notably whether Curtiss's airplanes used a vertical rudder and ailerons in ways that closely matched those aspects of the Wright patent which were legally protected. Numerous experts testified on both sides and sometimes contradicted one another on matters of fact. In the end judge John R. Hazel ruled in Feb. 1913 for the Wrights, and on appeal a higher court agreed with this decision in 1914.

Later years: Zahm became the chief research engineer of Curtiss Aeroplane Company in 1914-1915 and then the director of the U.S. Navy's Aerodynamical Laboratory, 1916-1929."

Zahm became the chief of the Aeronautical Division at the Library of Congress from 1929 or 1930 until 1946, and held the Guggenheim Chair of Aeronautics there.

swaviator.com:

(The) "technology, unknown to Langley in 1903, was derived from the Wrights' wind-tunnel tests in November and December 1901, and was known only to them at the time. At the controls of an Aerodrome made airworthy using the Wrights' own technology, Curtiss flew what was termed "several short hops" over Lake Keuka in 1914 and longer flights with additional modifications in 1915. The Wrights' biographer, Fred Howard, wrote regarding a May 28, 1914 "hop" at which no unbiased observers were present, "The papers the next day were full of the news that 'Langley's Folly,' mercilessly vilified for its failure in 1903, had all along been capable of flight." Officials at the Smithsonian, which had been represented on-site by its official observer, Zahm, were elated. The Smithsonian annual report that year falsely stated that the original Langley machine flew without changes."

invention.psychology.msstate.edu:

"The smear campaign against the Wrights must be counted as one of the most effective in history. Today the common man recognizes the Wrights as the inventors of the airplane, but the prevailing attitude toward the Wrights is that they were bicycle mechanics who invented, perhaps by happenstance and chance, the first airplane. Few today realize the genius and hard work the Wrights brought to their chosen task. Even fewer appreciate the elegance of the sturdy Wright biplanes, how difficult it is to learn to fly as you invent an airplane, or have any idea how much longer society would have waited for airplanes if the Wrights hadn't taught us all the way. As we near the 100th anniversary of the First Flight, efforts are underway to build a national park in Dayton to honor the Wrights. One might imagine that corporations who make billions off the airplane would be eager to support this effort. One might imagine that countries who stole from the Wrights might be looking to make amends. One would be wrong. Watch your back, Jack."

"The broken 1903 Wright Flyer, however, is (now) on display at the Smithsonian's National Air and Space Museum. The exhibit is labelled with these words":

THE ORIGINAL WRIGHT BROTHERS AEROPLANE
THE WORLD'S FIRST POWER-DRIVEN,
HEAVIER-THAN-AIR MACHINE IN WHICH MAN
MADE FREE, CONTROLLED, AND SUSTAINED FLIGHT
INVENTED AND BUILT BY WILBUR AND ORVILLE WRIGHT
FLOWN BY THEM AT KITTY HAWK, NORTH CAROLINA
DECEMBER 17, 1903
BY ORIGINAL SCIENTIFIC RESEARCH THE WRIGHT BROTHERS
DISCOVERED THE PRINCIPLES OF HUMAN FLIGHT
AS INVENTORS, BUILDERS, AND FLYERS THEY
FURTHER DEVELOPED THE AEROPLANE,
TAUGHT MAN TO FLY, AND OPENED
THE ERA OF AVIATION

http://www.sciencemuseum.org.uk/onlinestuff/stories/the_first_flight.aspx?
page=3

The humiliation of the renowned Samuel Pierpont Langley would have been taken humourlessly by physicists as one would expect. Langley, an illustrious representative of science by his association with the prestigious Smithsonian Institution brought disrepute upon science. Hence, the eagerness to distance physics from all such interlopers, such as bicycle mechanics who made scientists look like amateurs...

Chapter 7

Through a Glass Darkly Tomography MRI

Tomography, MRI, the Nobel prize and a blast of aether from the past. Contained in the information below is strong evidence of a major and invaluable contribution by those who are considered by scientists to be pseudo-scientific or in some cases even beyond the pale. We also have additional evidence that 'science' is again attempting to minimize the importance of the work of those excluded by crediting it to a few chosen academics. Once again, we see the downgrading of invention, imagination and achievement for the sole purpose of the aggrandisement of academe. Questions arise such as, how is someone able to receive a Nobel Prize while the patent-holder gets no mention? Why are scientific reputations of those who choose to live by a religious philosophy attacked? Why is a decades-old theory and technology presented as if it were new? We live with the illusion that thanks to science, new and wonderful advances are being made, when they are often very old technology. These are ideas that have been worked on cosmetically to look new, so as to astound and blind with science.

New and original technology with a history that starts after the 1930's is very hard to find and MRI and TSA scanners are no exception. I've been told by a scientist, in answer to the above criticism, that just about everything has a long period of evolutionary development. This may be true, but why are these things presented as being new and why hand-out Nobel prizes to those who did not discover, invent them or achieve any significant development?

MRI De-mystifier

The basic technology of MRI is simple: A coil carrying a high frequency current is used to magnetically excite the atomic nuclei in a material object like for example a human body and a second coil is used to detect the magnetic emissions from the excited atoms.

Other coils and their magnetic fields are used to direct and give depth to the moving magnetic field in the required area. The resulting signal, modulated by variations in the body composition, is detected by a further coil and then processed by a computer to become numbers or a computer image in the form of slices cut through the body.

Joseph Larmor, NMR and the Aether Theory.

Theoretically, MRI can be traced back to Sir Joseph Larmor 1857 -1942, who's most influential work was 'Aether and Matter', a now academically debunked physics book published in 1900. MRI is yet another example of ether theory technology, pre-relativity, pre 1930's, revisited and used in today's technology.

en.wiki:

"Larmor proposed that the aether could be represented as a homogeneous fluid medium which was perfectly incompressible and elastic. Larmor believed the aether was separate from matter. He united Lord Kelvin's model of spinning gyrostats (e.g., vortexes) with this own theory." 1 Just as did many other scientists of the day.

britannica.com:

"Larmor, an Irish physicist, the first to calculate the rate at which energy is radiated by an accelerated electron, and the first to explain the splitting of spectrum lines by a magnetic field. His theories were based on the belief that matter consists entirely of electric particles moving in the ether." 2

His work is the foundation on which stands NMR, that became MRI.

So many technological discoveries have their origin during the time when the old ether theory was dominant that one wonders why it was rejected and why it is not revived for the sake of modern technological progress? The answer is that it's rich vein of ideas are accessed by the back door.

NMR

“This phenomenon was termed NMR as follows:

"Nuclear" as only the nuclei of certain atoms reacted in that way;

"Magnetic" as a magnetic field was required;

"Resonance" because of the direct frequency dependence of the magnetic and radio-frequency fields.

MRI - Magnetic Resonance Imaging is the same thing with added computer imaging.”

Edward Mills Purcell

ehow.com says:

"Edward Mills Purcell is credited with the discovery of nuclear magnetic resonance (NMR) in 1945.” 3

He was the re-discoverer.

en.wiki:

“In December 1946, he (Purcell) discovered nuclear magnetic resonance (NMR) with his colleagues Pound and Torrey. NMR provides scientists with an elegant and precise way of determining chemical structure and properties of materials, and is widely used in physics and chemistry. It also is the basis of magnetic resonance imaging (MRI), one of the most important medical advances of the 20th century. For his discovery of NMR, Purcell shared the 1952 Nobel Prize in physics with Felix Bloch of Stanford University.” 4

ehow.com:

His (Purcell's) scientific achievements included being the first scientist to detect radio emissions originating in the hydrogen of galaxies (This is clearly untrue, see chapter on Radio Astronomy) and his investigations into solid-state physics are still considered pioneering.

(His rise to scientific sainthood may be due to:)

An Adviser to Presidents Eisenhower, Kennedy and Johnson, Purcell earned multiple honours for his scientific discoveries. His books are still considered required reading for students pursuing degrees in science and medicine....

...How often do scientists reach similar conclusions despite never having collaborated in the laboratory or by sharing their independent research findings with each other? More often than one might think. While both Felix Bloch and Purcell attended and worked at Harvard University, their paths crossed only in terms of reputation until the two scientific giants stood on an Oslo stage in 1952 to accept their Nobel Prizes for Physics." 5

I would guess that they both read Joseph Larmor's work?

aip.org:

Purcell again ..." His own scientific interests more and more led him in the direction of what we now call solid state physics. He was interested generally in crystals, the physics of crystals, and that sort of thing; and of course later on he developed the really very well known and very important solid state research laboratory that did work on semi-conductors during World War II. The trouble with the Lark was he was very slow to write things up and publish them. I think perhaps he didn't get as much credit as he might have for his work on germanium in the middle '40s prior to the transistor." 6

The inventing that scientists are good at is inventing heroes. Purcell is credited here with a part in transistor development because he worked with germanium, but no supporting evidence. His career seems to depend on claiming credit for other peoples work. We have already encountered him in the chapter on radio astronomy and found his reputation and prior achievements to have been grossly exaggerated.

Felix Bloch

en.wiki:

"After the war he concentrated on investigations into nuclear induction and nuclear magnetic resonance, which are the underlying principles of MRI. In 1946 he proposed the Bloch equations which determine the time evolution of nuclear magnetization.(How long it takes to magnetise an atom.) He and Edward Mills Purcell were awarded the 1952 Nobel Prize for "their development of new ways and methods for nuclear magnetic precision measurements." In 1954–1955, he served for one year as the first Director-General of CERN. In 1961, he was made Max Stein Professor of Physics at Stanford University." 7

isbe.man.ac.uk:

"Felix Bloch, working at Stanford University, and Edward Purcell, from Harvard University, found that when certain nuclei were placed in a magnetic field they absorbed energy in the radio frequency range of the electromagnetic spectrum, and re-emitted this energy when the nuclei transferred to their original state. The strength of the magnetic field and the radio frequency matched each other as earlier demonstrated by Sir Joseph Larmor and is known as the Larmor relationship (i.e., the angular frequency of precession of the nuclear spins being proportional to the strength of the magnetic field)...

...With this discovery NMR spectroscopy was born and soon became an important analytical method in the study of the composition of chemical compounds. For this discovery (originally derived from ether theory by Larmor) Bloch and Purcell were awarded the Nobel Prize for Physics in 1952." 8

Raymond Damadian

en.wiki:

"The first medical application of NMR came in 1971 when Raymond Damadian discovered that some tumours in mice showed raised relaxation times when compared to normal tissues in vitro. This was a ground breaking discovery that would lead to the exciting new way of imaging the human body. The tissues with disease would show up starkly different from healthy ones; an accomplishment that X-ray and ultrasound technology could not achieve." 9

en.wiki:

"Some consider Damadian to be a controversial figure in academic circles, not least for his exuberant behaviour at conferences. He is also fundamentalist Christian and a young earth creationist and a member of the 'Technical Advisory Board' of the Institute for Creation Research."

(Not the kind of background that would endear him to a modern physicist, creationist being a word applied by scientists to anyone who disagrees with scientific dogma. Damadian, by contrast was quite proud of the fact.)

"Philosopher Michael Ruse writing for the Metanexus Institute suggested that Damadian might have been denied a Nobel Prize because of his creationist views, saying":

"I cringe at the thought that Raymond Damadian was refused his just honour because of his religious beliefs. Having silly ideas in one field is no good reason to deny merit for great ideas in another field. Apart from the fact that this time, the Creation Scientists will think that there is good reason to think that they are the objects of unfair treatment at the hands of the scientific community. M. Ruse" 10

Us poor non-scientific plebs are not supposed to know the rhyme or reason behind the awarding of Nobel prizes, but what is surprising is that philosopher Michael Ruse is not aware of the 'counterintuitive' that allows science to do and say whatever it likes.

inventors.about.com:

"(Damadian) filed his idea for using magnetic resonance imaging as a tool for medical diagnosis with the U.S. Patent Office, entitled "Apparatus and Method for Detecting Cancer in Tissue." A patent was granted in 1974, it was the world's first patent issued in the field of MRI. By 1977, Dr. Damadian completed construction of the first whole-body MRI scanner, which he dubbed the "Indomitable."" 11

Damadian's NMR Scanner patent in 1974 "Apparatus and method for detecting cancer in tissue."

The Indomitable Note the similarity to today's MRI machines.

The 1901 work of Joseph Larmor and the 1974 work of Raymond Damadian is quietly forgotten because one was born from a debunked aether theory and the other is the victim of prejudice because of his alternative religious philosophy.

Herman Carr

en.wiki:

Herman Y. Carr "...pioneered the NMR gradient technique and demonstrated rudimentary MRI imaging in the 1950s. The Nobel prize winners had almost certainly seen Carr's work, but did not cite it. Consequently, the prize committee very likely was unaware of Carr's discoveries, a situation likely abetted by Damadian's campaign...

...The 2003 prize was awarded to Paul Lauterbur and Sir Peter Mansfield "for their discoveries concerning magnetic resonance imaging" (MRI)." 12

en.wiki:

"In 2003 the Nobel Prize in Medicine was awarded to Paul C. Lauterbur and Peter Mansfield for their work on MRI. There was some controversy when Carr was not awarded the prize jointly with Lauterbur and Mansfield....

...Ten years before the Nobel announcement, (Herman) Carr wrote to Physics Today noting that both his 1952 demonstration of use of magnetic gradients for spatial localization and his actual demonstration of 1-D "imaging" had been overlooked by the radiologist Felix Wehrli in a 1992 article...

...As a professed pacifist he served on the National General Board of Church and Society of the United Methodist Church where he was a representative to Russia during glasnost promoting Christianity, justice and world peace."

13

Again someone with an unscientific, Christian philosophy that included an active contribution to world peace is excluded contrary to the philosophy of Nobel. I see a habit starting to take a hold.

The rule: For a successful career in science ability is not required, but a total denial of anything religious, spiritual or supernatural. 14

Isidor Isaac Rabi

isbe.man.ac.uk:

"Interestingly, Dr Isidor Rabi, an American physicist who was awarded the Nobel

Prize for Physics in 1944 for his invention of the atomic and molecular beam magnetic resonance method of observing atomic spectra, came across the NMR experiment in the late 1930's but considered it to be an artefact of his apparatus and disregarded its importance." 15

Why mention something he didn't do?

According to en.wiki:

"In 1930 Rabi conducted investigations into the nature of the force binding protons to atomic nuclei. This research eventually led to the creation of the molecular-beam magnetic-resonance detection method, for which he was awarded the Nobel Prize for Physics in 1944." 16

“Molecular beam magnetic resonance method of observing atomic spectra” or looking at a radio frequency spectrum rather than a rainbow of colours in the optical spectrum.

So, he got the Nobel prize for something he considered to be an artefact of his apparatus and disregarded – or, what he disregarded led to "the creation of the molecular-beam magnetic-resonance detection method, for which he was awarded the Nobel Prize for Physics in 1944.”

Rabi's work was in theoretical atomic physics and any practical application such as MRI would not have appealed to him.

Magnet.fsu.edu:

"Rabi's technique was based on the resonance principle first described by Irish physicist Joseph Larmor, and it enabled more precise measurements of nuclear magnetic moments than had ever been previously possible. Rabi's method was later independently improved upon by physicists Edward Purcell and Felix Bloch, whose work on nuclear magnetic resonance (NMR) garnered them the 1952 Nobel Prize in Physics and laid the foundations for magnetic resonance imaging (MRI)." 17

Both Rabi's work and that of Purcell and Bloch were based entirely upon Joseph Larmor's earlier ether-based theories and despite the through debunking campaign that elevated Albert Einstein to genius status, they continue to be used as if they are new physics.

6 October 2003

Paul C Lauterbur and Peter Mansfield

nobelprize.org:

"The Nobel Assembly at Karolinska Institute has today decided to award The Nobel Prize in Physiology or Medicine for 2003 jointly to Paul C Lauterbur and Peter Mansfield for their "discoveries" concerning "magnetic resonance imaging"

It's difficult to assess the contribution of Lauterbur and Mansfield apart from the advantage of more modern and faster computers. The Nobel Prize selection committee seems not to understand the principle behind MRI or the actual work involved. It seems in this instance to have elevated the marketing of an idea, not to mention a few reputations, above the actual work and innovative ideas involved. This is a little paradoxical as academic science, personified by Lauterbur and Mansfield, is supposed to be the wellspring of new ideas.

en.wiki:

"Damadian said that credit should go to "me, and then Lauterbur," and Lauterbur felt that only he should get credit. In 1997 the National Academy of Sciences commissioned a time-line of MRI milestones, and four of the 12 in an initial draft were attributed to Damadian. At the final publication in 2001, longer than any other publication in the series had ever been taken, none of the milestones were attributed to Damadian. The text said that Damadian's methods had "not proved clinically reliable in detecting or diagnosing cancer." [10] After Damadian's lawyers sent the NAS a threatening letter, the text on the NAS website was revised, but not to Damadian's satisfaction. Damadian said in 2002, "If I had not been born, would MRI have existed? I don't think so. If Lauterbur had not been born? I would have gotten there. Eventually." 19

The Lancet

The Nobel prize for MRI: a wonderful discovery and a sad controversy

Paul Dreizen,

lancet.com:

Sir

"In reporting this year's Nobel prize for physiology or medicine to Paul Lauterbur and Peter Mansfield for work leading to magnetic resonance imaging (MRI), Stephen Pincock (Oct 11, p 1203)¹ alludes to the puzzling absence of Raymond Damadian—an MD scientist at State University of New York Downstate Medical Center—from the prize and notes that the reason for his absence is now clear. But we see through a glass darkly: the real answer is murkier than ever.

The discovery of MRI in medicine comprised two steps. First was Damadian's report in 1971 of differences in tissue proton relaxation among normal tissues and between normal and cancer tissues, and proposal of external nuclear magnetic resonance (NMR) scanning of live human beings.² Second came the development of imaging methods during 1972—80. The first methods were devised by Lauterbur—who reconstructed two-dimensional images using magnetic field gradients, imaging two capillary tubes in water³—and by Damadian, who

registered a patent in 1972. During 1977—78, and using a video-like field-focusing method with a human-sized superconducting magnet built in his laboratory, Damadian and his students obtained the first whole-body MR images, including those of the chest and abdomen in healthy people and in patients with cancers.⁴ In 1974, Mansfield had devised a faster pulsed-sequence method which did not rely on Lauterbur's reconstruction technique.

Lauterbur, Mansfield, and Damadian's methods were supplanted by spin-warp imaging, a gradient method developed in 1980. Spin-warp combines phase-encoding with the two-dimensional Fourier MR concept of Richard Ernst, who won the Nobel prize for chemistry in 1991.

⁵ Both steps are essential to medical MRI. In key papers, Ernst⁵ cites Lauterbur,³ Damadian,² and Mansfield; the spin-warp paper cites Ernst ⁵ and Damadian.² For all imaging methods, tissue proton relaxation and density differences account for the contrasts and anatomic detail unique to MRI. This fact led the US High Court of Patents and Supreme Court in 1997 to uphold Damadian's 1972 patent.

That Damadian, Lauterbur, and Mansfield made important contributions in launching medical MRI seems unambiguous. Why, then, did the Nobel prize recognise two scientists whose contributions involved imaging techniques alone, but exclude the third scientist who conceived of whole-body NMR scanning, discovered tissue proton relaxation differences crucial to MRI's genesis and use, and achieved the first human whole-body MR images? This question is compounded by Alfred Nobel's will, which mandates that the physiology or medicine prize be awarded for the most important discovery; the physics and chemistry prizes include important methods. This year's physiology or medicine prize seems to have ignored the fundamental biomedical discoveries on which imaging methods are based.

Unfortunately the canon of scientific recognition might be abandon(d)ed in the real world. There is disciplinary loyalty within the NMR community, with aspersions cast about Damadian as a physician whose early contributions were inconsequential. The main controversy involves Lauterbur's claim of exclusive primacy in the discovery of medical MRI. Although Damadian's work directly led to Lauterbur's, this fact was not acknowledged by Lauterbur until years later, and only after acerbic public complaints by Damadian.

Also, use of field gradients for linear spatial localisation, fundamental to gradient imaging methods, was discovered by Robert Gabillard and independently by Herman Carr and Edwin Purcell in 1952, and described in classic NMR textbooks. This previous work was never acknowledged by Lauterbur, despite published reminders by Carr and others.

It is sad that this important scientific discovery with direct human benefit is marred by controversy, and sadder yet that the Nobel award has exacerbated rather than settle an unnecessary controversy." 20

mr-tip.com:

"In 1975,(Nobel Laureate) Richard Ernst introduced 2D NMR using phase and frequency encoding, and the Fourier Transform. Instead of Paul Lauterbur's back-projection, he timely switched magnetic field gradients ('NMR Fourier Zeugmatography'). [This basic reconstruction method is the basis of current MRI techniques.] " 21

Almost thirty years before the 2003 Nobel Prize was awarded.

Nature

nature.com:

"In 1990, however, Seiji Ogawa and colleagues published a series of breakthroughs that transformed MRI into a non-invasive and relatively inexpensive means of revealing physiological activity in the brain, sparking a revolution in the study of brain and behaviour." 22

In the best tradition of a Hollywood drama the above would deserve an Oscar, but not a Nobel, surely? Yet more synthetically manufactured, scientific, superstars are born, rising phoenix-like from the ashes of another's hard work and reputation.

The award of a Nobel Prize to a chemist and a physicist for a computer imaging application stretches credulity to its outermost limits. This kind of work is usually done by engineers, but there seems to be no mention of anyone but the academic scientists.

Not mentioned are the all-important MRI electronics and the computer programming involved and who were the designers, developers and inventors?

Imaging technology was already available at the time of Lauterbur and Mansfield's work and was applied to MRI just as it was to earlier tomography as in the case of earlier X-ray, PET scans etc. A large part of the real story of MRI is, no doubt, missing and may surface at sometime in the future.

Airport security X-rays.

TSA (Transportation Security Administration) Scanners and Terahertz Rays

Scientific revisionism and further evidence that all worthwhile and generally useful scientific research ended around the 1930's.

Terahertz, THz waves and Black Light are derived from some very old technology, but presented again as something new from science.

From BioPrepWatch.com:

NJIT announces new bioterror fighting technology

by Ted Purlain on June 15, 2010

"Another piece of technology NJIT researchers have been working with are

terahertz rays. Terahertz technology was isolated about 15 years ago, but its uses until recently have been limited.

Terahertz waves operate similarly to X-rays and microwaves but are on a different bandwidth.

NJIT physicist John Federici told NJ.com that one of the advantages of terahertz technology is that it can scan objects and people without any radiation threat. The rays, however, are still capable of detecting hidden materials like explosives and chemicals in amounts as small as parts per billion." 23

en.wiki tells us:

"(Terahertz radiation has)...the capability to penetrate a wide variety of non-conducting materials.

Terahertz radiation can pass through clothing, paper, cardboard, wood, masonry, plastic and ceramics. It can also penetrate fog and clouds, but cannot penetrate metal or water.....

submillimeter radiation, terahertz waves, terahertz light, T-rays, T-light, T-lux and THz. The term typically applies to electromagnetic radiation with frequencies between high-frequency edge of the microwave band... and the long-wavelength edge of far-infrared light..." 24

Used by airport security for X-ray type photography.

Compare the modern version above with:

Journal of Borderland Science (March-April 1989), page 5:

1930's

rexresearch.com:

"Dr. Paul E. Dobler of Heilbronn, Germany discovered that turbulent water emits powerful bursts of energy in the millimetre electronic wave band. Turbulent motion of water generates millions of vortexes which act as energy transmitters. This energy waveband was once called the X-band by physicists as it included the range from the infrared light band to the edge of the microwave radio band. It was called the X-band because no one could differentiate specific frequencies in this band. These energies have very interesting properties.

Dr. Dobler discovered that energies in this waveband could cause certain metallic crystals to emit photons of light which will expose certain types of chromatic film. Dr. Dobler made interferometers, resonators, and other devices that could accurately measure the wavelengths emitted by water.

He was also able to measure millimeter wavelengths that are emitted by crystals and magnets. The exact techniques used by Dobler are described in his two books: Biophysikalische Untersuchungen uber Strahlung der Materie, Wunchelrute, Elecktrische Wellen (Biophysical Experiments on the Radiation of matter, Divining Rods, Electric Waves, 1939) and Physickalischer und Photographischer machweis

de Erdstrahlen Lösung des Problems der Wunschelrute (Physical and Photographic Proof of Radiation from the Earth, 1934). Unfortunately this great scientist's work was lost for many years due to the destruction of scientific libraries in Germany during WWII.

Rexresearch.com continues:

These waves were also photographed in 1898 by Dr Gustav LeBon in France. His experiments are described in his masterpiece, The Evolution of Matter (1909). Dr. LeBon used energized zinc sulphide plates to make these photographs. When zinc sulphide is exposed to bright light it glows in the dark.

When it is exposed to infrared and millimeter waves, these waves extinguish the photon emission of the zinc plate. By focusing these waves by means of special devices, photographs can be taken through walls. Both LeBon and Dobler were able to demonstrate the power of these waves to penetrate all physical matter such as wood, earth and stones. These waves are, however, powerfully absorbed by water...

Dr Paul Dobler's German Patent: DE698496. 25

Gustave LeBon (1841-1931) T waves in 1896

en.wiki:

"His book The Evolution of Matter was very popular in France (having twelve editions), and though some of its ideas notably that all matter was inherently unstable and was constantly and slowly transforming into luminiferous ether, were used by some physicists of the time (including Henri Poincar), his specific formulations were not given much consideration. During 1896 he reported observing a new kind of radiation, (THz) which he termed "black light" (not the same as what modern people call black light today), though it was later discovered not to exist." (But reappeared in the 1960's and again recently?) 26

An extract from a rejected book by Le Bon:

Dr. Gustave LeBon

The Evolution of Forces

The International Scientific Series

D. Appleton and Company ~ New York ~ 1908

rexresearch.com:

"The first of the three categories of radiations enumerated being identical with the cathode rays and radioactive emissions, it would be useless now to give them a special name. I shall therefore only designate by the name of Black Light: (1) the invisible radiations, totally unknown before my researches, emitted by certain phosphorescent bodies; and (2) the radiations of great wavelength, belonging to the infrared part of the spectrum. This region has been known for a long time, but the majority of its properties have been ignored. It was not suspected before my

researches that these radiations passed through a great number of bodies, allowed instantaneous photography in the dark, and possessed very special physiological actions." 27

And again from en.wiki:

"The first images generated using terahertz radiation date from the 1960s; however, in 1995, images generated using terahertz time-domain spectroscopy generated a great deal of interest, and sparked a rapid growth in the field of terahertz science and technology. This excitement, along with the associated coining of the term "T-rays", even showed up in a contemporary novel by Tom Clancy." 28

Here we clearly see the usurping of a technology originating from the 19th century and again in 1908 and in the 1930's and its presentation as if it were a new discovery of modern science. It is, in fact, a part of the golden age of discovery that was supported by aether theory and concluded with the introduction of the relativistic physics that denied its existence. These ideas are now being revived and introduced via the back door as if they are new from today's physics. All such inventiveness was in fact excluded by more recent academics because of connections with taboo subjects that were and are considered contrary to scientific method and practice.

It's interesting that the theories of Gustave LeBon were used by Henri Poincar and Poincar's theories were in turn used by Albert Einstein in the construction of his relativity theories. Such history is anathema to science because other names tend to surface such as Karl von Reichenbach and Franz Anton Mesmer, names long since stricken from the scientific record, but still a crucial part of the research that led to the discovery of terahertz waves. There is much more not mentioned these days, we have a catalogue of lost science.

I doubt that today's students will be encouraged follow the logical steps of discovery by Mesmer, Reichenbach, Dobler and LeBon, but one lives in hope that they will pursue such things independently.

29

Karl Ludwig Freiherr von Reichenbach

In his day Reichenbach would have been known colloquially as a 'top scientist'.

"Karl Ludwig Freiherr von Reichenbach (1788-1869) a notable chemist, geologist, metallurgist, naturalist, industrialist and philosopher, and a member of the prestigious Prussian Academy of Sciences. He is best known for his discoveries of several chemical products of economic importance, extracted from tar, such as eupione, waxy paraffin, phtal (the first synthetic dye) and phenol (an antiseptic). He also dedicated himself in his last years to research an unproved

field of energy combining electricity, magnetism and heat, emanating from all living things, which he called the Odic force." 30

It was when he turned his attention to other more taboo pursuits such as Lunar influences and the Odic force that his name was stricken from the scientific role of honour:

Odic force

en.wiki:

"In 1839 Von Reichenbach retired from industry and entered upon an investigation of the pathology of the human nervous system. He studied neurasthenia, somnambulism, hysteria and phobia, crediting reports that these conditions were affected by the moon. After interviewing many patients he ruled out many causes and cures, but concluded that such maladies tended to affect people whose sensory faculties were unusually vivid. These he termed "sensitives"." (psychic's, whom Reichenbach found, could see the radiation)

"Influenced by the works of Franz Anton Mesmer he hypothesised that the condition could be affected by environmental electromagnetism, but finally his investigations led him to propose a new imponderable force allied to magnetism, which he thought was an emanation from most substances, a kind of "life principle" which permeates and connects all living things. To this vitalist manifestation he gave the name Odic force." 31

hbc.com:

Like Mesmer, he was a victim of his own success. His treatments worked, with many patients applauding his cures, but straying into taboo areas is scientific suicide and he became a nonentity as far as the mainstream was concerned.

We have all been impoverished by the selective rejectionism of modern science. However, not all of the great names we recognise from past science ignored Reichenbach's wisdom and those such as Freud, Crookes, Lodge, White, Tesla and Lahkovsky appear. 32

Chapter 8

Playing the Field Effect Transistor and other semiconductors

The transistor has rightly been called the most important invention of the last century and its introduction has, without a doubt, revolutionised electronic technology. Searching its history we usually find something like the quote below and it is assumed that William Shockley et al were the inventors:

ideafinder.com:

"The transistor was invented in 1947 at Bell Telephone Laboratories by a team led by physicists John Bardeen, Walter Brattain, and William Shockley." 1

Like much of the history of technology the official, revisionist version of transistor invention and development assumes that it is the result of much research and theorising by academic physicists using quantum mechanics. In these pages we find over and over again that this is not the case. Things are not always what they seem, or what we have been taught...

Julius Edgar Lilienfeld

Lilienfeld took-out a patent in 1930 for the field-effect transistor (FET) that Shockley was trying to invent in 1947. Shockley applied for a patent in 1947, but was turned down because his was an identical transistor.

en.wiki:

"The first patent for the field-effect transistor (FET) principle was filed in Canada by Austrian-Hungarian physicist Julius Edgar Lilienfeld on October 22, 1925,

(basically the same as William Shockley's), but Lilienfeld published no research articles about his devices, and they were ignored by industry.

When Brattain, Bardeen, and Robert Gibney tried to get patents on their earliest devices, most of their claims were rejected due to the Lilienfeld patents." 2

worldwide.espacenet.com:

Julius Lilienfeld (Transistor Patent 1930)

US1745175 (A) 1930-01-28

US1745175 (A) - Method and apparatus for controlling electric currents

Inventor(s): EDGAR LILIENFELD JULIUS + (LILIENFELD JULIUS EDGAR) 3

history-computer.com:

"Besides the above mentioned patent for the first transistor, he (Lilienfeld) was a holder of several other patents in this field - US patent 1900018 "Device for controlling electric current" from 1928 for a thin film MOSFET transistor; US patent 1877140 "Amplifier for electric currents" from 1928, for a solid state device where the current flow is controlled by a porous metal layer, a solid state version of the vacuum tube; US patent 2013564 "Electrolytic condenser" from 1931, for the first electrolytic capacitor. When Brattain, Bardeen and Shockley tried to get a patent on their transistor, most of their claims were rejected namely due to the Lilienfeld patents." 4

inventors.about.com:

"Walter Brattain and John Bardeen were the ones who built the point-contact transistor... " 5 or maybe not.

fi.edu:

"The exact nature of Shockley's contributions to the development of the transistor remains a subject of controversy, as does the question of how much (if any) credit he should be given for its invention... Shockley's treatment of Bardeen and Brattain eventually prompted both men to break away from Bell Labs, and severed any good relations between himself and his former colleagues." 6

It seems that during the development of the point contact transistor, Shockley spent his time working at home on the later rejected FET, even though he and his colleagues were well aware of Lilienfeld's patent.

en.wiki:

"William Bradford Shockley Jr. (February 13, 1910 August 12, 1989) was an American physicist and inventor. Along with John Bardeen and Walter Houser Brattain, Shockley co-invented the transistor, for which all three were awarded

the 1956 Nobel Prize in Physics." 7

Being something of a radio buff in the 1950's, the author, around 12 or 13 years old, spent some time trying, with little success, to get a crystal diode to work like a triode valve/tube and amplify a signal. The point being, that everyone with an interest in electronics was trying to make what became known as the transistor for decades before 1947. Some, it seems succeeded as we will see, but they did not have the backing of a large company like Bell Telephone Laboratories to fund their researches.

Cat's Whisker

G. W. Pickard

en.wiki:

We are told by Wiki that the 'Cat's Whisker' detector, that would later be replaced by the crystal diode, was the device that gave rise to the transistor and was invented by radio engineer, G. W. Pickard (1877 – 1956). That it was a detector or rectifier used in early radio equipment for radio reception called "crystal wireless sets". On August 30, 1906 he (Pickard) filed a patent for a silicon crystal detector, which was granted on November 20, 1906. This was the first semiconductor diode, and in fact the first semiconductor electronic device. It was experiments with this device that led directly to the invention of the transistor. 8 There were others who would also lay-claim to the discovery.

Jagadish Chandra Bose

On another page of Wiki we are told that Jagadish Chandra Bose was the first to use semiconductor junctions to detect radio signals. ..but maybe not quite?

web.mit.edu:

"The autocoherer (see the chapter on radio for details of the coherer) invented by Bose was nearly a solid state diode, which was actually invented some 50 years after the autocoherer was invented. Groenhaug built a replica of a Bose detector and compared its characteristics with that of a diode. Have a look at this interesting paper. Groenhaug also plans to study the performance of Bose's galena detector and I eagerly wait for the results of his study."

"Sir J. C. Bose's Diode Detector Received Marconi's First Transatlantic Wireless Signal Of December 1901 (The "Italian Navy Coherer" Scandal Revisited (see chapter on Radio)." [3, Proc. IEEE, Vol. 86, No. 1, January 1998.]" 9

There are various opinions on what J C Bose did that we will read as we proceed. There seems to be some confusion as to what the Bose coherer was and what was used where, he certainly had more than one device. He is said not to have patented his work and then we find a patent below attributable to Bose.

ieee.org:

The "Italian Navy Coherer" Scandal Revisited

"The true origin of the "mercury coherer with a telephone" receiver that was used by G. Marconi to receive the first transatlantic wireless signal on December 12, 1901, has been investigated and determined. Incontrovertible evidence is presented to show that this novel wireless detection device was invented by Sir J.C. Bose of Presidency College, Calcutta, India. His epoch making work was communicated by Lord Rayleigh, F.R.S., to the Royal Society London, U.K., on March 6, 1899, and read at the Royal Society Meeting of Great Britain on April 27, 1899. Soon after, it was published in the Proceedings of the Royal Society. Twenty-one months after that disclosure (in February 1901, as the records indicate), Lieutenant L. Solari of the Royal Italian Navy, a childhood friend of G. Marconi's, experimented with this detector device and presented a trivially modified version to Marconi, who then applied for a British patent on the device. Surrounded by a scandal, this detection device, actually a semiconductor diode, is known to the outside world as the "Italian Navy Coherer"." 10

Oleg Losev

en.wiki:

"In the early 1920s Russia, devastated by civil war, Oleg Losev was experimenting with applying voltage biases to various kinds of crystals, with purpose to refine the reception. The result was astonishing - with a zincite (zinc oxide) crystal he gained amplification...(which is what the transistor is all about)

After the first experiments, he built regenerative and superheterodyne receivers, (see Edwin Armstrong below) and even transmitters. However, this discovery was not supported by authorities and soon forgotten and no device was produced in mass quantity beyond a few examples for research.

Crystadine (zinc oxide crystals) was produced in primitive conditions; it can be made in a rural forge - unlike vacuum tubes and modern semiconductor devices."

It is often necessary to ignore such put-downs designed to elevate the reputations of the 'official inventors'. Working in primitive conditions is more difficult than in a well equipped lab.) 11

But then we are told by inventors.about.com that:

Edwin Armstrong

inventors.about.com:

"...Edwin Armstrong should be known for inventing three key innovations: regeneration, superheterodyning, and frequency modulation. Every radio or television set today makes use of one or more of Edwin Armstrong's inventions."

12

And en.wiki:

"He later became a professor at Columbia University. He invented the regenerative circuit while he was an undergraduate and patented it in 1914, followed by the super-regenerative circuit in 1922, and the superheterodyne receiver in 1918." 13

How do two inventors so widely separated, come-up with the same ideas at the same time? One would be forgiven for expecting that there should be an empirical scientific explanation, as this phenomenon is so common when researching scientist's inventions.

14

Robert George Adams

electronic-geek.com and the-lost-transistor:

There was a serious and successful 1933 attempt to produce a transistor by the late Robert George Adams, founder of the New Zealand Section of the Institute of Electrical and Electronic Engineers (IEEE).

He stated on his now defunct web site, that he, unlike myself, successfully built a transistor at age thirteen, but failed to patent it because he assumed it was in the public domain. In other words, in 1933 it was common knowledge that such a device was possible.

Note: There are striking similarities between this experimental method and the method used by Bardeen, Brattain, and Shockley. 15

Quantum Physics

It is necessary to introduce this subject because of the widespread misunderstanding. It's not unusual these days to be told that we have the transistor thanks to quantum physics, when we already had the transistor way before modern quantum physics made any impact. Those who say such things are repeating what they were incorrectly taught by a myth-making academic education. This may get students through their exam's, but it's worthless historically and is all part-and-parcel of a scientific revisionism that is more hindsight than foresight. One suspects that all of scientific history is distorted in this way and taught to students who accept it as a true account of transistor history.

The invention of the transistor was the work of intuitive tinkerers that took place long before the theoreticians knew that such a thing existed. Not just the transistor, but the diode detector/rectifier, the LED and the coherer, just more examples of major technology born without any kind of theory that would be acceptable to today's academia.

(See the chapter on radio astronomy for another example of this kind of revisionism.)

en.wiki:

"The old quantum theory was a collection of results from the years 1900-1925 which pre-date modern quantum mechanics." 16

What this means is that quantum physics did not exist in any form recognisable today, when the first transistors arrived. 17

At this time ether theory had not been replaced by the theories of Albert Einstein and was dominant in the thinking of many physicists.

en.wiki:

"Robert B. Laughlin, Nobel Laureate in Physics, endowed chair in physics, Stanford University, had this to say about ether in contemporary theoretical physics:

It is ironic that Einstein's most creative work, the general theory of relativity, should boil down to conceptualizing space as a medium when his original premise [in special relativity] was that no such medium existed [..] The word 'ether' has extremely negative connotations in theoretical physics because of its past association with opposition to relativity. This is unfortunate because, stripped of these connotations, it rather nicely captures the way most physicists actually think about the vacuum. . . . Relativity actually says nothing about the existence or nonexistence of matter pervading the universe, only that any such matter must have relativistic symmetry. [..] It turns out that such matter exists. About the time relativity was becoming accepted, studies of radioactivity began showing that the empty vacuum of space had spectroscopic structure similar to that of ordinary quantum solids and fluids. Subsequent studies with large particle accelerators have now led us to understand that space is more like a piece of window glass than ideal Newtonian emptiness. It is filled with 'stuff' that is normally transparent but can be made visible by hitting it sufficiently hard to knock out a part. The modern concept of the vacuum of space, confirmed every day by experiment, is a relativistic ether. But we do not call it this because it is taboo."

18 Physics will not work without an ether, but has been given other names to save the face of science.

egglescliffe.org.uk:

"One theory was that the (cathode) rays were waves traveling in an invisible fluid called the "ether." At that time, many physicists thought that this ether was needed to carry light waves through apparently empty space. Another possibility was that cathode rays were some kind of material particle. Yet many physicists, including J.J. Thomson, thought that all material particles themselves might be some kind of structures built out of ether, so these views were not so far apart."

19

Even the 'discoverer' of the electron was an ether-theory-man.

Oskar Heil

history-computer.com:

"In 1934 German scientist Oskar Heil (1908-1994), electrical engineer and inventor, applied for a German patent for an early transistor-like device, describing the possibility of controlling the resistance in a semiconducting material with an electric field, which he called "Improvements in or relating to electrical amplifiers and other control arrangements and devices". In 1935 Heil received a British Belgian and French patents for his device."

He used J.E. Lilienfeld's US patent from 1930. 20

en.wiki:

"Heil is sometimes mentioned as an inventor of an early transistor-like device, based on several patents that were issued to him." 21

Patents

en.wiki:

"US 1745175 Julius Edgar Lilienfeld: "Method and apparatus for controlling electric current" first filed in Canada on 22.10.1925, describing a device similar to a MESFET

US 1900018 Julius Edgar Lilienfeld: "Device for controlling electric current" filed on 28.03.1928, a thin film MOSFET

GB 439457 Oskar Heil: "Improvements in or relating to electrical amplifiers and other control arrangements and devices" first filed in Germany on 02.03.1934

US 2524035 J. Bardeen et al.: "Three-electrode circuit element utilizing semiconductive materials" oldest priority 26.02.1948

US 2569347 W. Shockley: "Circuit element utilizing semiconductive material" oldest priority 26.06.1948" 22

en.wiki:

"In 1934 German physicist Dr. Oskar Heil patented another field-effect transistor. There is no direct evidence that these devices were built, but later work in the 1990s show that one of Lilienfeld's designs worked as described and gave substantial gain. Legal papers from the Bell Labs patent show that William Shockley and a co-worker at Bell Labs, Gerald Pearson, had built operational

versions from Lilienfeld's patents, yet they never referenced this work in any of their later research papers or historical articles." 23 24

J.C. Bose again:

"Sir Nevill Mott, Nobel Laureate in 1977 for his own contributions to solid-state electronics, remarked that "J.C. Bose was at least 60 years ahead of his time" and "In fact, he had anticipated the existence of P-type and N-type semiconductors." 25

computerhistory.org:

"Jagadis Chandra Bose, a professor of physics at Presidency College in Calcutta, India, demonstrated the use of galena (lead sulfide) crystals contacted by a metal point to detect millimeter electromagnetic waves. In 1901 he filed a U.S patent for a point-contact semiconductor rectifier for detecting radio signals." 26

Other early devices

history-computer.com:

"In 1873, the English electrical engineer Willoughby Smith (1828-1891) arrived at the discovery of photoconductivity of selenium." 27

1874

en.wiki:

"Solid-state electronics (was) born even earlier when Ferdinand Braun invented a solid-state rectifier using a point contact based on lead sulphide in 1874." 28

1924

sparkbangbuzz.com

"The Wireless World and Radio Review October 1, 1924 and October 8, 1924 entitled "The Crystal As A Generator And Amplifier" by Victor Gabel. The article also includes several regenerative receiver circuits that utilize negative resistance device for both RF amplification and detection." 29

Transistors constructed by sailors

porticus.org:

"By its nature the crystal rectifier was a passive device, with no signal gain. But radio historian Lawrence A. Pizzella WR6K notes anecdotal stories of shipboard wireless operators in the second decade of the 20th century achieving amplification using a silicon carbide (carborundum) crystal and two cats whiskers (see Adam's device above). He cites a taped interview made in 1975 with Russell Ohl at his home in Vista, California in which claims of signal gain(s) were made. This is an excerpt from Ohl's testimony:... Examples are given -

...Its perfectly clear that Bell Labs didnt invent the transistor, they re-invented it. The fact that they totally failed to acknowledged the pioneer work done by others can be explained by human nature, pride, arrogance, ignorance or plain self-interest. Its perfectly true that the world wasn't ready for previous incarnations of the transistor but that was no reason for denying that Lilienfeld patented the original solid-state triode oscillator/amplifier well before others claimed all the credit. But thats life; it was not the first time and doubtless not the last." 30

PW Crystal Experimenters Handbook 1925,
Introducing photodiodes:
PW is Popular Wireless Magazine 31 32

Captain Henry Joseph Round
en.wiki:

LED's - Light Emitting Diodes

"Electroluminescence was discovered in 1907 by the British experimenter H. J. Round of Marconi Labs, using a crystal of silicon carbide and a cat's-whisker detector. Russian Oleg Vladimirovich Losev independently reported on the creation of an LED in 1927. His research was distributed in Russian, German and British scientific journals, but no practical use was made of the discovery for several decades." 33

radio-electronics.com

"Round performed a number (of experiments on) the crystal detector using a (variety) of materials. He also applied a direct current to them and noticed that some actually emitted light. H.J. Round reported of experiments on this in the 9th February 1907 edition of Electrical World. This is the first known report of the effect of the light emitting diode. Unfortunately Round was well ahead of his time and it took until the 1960s before it was fully exploited." 34

Oleg Vladimirovich Losev again:

my-led-passion.com:

"In the April 2007 issue of Nature Photonics, Nikolay Zheludev gives credit to Losev for inventing the LED." 35

"In course of his work as a radio technician, he noticed that diodes used in radio receivers emitted light when current was passed through them. In 1927, Losev published details in a Russian journal of the first-ever light-emitting diode." 36
But...

The Father Of LED's?
my-led-passion.com:

"The first practical visible-spectrum (red) LED was developed in 1962 by Nick Holonyak Jr., while working at General Electric Company. Holonyak is seen as the "father of the light-emitting diode". 37

en.wiki:

"Nick Holonyak, Jr. (born November 3, 1928, in Zeigler, Illinois) invented the first practically useful visible LED in 1962 while working as a consulting scientist at a General Electric Company laboratory in Syracuse, New York and has been called "the father of the light-emitting diode"." 38

Developer becomes inventor, again.

CCD Charged coupled Device

The Nobel Prize in Physics 2009 Charles K. Kao, Willard S. Boyle, George E. Smith
nobelprize.org:

"The Nobel Prize in Physics 2009 was divided, one half awarded to Charles Kuen Kao "for groundbreaking achievements concerning the transmission of light in fibers for optical communication", the other half jointly to Willard S. Boyle and George E. Smith "for the invention of an imaging semiconductor circuit – the CCD sensor"". 39

We will also take a look at fibre optics.

Nobel Controversy: Willard Boyle denies Gordon's claims, proud of CCD work

POSTED BY: Samuel K. Moore / Sun, October 18, 2009

spectrum.ieee.org:

"Last Monday, I asked Willard Boyle, who will share the 2009 Nobel Prize in physics with former colleague George Smith, a few uncomfortable questions:

Should Eugene Gordon (Director of Lightwave Devices Laboratory of Bell Labs) have been on the patent for the CCD?

(Deja vu and shades of William Bradford Shockley Jr)

"I don't think so. I don't see it all. He didn't have any entries in a notebook... I've no recollection of his having been around."

Should Mike Tompsett be recognized for making the first CCD camera?

"Fair enough. He's one of the three that made the first model. No problem there."

What about those who complain that there is no physics to the invention of the CCD—that it's purely a work of engineering?

"They should complain to the Nobel Committee. We've already had a nice

engineering award for it.” 40

Nobel Controversy: Former Bell Labs Employee Says He Invented the CCD Imager.
POSTED BY: Samuel K. Moore / Thu, October 08, 2009

"The CCD that Boyle and Smith invented was not for imaging, it was intended as a memory circuit. According to both Tompsett and the United States Patent Office, it was Tompsett who invented the imager that first demonstrated the electronic photography and video in use today. Tompsett is the sole inventor listed on United States Patent Number 4,085,456 "Charge transfer imaging devices." The patent covers two, subtly different, types of imagers one of which is the CCD imager." 41

en.wiki:

"Michael Francis Tompsett is a British born physicist and former researcher at English Electric Valve Company, who later moved to Bell Labs in America. Tompsett designed and built the first ever video camera with a solid-state (CCD) sensor...

...When the charge coupled concept was co-invented by Boyle and Smith, Tompsett immediately designed the first charge coupled device (CCD). Smith wanted to keep the structure a pure MOS (metal oxide semiconductor) structure, but Tompsett insisted that a practical device needed an input and an output diode, so that is what he designed, and the device worked. Boyle and Smith received a patent for the very basic concept and cited memory as an application, without any mention in the claims about imaging. They had no insight into its application to imaging, and took no part in the invention, or subsequent development of CCDs or CCD imagers. It was Dr Tompsett who first invented the imaging application for CCDs and received the first patent for CCD imagers issued in his name alone. The citation for the award of the Nobel prize in physics in 2009 incorrectly attributed the imaging invention and work to Boyle and Smith and was a travesty.” 42

CCD imager

Bucket-Brigade Device

en.wiki:

"The concept (CCD imager) was similar in principle to the bucket-brigade device (BBD), which was developed at Philips Research Labs during the late 1960s." 43

Sangster and Teer

en.wiki:

"A bucket brigade or bucket-brigade device (BBD) is a discrete-time analogue delay line, developed in 1969 by F. Sangster and K. Teer of the Philips Research

Labs...

...The concept of the bucket-brigade device led to the charge-coupled device (CCD) developed by Bell Labs." 44

Simi and Soderman

google.com/patents:

"The Bucket Brigade Device was first patented by Victor M. Simi, Donald A. Soderman and described as an improvement."

US patent 4045810 Jul 30, 1976 Aug 30, 1977 General Electric Company Bucket-brigade delay line having reduced parasitic capacitances." 45

geofex.com:

Bucket-Brigade Device

TYPICAL APPLICATIONS:

“Voice control of tape recorders.

Variable signal control of amplitude or of equalization filters.

Reverberation effects in stereo equipment.

Tremolo, vibrato, or chorus effects in electronic musical instruments.

Variable or fixed delay of analog signals.

Time compression of telephone conversations Of other analog signals.

Voice scrambling systems." 46

pminer.org/inventor.do:

"Improved process to form bucket brigade device.

Inventors:Victor M. Simi, Donald A. Soderman, Company:International Business Machines Corporation Issued Date: 1979-10-16 The invention is the structure and process for making a bucket brigade device which comprises the merger of an MOS capacitor with an MOSFET device to form the charge transfer cell. A thin n-type region is implanted in a portion of the p-type channel ..." 47

google.com/patents:

“US 3767983 Aug 23, 1972 Oct 2, 1973 CHARGE TRANSFER DEVICE WITH IMPROVED TRANSFER EFFICIENCY. Inventors: Victor M. Simi, Donald A. Soderman

Original Assignee: International Business Machines Corporation” 48

Trend: On every occasion that I have researched a technology where a scientist or scientists have received a Nobel Prize, I find that the same technology appears at an earlier date, either invented or patented by someone else, or that there is obviously some other form of dodgy dealing going on. The CCD was not the

invention of Boyle and Smith, it was developed from the Bucket Brigade Device. The CCD was invented by Michael Francis Tompsett.

On its own, the appropriation of one technology is not worthy of much attention, but together with many other examples they represent something approaching criminal intent. Science or at least individual scientists are systematically stealing ideas.

The author has not 'cherry-picked' any of these examples, they just are this way when the history is examined. The information is freely available to anyone who wants to spend an hour or two researching some other technology where the same story will be found. Developers are given credit in the form of Nobel Prizes for 'inventions' and discoveries that were, in some of the above examples over fifty years old when they claimed ownership. Also of interest, with the exception of the one above, is the scarcity of post 1930's discoveries of new concepts that have led to any kind of major modern technology. The term 'application of modern physics' is an oxymoron.

The last word should go to "The Official Website of the Nobel prize", the creators of fabulous scientific heroes.

"This invention was the spark that ignited a huge research effort in solid state electronics. Bardeen and Brattain received the Nobel Prize in Physics, 1956, together with William Shockley, "for their researches on semiconductors and their discovery of the transistor effect." Shockley had developed a so-called junction transistor, which was built on thin slices of different types of semiconductor material pressed together. The junction transistor was easier to understand theoretically, and could be manufactured more reliably." 49

It's as if they have no idea to whom they are giving Nobel prizes or even why they are given.

The Genius Factory
cosmosmagazine.com:

"In February 1980, an article in the Los Angeles Times announced the existence of The Repository for Germinal Choice - a name that seemed straight out of an Isaac Asimov novel. But this was not science fiction. This was real.

The repository's mission was to impregnate as many women as possible with the sperm of the world's smartest men. Bankrolled by Robert Graham, an American multimillionaire, the repository was better known as the 'Nobel Prize Sperm Bank' - and it was responsible for the birth of some 200 children." 50

The Genius Factory : The Curious History of the Nobel Prize Sperm Bank
by David Plotz

Expect a rise in crime.

Chapter 9

The Computer It's Not Rocket Science

“We live in a society exquisitely dependent on science and technology, in which hardly anyone knows anything about science and technology.”

Carl Sagan.

I'm occasionally told that were it not for science, I would not be sitting at my computer typing the various subjects for this book. They surely mean science in its universal sense and not academic science - we need to separate the two to make any sense of a mythological history. We are all able to partake in universal science, it's what many of the names below, who gave us the computer were

doing, but academic scientists call it pseudo-science, because it is not what they do. We see in other chapters how science debunks, or calls them taboo, sabotages and pours scepticism on the new things it considers a danger to the scientific and wider institutional status quo.

Many things attributed to modern academic science have a history that goes back far before the word science was used and modern academic science is a babe-in-arms compared to the history of computing. Modern scientists who have made major contributions to computing are very few and far between.

But because people are taught by academics, they seem to assume that the subjects they are taught are the brainchildren of academics. This idea, although almost universally untrue, is encouraged by those same academic teachers who themselves, mistakenly, often believe it. The idea that the computer is the work of academic scientists is a myth.

The ancient history of automata with programmed control goes back more than two thousand years. What needs not to be emphasised is that they were 'programmable' and its the program that makes the difference and makes computers what they are today. The transition from mechanical to electronic programming is an inevitable step and dependent on the availability of technology; the original idea is priceless. 1

Sequence Control

mlahanas.de:

"Heron of Alexandria (c. 10 - 70 AD) described a mechanism or apparatus that made use of the so called "sequence control mechanism". This mechanism used drums in which pins and gears were mounted to control events that 'laid ahead'. Sequence control gives a means to foretell the outcome of a sequence of events in advance, without influencing the outcome directly. Examples of sequence control are a music box with a drum on which pins are attached that strike against the teeth of a comb. Teeth that have predefined lengths and thus possess their own tone. By striking teeth in a predefined sequence a melody will sound. Sequence control is defined as a lower generation of computer programs. The operator feeds machines like that with certain limited input and lets the machine run on its own without external control for the outcome: actions to move mechanical contraptions, music or calculations." 2

9th Century

en.wiki:

"The Banu Musa brothers also invented an automatic flute player which appears to have been the first programmable machine." 3

en.wiki:

"Most notable among their achievements is their work in the field of automation, which they utilized in toys and other entertaining creations. They have shown important advances over those of their Greek predecessors.

The Book of Ingenious Devices describes 100 inventions; the ones which have been reconstructed work as designed. While designed primarily for amusement purposes, they employ innovative engineering technologies such as one-way and two-way valves able to open and close by themselves, mechanical memories, devices to respond to feedback, and delays. Most of these devices were operated by water pressure.

Qaras'un, a treatise on weight balance.

On Mechanical Devices, a work on pneumatic devices, written by Ahmad.[6]

A Book on the Description of the Instrument Which Sounds by Itself, about musical theory." 4

aliak.com:

1206

"In 1206, Al-Jazari invented a programmable musical automaton featuring humanoid musicians and drummers which could be made to play different rhythms and drum patterns if the pegs were moved around. According to Charles B. Fowler, the automata were a robot band which performed "more than fifty facial and body actions during each musical selection." 5

George Boole, School Teacher (not a scientist) and The Father of Computer Science.

gap-system.org:

"In 1834 he opened his own school in Lincoln although he was only 19 years old. In 1838 Robert Hall, who had run Hall's Academy in Waddington, died and Boole was invited to take over the school which he did. His parents, brothers and sister moved to Waddington and together they ran the school which had both boarding and day pupils.

Boole was unable to take Duncan Gregory's advice and study courses at Cambridge as he required the income from his school to look after his parents.

Many honours were given to Boole as the genius in his work was recognised. He received honorary degrees from the universities of Dublin and Oxford and was elected a Fellow of the Royal Society (1857). However his career, which was started rather late, came to an unfortunately early end when he died at the age of 49." 6

georgeboole.net:

"In 1837, something happened on Doncaster town fields that was to have a profound effect on the whole of the 20th century. A young teacher from Lincoln called George Boole was taking a walk when he had a moment of inspiration. He was suddenly inspired to devise and develop a system of algebraic logic that would systematically define and model the function of the human brain. Over the next few decades, Boole refined this idea and eventually published his work in a book 'The Laws of Thought'. What he had invented has become known as Boolean Logic, and it is the basis of all computer and microprocessor systems in the world today. Without George Boole, who knows where digital technology might be in the 21st century." 7

en.wiki again:

"The personal character of Boole inspired all his friends with the deepest esteem. He was marked by true modesty, and his life was given to the single-minded pursuit of truth. Though he received a medal from the Royal Society for his memoir of 1844, and the honorary degree of LL.D. from the University of Dublin, he neither sought nor received the ordinary rewards to which his discoveries would entitle him." 8

What this is saying basically, is that he was not a scientist in the way that the word is generally understood today.

Time-line for George Boole

Boole did not study for an academic degree, but from the age of 16 he was an assistant school teacher at Heigham's School in Doncaster.

1842 Boole had begun to correspond with De Morgan and when in the following year he wrote a paper "On a general method of analysis applying algebraic methods to the solution of differential equations", he sent it to De Morgan for comments. It was published by Boole in the Transactions of the Royal Society in 1844 and for this work he received the Society's Royal Medal in November 1844. His mathematical work was beginning to bring him fame... He taught there for the rest of his life, gaining a reputation as an outstanding and dedicated teacher.

1849 Boole was appointed to the chair of mathematics at Queens College, Cork in . (With no academic qualifications)

1849 that Boole was to become the first Professor of Mathematics at Queen's College, Cork,

1851 Boole was elected as Dean of Science, a role he carried out conscientiously.

1851 he published his mathematical work: "I am now about to set seriously to work upon preparing for the press an account of my theory of Logic and Probabilities which in its present state I look upon as the most valuable if not the only valuable contribution that I have made or am likely to make to Science and

the thing by which I would desire if at all to be remembered hereafter ... "

1854 he published 'An investigation into the Laws of Thought', on which are founded the 'Mathematical Theories of Logic and Probabilities'.

1857 He received honorary degrees from the universities of Dublin and Oxford and was elected a Fellow of the Royal Society... However his career, which was started rather late, came to an unfortunately early end when he died at the age of 49.

1864 8 Dec he died having spent around 18 years as a teacher and 15 years in academia. 9

Not exactly your typical academic career?

Charles Babbage's Difference and Analytical Engines

en.wiki:

"Charles Babbage, FRS (26 December 1791 18 October 1871) was an English mathematician, philosopher, inventor, and mechanical engineer who originated the concept of a programmable computer."

(Not a qualified scientist,) "he received an honorary degree without examination in 1814." 10

Babbage seems never to have built a completed version of his Analytical Engine.

en.wiki:

Augusta Ada King,

"Countess of Lovelace (1815-1852), born Augusta Ada Byron, (daughter of Lord Byron), was an English writer chiefly known for her work on Charles Babbage's early mechanical general-purpose computer, the analytical engine. Her notes on the engine include what is recognised as the first algorithm intended to be processed by a machine; as such she is regarded as the world's first computer programmer." Not a scientist, but educated in mathematics. 11

well.com:

"Despite (her mother) Lady Byron's programming, Ada did not sublimate her poetical inclinations. She hoped to be "an analyst and a metaphysician". In her 30's she wrote her mother, if you can't give me poetry, can't you give me "poetical science?" Her understanding of mathematics was laced with imagination, and described in metaphors.

At the age of 17 Ada was introduced to Mary Somerville, a remarkable woman who translated LaPlace's works into English, and whose texts were used at Cambridge. Though Mrs. Somerville encouraged Ada in her mathematical studies, she also attempted to put mathematics and technology into an appropriate human context. It was at a dinner party at Mrs. Somerville's that Ada heard in November,

1834, Babbage's ideas for a new calculating engine, the Analytical Engine. He conjectured: what if a calculating engine could not only foresee but could act on that foresight. Ada was touched by the "universality of his ideas". Hardly anyone else was." 12

He was thinking of artificial intelligence, something still outside of the understanding of science and generally, completely misunderstood.

en.wiki:

"Babbage published the following on Ada's contribution, in his *Passages from the Life of a Philosopher* (1864).

"I then suggested that she add some notes to Menabrea's memoir,(Luigi Federico Menabrea) 13 an idea which was immediately adopted. We discussed together the various illustrations that might be introduced: I suggested several but the selection was entirely her own. So also was the algebraic working out of the different problems, except, indeed, that relating to the numbers of Bernoulli, which I had offered to do to save Lady Lovelace the trouble. This she sent back to me for an amendment, having detected a grave mistake which I had made in the process.""

The "algebraic working out" Babbage describes is the derivation of the mathematical equations 1 through 9 in Note G, not the Table & Diagram in Note G showing punch card flow. The table, not the equations, is considered the first computer program. In Ada's and Babbage's letters to each other in 1843, the only contemporary documentation, Ada mentions finding and correcting errors in "our first edition of a Table & Diagram" (Ada frequently used "our" when discussing the Notes in letters with Babbage)" 14

It must be remembered that women of the day were considered to be intellectually inferior and a history will be slanted by this prejudice.¹⁵ What we see in her is imagination used to further knowledge, something taboo even in today's science. Science expects knowledge to emerge from past knowledge, like induction from the electromagnetic radiation of a conductor. Unfortunately all that transpires is past knowledge.

J. H. Muller's Difference Engine, 1786

en.wiki:

"J. H. Muller, an engineer in the Hessian army conceived the idea in a book published in 1786, but failed to find funding to progress this further.

In 1822, Charles Babbage proposed the use of such a machine in a paper to the Royal Astronomical Society on 14 June entitled "Note on the application of machinery to the computation of astronomical and mathematical" 16

"Johann Helfrich von Muller (1746 - 1830) was an engineer in the Hessian army who in 1786 conceived the idea that would later evolve into modern computers, the Difference Engine." 17

"Mullers (first) machine was ready on 20th June 1784."

It seems that a number of non-scientists were involved in the development of the Difference Engine.

Logic gates and flip-flops in 1886

...are switches that can remember on and off, and are used to represent 0 and 1, the basis of all electronic computers.

en.wiki:

"In a 1886 letter, Charles Sanders Peirce described how logical operations could be carried out by electrical switching circuits. Starting in 1898, Nikola Tesla filed for patents of devices containing logic gate circuits..." 18

wordiq.com:

Nikola Tesla's "1903 patents 723,188 and 725,605 contain the basic principles of the logical AND circuit element basic to all computers." 19 20

US Patent 613,809 "Method Of And Apparatus For Controlling Mechanism Of Moving Vessels Or Vehicles".

wordiq.com:

"Walther Bothe, inventor of the coincidence circuit, got part of the 1954 Nobel prize in physics, for the first electronic AND gate in 1924." 21 Already patented by Tesla.

oscience.info:

"The first electronic AND gate is invented by Walther Bothe, inventor of the coincidence circuit." 22

The Coincidence Circuit:

The AND Gate is a switch that switches on or off in response to a signal from elsewhere, like a relay. The Bothe Coincidence Circuit consisted of two (or more) AND Gates responding to Geiger Müller Tubes. The idea is, that both switches need to closed at the same time in order to complete the circuit and thereby activate a counter or other device. In the experiment below, one GM tube may be unshielded and the other shielded by lead and iron. If the counter is activated, it is known that the radiation has passed through the shielding with the same ease as that in the unshielded environment.

Bothe did not use an electronic circuit:

en.wiki:

"The Bothe-Kohlhörster experiment demonstrated the presence of penetrating charged particles in cosmic rays. They used the same mechanical-photographic method for recording simultaneous discharges which, in this experiment, signalled the passage of a charged cosmic ray particle through both counters and through the thick wall of lead and iron with which they had surrounded the counters. Their paper, entitled "Das Wesen der Höhenstrahlung", was published in the Zeitschrift für Physik v.56, p.751 (1929)." 23

mpg.de:

"Together with Max Born, Bothe received the Nobel Prize for the development of the coincidence method, which fundamentally improved the measuring and thus the study of radiation phenomena." 24

Nikola Tesla had already patented his, "Apparatus for the Utilization of Radiant Energy", US-Patent 685,957, in November 05,1901. 25

nuenergy.org:

Brooklyn Eagle July 10, 1932 Tesla states:

"More than 25 years ago I began my efforts to harness the cosmic rays and I can now state that I have succeeded in operating a motive device by means of them. I will tell you in the most general way, the cosmic ray ionizes the air, setting free many charges ions and electrons." 26

It seems he had succeeded in converting comic rays into usable energy, something already discussed in chapter one regarding radioactivity. We will return to this subject in the later chapter on energy.

Bruno Rossi, 1930

en.wiki:

"Bruno Rossi, at the age of 24, was in his first job as assistant in the Physics Institute of the University of Florence when he read the Bothe-Kohlhörster paper. It inspired him to begin his own research on cosmic rays. He fabricated Geiger tubes according to the published recipe, and he invented the first practical electronic coincident circuit. It employed several triode vacuum tubes, and was capable of registering coincident pulses from any number of counters with a tenfold improvement in time resolution over the mechanical method of Bothe. Rossi described his invention in a paper entitled "Method of Registering Multiple Simultaneous Impulses of Several Geiger Counters", published in Nature v.125, p.636 (1930). The Rossi coincidence circuit was rapidly adopted by experimenters

around the world. It was the first practical AND circuit, precursor of the AND logic circuits of electronic computers." 27

en.wiki:

"Among his (Rossi's) contributions to the electronic techniques of experimental physics are the inventions of the coincidence circuit (Florence 1930), the time-to-amplitude converter (Cornell 1942) and the fast ionization chamber (Los Alamos, with H. Staub 1943)." 28

en.wiki:

"William Henry Eccles FRS (1875–1966) was a British physicist and a pioneer in the development of radio communication...in 1898, he became an assistant to Guglielmo Marconi, the Italian radio entrepreneur." 29

See the chapter on Radio where the reliability of Marconi is questioned with regard to Tesla's and other patents.

mpoweruk.com:

William Henry Eccles and F.W. Jordan

"1919 The flip-flop or bi-stable latch circuit a basic building block in all digital computers and logic circuits was invented by British engineers William Henry Eccles and F.W. Jordan working at the government's National Physical Laboratory. (They seem to have invented something already well-known in 1886 and patented in 1898) 30

mpoweruk.com:

Originally implemented with triodes, now with transistors (diagram), it can remember two possible conditions or states and thus is able to store a single bit of information or a binary digit, thus enabling computers to count. This was the circuit chosen in 1958 by Robert Noyce (See below) for the first planar Integrated Circuit.

Eccles and Jordan were not Americans as reported on many US based web sites. Another internet myth. Eccles did pioneering work on radio propagation and was a Fellow of the Royal Society (FRS). He rose to be President of the Physical Society from 1928 to 1930, and President of the Institute of Electrical Engineers (IEE) in 1926. Jordan faded into obscurity." 31

Frank Wilfred Jordan again.

This Wiki article is somewhat confusing as it begins by describing Jordan as a lecturer in physics, he then becomes an electrician:

en.wiki:

"In 1912 he was a "lecturer in physics", presumably at the Royal College of Science."

But at the time of the 'invention' of the flip-flop (1918) he is demoted:

"In 1918 he was an "electrician" at City and Guilds Technical College. There is little else known about him.

This flip-flop circuit became the most important circuit in computer technology for it can be given a large number of different actions." 32

And so we see that "the most important circuit" was invented by someone about whom nothing is known and having already been invented sometime before 1886 and patented in 1898?

en.wiki:

"Following World War I Eccles' main interest was in electronic circuit development. In 1918 he worked in collaboration with F. W. Jordan to patent the flip-flop circuit, which became the basis of electronic memory in computers." 33

inventors.about.com:

"Konrad Zuse, (1910–1995) was a German civil engineer and computer pioneer. His greatest achievement was the world's first functional program-controlled Turing-complete computer, the Z3, which became operational in May 1941." 34

inventors.about.com:

"Konrad Zuse (1910-1995) was a construction engineer (not a scientist) for the Henschel Aircraft Company in Berlin, Germany at the beginning of WWII.

According to "The Life and Work of Konrad Zuse" (by Horst Zuse)

In 1941, the Z3 contained almost all of the features of a modern computer as defined by John von Neumann and his colleagues in 1946. The only exception was the ability to store the program in the memory together with the data. Konrad Zuse did not implement this feature in the Z3, because his 64-word memory was too small to support this mode of operation. Due to the fact that he wanted to calculate thousands of instructions in a meaningful order, he only used the memory to store values or numbers.

The block structure of the Z3 is very similar to a modern computer. The Z3 consisted of separate units, such as a punch tape reader, control unit, floating-point arithmetic unit, and input/output devices."

"Konrad Zuse wrote the first algorithmic programming language called 'Plankalkül' in 1946, which he used to program his computers. He wrote the world's first chess-playing program using Plankalkül." 35

Tommy Flowers

bbc.co.uk:

"Flowers's first contact with the wartime codebreaking effort came when he was asked for help by Alan Turing, who was then working at the government's Bletchley Park codebreaking establishment 50 miles north of London. Turing wanted Flowers to build a decoder for the relay-based Bombe machine, which Turing had developed to help decrypt the Germans' Enigma codes. Although the decoder project was abandoned, Turing was impressed with Flowers's work, and introduced him to Max Newman who was leading the effort to break a teletype-based cipher, called "Geheimschreiber" (secret writer) by the Germans and "Fish" by the British decoding team. This was a much more complex coding system than Enigma; the decoding procedure involved trying so many possibilities that it was impractical to do by hand. In February 1943, Flowers proposed an electronic system, which he called Colossus, using over 1800 valves (vacuum tubes). Because the most complicated previous electronic device had used about 150 valves, some were sceptical that such a device would be reliable. Flowers countered that the British telephone system used thousands of valves and was reliable because the electronics were operated in a stable environment that included having the circuitry on all the time. The Bletchley Park management were not convinced, however, and merely encouraged Flowers to proceed on his own. He did so, providing much of the funds for the project himself." (He was a post office engineer and not a scientist)

http://en.wikipedia.org/wiki/Tommy_Flowers

The "project" was the first practical programmable electronic computer. The credit for this is often given to Turing, but although his contribution to the war effort code breaking was invaluable, it was Post Office engineer Tommy Flowers who built the first computer with his own funding. His brainchild Colossus was classified after WWII and his name was not mentioned until 1974 for this reason.

"Colossus was a secret until 1974 and the program's algorithms are still secret."

It would be interesting to know why?

"It was not until 1970 that existence of the Colossus was revealed publicly as the result of the USA's Freedom of Information Act. (The US government had been given details of Colossus during the war as part payment for US assistance to the UK's war effort.)" 36

"Colossus undoubtedly made a contribution to the development of computers in Britain by showing Turing, Newman, and others what electronics could do and that knowledge turned their minds to computers immediately after the war."

The Design of Colossus

THOMAS H. FLOWERS 37

Some sources mistakenly attribute the design and building of Colossus to Turing and there is no mention of Flowers. This seems to arise from an inability to

conceive of the possibility that the first computer was the work of a non-scientist, a denial. This is emphasised with the names of Alan Turing and John von Neumann cropping-up continuously in written works on computers, even though their contribution to actual hardware is minimal compared to the other names on this page. 38

en.wiki:

"A frequent misconception is that Turing was a key figure in the design of Colossus." 39

Flowers was insistent that scientists played no part in the British version, and I suppose he should know?

He even mentions parallel processing. 40

The Design of Colossus

THOMAS H. FLOWERS

<http://www.ivorcatt.com/47c.htm>

The academics are not the ones to pass up the opportunity to invite one so esteemed into their ranks and so..."Tommy received an honorary doctorate from Newcastle University in 1977, and another from Dc Montfort University in Leicester. His life's work was also acknowledged by the award of the Post Office's first Martlesham Medal in 1980...

"One anecdote I feel I must recount here is that when someone remarked to Tommy about Alan Turing's "great contribution" to Colossus, Tommy replied: "Alan Turing had nothing to do with it!" 41

But now he can be called Dr. Flowers which makes him appear to have been an academic scientist. Hi ho!

Von Neumann and Alan Turing

turing.org:

"The Internally Stored Modifiable Program

The breakthrough came through two sources in 1945:

Alan Turing, on the basis of his own logical theory, and his knowledge of the Colossus.

The EDVAC report, by John von Neumann, but gathering a great deal from ENIAC engineers Eckert and Mauchly.

They both saw that the programs should be stored in just the same way as data. Simple, in retrospect, but not at all obvious at the time." 42

I would dearly love to add some small justification for the above, but it simply does not exist. Turing's knowledge of Colossus can only have come from the Post

Office engineers Tommy Flowers et al who built it. It is admitted in the text above that Von Neumann acquired his information from ENIAC engineers Eckert and Mauchly. What exactly was the contribution of Von Neumann and Turing, apart from theorising on that which was already up-and-running?

There are various other claims to the first electronic computer:

The Atanasoff-Berry Computer

en.wiki:

American sources have often cited the Atanasoff-Berry computer as the first computer:

"The AtanasoffBerry Computer (ABC) was the first electronic digital computing device. Conceived in 1937, the machine was not programmable (and therefore does not meet the criterion required on these pages), being designed only to solve systems of linear equations. It was successfully tested in 1942. However, its intermediate result storage mechanism, a paper card writer/reader, was unreliable, and when inventor John Vincent Atanasoff left Iowa State College for World War II assignments, work on the machine was discontinued." 43

en.wiki:

"ENIAC; Electronic Numerical Integrator And Computer was the first electronic general-purpose computer. It was Turing-complete, digital, and capable of being reprogrammed to solve a full range of computing problems.

ENIAC was designed to calculate artillery firing tables for the United States Army's Ballistic Research Laboratory. When ENIAC was announced in 1946 it was heralded in the press as a "Giant Brain".

Equating computers with the human brain is a fantasy that persists to this day. 44

Integrated Circuits, (IC's), Chips, Microchips and Printed Circuit Boards (PCB's)

Printed Circuit Boards (PCBs)

electroline.com.au:

"In 1903, Albert Parker Hanson, a German citizen living in London, submitted a British patent application for flexible printed wiring circuits intended for use in telephone exchange interconnections.

Based on flat parallel copper conducting strips bonded to paraffin waxed paper, the design used a double layer construction. The copper strips were to be arranged in alternate layers forming a rectangular grid. Interconnections were crimped through holes in the paper. Hanson's patent application also described double-sided and multilayer boards.

"Hanson may have originally developed this design in 1898 and had certainly submitted a German patent application in 1902 that was not published until

1905. The British Patent Office placed the Hanson patent application in the public domain in 1903 and granted it in 1904." 45

mpoweruk.com:

"1918 Max Schoop produced high current printed circuit boards with heavy tracks for high power vacuum tube circuits using metal deposition by flame spraying through a mask. While successful, like Arthur Berry's ideas before him, they were not taken up by others." 46

1936 Paul Eisler

en.wiki:

"The inventor of the printed circuit was the Austrian engineer Paul Eisler who, while working in England, made one circa 1936 as part of a radio set. Around 1943 the USA began to use the technology on a large scale to make rugged radios for use in World War II. After the war, in 1948, the USA released the invention for commercial use." 47

Integrated Circuit – IC, Microchip, CPU

Jack Kilby

"Jack St. Clair Kilby (November 8, 1923 – June 20, 2005) was an American electrical engineer who took part (along with Robert Noyce) in the realization of the first integrated circuit while working at Texas Instruments (TI) in 1958. He was awarded the Nobel Prize in physics in 2000." 48

Central Processing Unit, CPU

"A central processing unit (CPU), also referred to as a central processor unit, is the hardware within a computer system which carries out the instructions of a computer program by performing the basic arithmetical, logical, and input/output operations of the system. The term has been in use in the computer industry at least since the early 1960s. The form, design, and implementation of CPUs have changed over the course of their history, but their fundamental operation remains much the same." 49

It was the integrated circuit that led to the processor (CPU) and it's difficult to decide when the one became the other. Most sites credit Jack Kilby with the invention of the IC, for which he won a Nobel Prize in 2000, but history says otherwise. It seems that Kilby was not the only claimant at this time and that the original idea was much earlier:

1949 Werner Jacobi

en.wiki:

"Early developments of the integrated circuit go back to 1949, when the German engineer Werner Jacobi of Siemens AG filed a patent for an integrated-circuit-like semiconductor amplifying device showing five transistors on a common substrate arranged in a 2-stage amplifier arrangement. Jacobi discloses small and cheap hearing aids as typical industrial applications of his patent. A commercial use of his patent has not been reported. 50

WikiTalk:

"Furthermore, there is a German patent number 833366 which was granted to a Mr. Werner Jacobi on May 15th, 1952, describing the idea of manufacturing several amplifier stages on a single semiconductor by means of applying multiple electrodes to the surface of the semiconductor. It is a rather cursory patent, but nevertheless contains the basic idea of an integrated circuit, at about the same time when Dummer described the idea. Maybe it would be appropriate to include this in the list of inventors. --Stefan heinzmann" 51

en.wiki:

1952 Geoffrey W.A. Dummer

"The idea of the integrated circuit was conceived by a radar scientist working for the Royal Radar Establishment of the British Ministry of Defence, Geoffrey W.A. Dummer (1909-2002), who published it at the Symposium on Progress in Quality Electronic Components in Washington, D.C. on May 7, 1952. He gave many symposia publicly to propagate his ideas. Dummer unsuccessfully attempted to build such a circuit in 1956.

A precursor idea to the IC was to create small ceramic squares (wafers), each one containing a single miniaturized component. Components could then be integrated and wired into a bidimensional or tridimensional compact grid. This idea, which looked very promising in 1957, was proposed to the US Army by Jack Kilby, and led to the short-lived Micromodule Program (similar to 1951's Project Tinkertoy). However, as the project was gaining momentum, Kilby came up with a new, revolutionary design: the IC." 52

Geoffrey Dummer again

en.wiki again:

"Geoffrey William Arnold Dummer, (1909-2002) MBE (1945), C.Eng., IEE Premium Award, FIEEEE, MIEE, USA Medal of Freedom with Bronze Palm was a British electronics engineer and consultant who is credited as being the first person to conceptualise the integrated circuit, commonly called the microchip, in the late-1940s and early 1950s...In 1952 he presented his work at a conference in Washington, DC,(Dum and Dummer!) some six years before Jack Kilby of Texas

Instruments was awarded a patent for essentially the same idea. As a result he has been called "The Prophet of the Integrated Circuit"...

...In May 1952 Geoffrey Dummer read a paper at the US Electronic Components Symposium. At the end of the paper he made the statement:

With the advent of the transistor and the work on semi-conductors generally, it now seems possible to envisage electronic equipment in a solid block with no connecting wires. The block may consist of layers of insulating, conducting, rectifying and amplifying materials, the electronic functions being connected directly by cutting out areas of the various layers." 53

inventors.about.com:

"In 1959 both parties applied for patents. Jack Kilby and Texas Instruments received U.S. patent #3,138,743 for miniaturized electronic circuits. Robert Noyce and the Fairchild Semiconductor Corporation received U.S. patent #2,981,877 for a silicon based integrated circuit." 54

Both Jack Kilby and Robert Noyce had access to the relevant information before their "invention" and their success was in the field of development. The Prophet was the (re)inventor. Did the prophet know about the 1949 work of German engineer Werner Jacobi? Additionally, Drummer it seems was not a "radar scientist" but an electrical engineer.

en.wiki:

"Robert John (Bob) Widlar (pronounced wide-lar); born on November 30, 1937 in Cleveland; died February 27, 1991 in Puerto Vallarta, Mexico) was an American electronic engineer and a (development and marketing) pioneer of linear (analog) integrated circuit (IC) design." 55

DATA RECORDING

HDD Hard Disk Drive

The development of the computer as we know it, would not have been possible without the hard disk drive (HDD). Searching the web, we find superficially, that its invention is credited to IBM and Reynold B. Johnson in the 1950's. 56

en.wiki:

"IBM manufactured magnetic disk storage devices from 1956 to 2003, when it merged its hard disk drive business with Hitachi's. Both the hard disk drive (HDD) and floppy disk drive (FDD) were invented by IBM and as such IBM's employees were responsible for many of the innovations in these products and their technologies. The basic mechanical arrangement of hard disk drives has not

changed since the IBM 1301. Disk drive performance and characteristics are measured by the same standards now as they were in the 1950s. Few products in history have enjoyed such spectacular declines in cost and size along with corresponding improvements in capacity and performance." 57

Reynold Johnson

en.wiki:

"The IBM 350 Disk File, invented by Reynold Johnson, was introduced in 1956 with the IBM 305 RAMAC computer."... 58 although the idea and the patents for magnetic recording appeared some fifty years earlier.

en.wiki:

"Reynold B. Johnson (1906 - 1998) was an American inventor and computer pioneer. A long-time employee of IBM, Johnson is said to be the "father" of the disk drive. Other inventions include automatic test scoring equipment and the videocassette tape. Johnson graduated from Minnehaha Academy (1925) and went on to graduate from the University of Minnesota (BS in Educational Administration, 1929)." 59

Magnetic disk recording goes back way before Johnson and although it was something of a novelty, it has been around for as long as any other method of recording.

The development of existing technology by Johnson is not invention, it is development, and we can also rule-out the inventions of both the disk drive and the video-cassette tape as they had already been invented.

It has always seemed fair that the announcement of an invention should also be accompanied by credit given to the person or persons who thought of the original idea. However, modern history seems to give credit only to ideas by academics or in this case researchers working for large international companies. Some of the ideas recorded here are accredited to those who had nothing to do with the original idea. This manipulation of history is seemingly endless.

livingstonmontana.com:

"While on loan to Sony, (Reynold B.) Johnson developed the process to store video on half the width of normal video tape. It is now known as VCR." 60

It seems that he reduced the width of the existing videotape by half and can only claim the cassette as his own idea...or can he?

History

Oberlin Smith 1888

oberlinsmith.org:

“Thomas Edison demonstrated his newly invented phonograph machine to Oberlin Smith when Smith visited Edison in his Menlo Park laboratory in 1878. As a lover of music, Smith purchased an Edison phonograph, but soon found the audio quality of it to be “too scratchy” and he questioned the expense and precision of its mechanical parts. After nearly ten years of tinkering, Smith published the idea of storing a recording on a magnetic wire in the English journal *Electrical World* , and became the father of all magnetic recording devices.” 61

Magnetic recording appears to have had its intellectual début in the workshop of Oberlin Smith of Cincinnati, Ohio, a mechanical engineer. (Note, again we see a major innovation that dates back to before the 1930's and no scientist involved) He published an original work suggesting magnetic recording in 1888. The article appeared in a British magazine where he suggested the use of permanent magnetic impressions for recording sound. His ideas were apparently taken seriously by Valdemar Poulsen, a Danish engineer.

Valdemar Poulsen

He developed a magnetic wire recorder, the 'Telegraphone' that received a patent in 1898. He invented devices that recorded on tape, and disks and so we see that recordable magnetic disks were 50 years old when the first recordable magnetic disks were 'invented' in the 1950's by IBM scientists. What they did was to change the format from analogue to digital, digital being easier to record. The digital format being the invention of Alec Harley Reeves in 1938. Note the 1930's watershed yet again. 62

en.wiki:

"Valdemar Poulsen (23 November 1869 – 23 July 1942) was a Danish engineer who developed a magnetic wire recorder in 1899." 63

h2g2.com:

Poulsen recorded the voice of Emperor Franz Joseph, which is still preserved today. It is the oldest existing magnetic recording. 64

Curt Stille and a Cassette in 1925

oktopus.hu:

1925 - “Stille and another German, Karl Bauer (a licensee of the Stille wire recorder patents), marketed an improved wire recorder telephone answering/dictation machine called the Dailygraph (In 1925). The machine was

manufactured by the Vox company, also of Germany. Later versions of the Dailygraph include provisions for a cartridge, apparently the first use of a cartridge-loaded (cassette) medium." 65

The cassette was, as we recall, was re-invented by Reynold B. Johnson in the 1960's.

openlearn.open.ac.uk:

"The development of an electronic amplifier using the thermionic valve (vacuum tube) enabled the tiny magnetic fluctuations in the steel wire to be magnified to a usable level. By 1924 a German engineer, Dr Curt Stille, had developed a machine that could record sounds on a steel tape. The BBC (British Broadcasting Company) showed great interest for (it), at this time, they used disc recorders for pre-recording programmes and talks that were cut into acetate discs, replayed maybe twice and then discarded. So they sent two engineers to Berlin for a demonstration. They offered to buy the machine but were refused and so returned empty-handed. In 1931 Louis Blattner purchased a Stille machine, shipped it to England and renamed it the Blattnerphone, illustrated in Figure 20. It used 2-inch (50-mm) wide flat steel tape and could record for up to 20 minutes." 66

S. J. Begun

No link for this one:

1939-45 - At the (Charles) Brush Development Company, S. J. Begun develops steel tape and coated-paper tape recorders. Between 1942 and 1945 the company designs and successfully sells to the military various types of recorders utilizing plated media in the form of tapes, disks, and wire.

Google Patents:

SJ BEGUN - US Patent 2,535,480, 1950 67

(Fritz) "Pfleumer used very thin paper which he coated with iron oxide powder using lacquer as glue. He received a patent in 1928." 68

en.wiki:

"Fritz Pfleumer (20 March 1881 in Salzburg – 29 August 1945 in Radebeul) was a German-Austrian engineer who invented magnetic tape for recording sound." 69

1932

"AEG, a large German electrical manufacturer, purchases the patent rights of the independent inventor Fritz Pfleumer, who after 1928 patented a system for recording on paper coated with a magnetisable, powdered steel layer. AEG sets about designing a tape recorder, while it collaborates with the German chemical firm I. G. Farben to develop a suitable tape. I. G. Farben experiments with tape

coated with carbonyl iron powder, made under a proprietary process."
<http://mysite.verizon.net/cbladey/soundmus/wollensaktr.html>

1943

en.wiki:

"German engineers had developed a high-quality form of magnetic tape sound recording that was unknown elsewhere. The Nazi radio networks used it to broadcast music and propaganda around the clock.

On his way back home to San Francisco, Mullin made a chance stopover at a nearby German radio station at Bad Nauheim, which was already in American hands. Here he was given two suitcase-sized AEG 'Magnetophon' high-fidelity recorders and 50 reels of Farben recording tape. Mullin had them shipped home and over the next two years he worked on the machines constantly, modifying them and improving their performance. His main hope was to interest the Hollywood movie studios in using magnetic tape for movie sound recording.

Mullin gave two public demonstrations of his machines in Hollywood in 1947, in which he first presented live music performed behind a curtain, followed by a concealed playback of the performance. Mullen's recorder caused a sensation among American audio professionals and many listeners could not tell the difference between the recorded and live performances. By luck, Mullin's second demonstration was at MGM Studios in Hollywood and in the audience that day was Bing Crosby's technical director, Murdo Mackenzie. Mackenzie arranged for Mullin to meet Crosby, and in June 1947 Crosby was given a demonstration of Mullin's magnetic tape recorders." 70

1945

mysite.verizon.net:

"Former serviceman John T. Mullin demonstrates a captured Magnetophon to the Institute of Radio Engineers. Performer Bing Crosby works with Mullin to use the Magnetophon for radio broadcasts on ABC" 71

1945

mysite.verizon.net:

"American and British technical investigators "discover" the Magnetophon in Luxembourg, France, and other places formerly occupied by the Germans. By Spring, these investigators begin gathering information about the production of tape recorders and tape, and the U.S. Department of Commerce publishes the information. The U.S. Alien Property Custodian seizes German patent rights on the technology." 72

How many reputations were crafted from Nazi technology?

1950's

Magnetic disk technology ran alongside that of tape, the only difficulty being that of tracking. But this also seems to have been overcome because, during the fifties, magnetic disk recorders were being manufactured for sale to the public. The Timex Magnetic Disc Recorder and the Pye 'Record Maker' are just two examples to illustrate that the idea behind the hard disk drive is not new. The Timex Thermionic Products 'Recordon' used a 9" dia oxide coated paper disk and was on sale from 1954 to 1957. 73

It was to be the tape recorder that grabbed the public imagination and became popular with the recordists, due to, I would guess, the longer playing time. The magnetic disk became the forerunner of the floppy disk and the HDD.

Optical Recording

CD's and DVD's are a development of much earlier optical recording systems where an analogue sound track was recorded onto a motion picture film. Digital recordings can be made on the same medium as analogue recordings:

Sound on Film

amps.net:

"The first attempts to record sound to an optical medium occurred around 1900. In 1906 Eugene Lauste applied for a patent to record sound on film. He and Dickson worked on the moving picture idea that Edison wanted to go with the phonograph. The result of their work, which Edison took the credit for, was the famous Kinetoscope. In 1905 he built a complete experimental apparatus for recording and reproducing pictures and sound simultaneously on the same film, a British patent No 18057 was granted in August 1907." 74

en.wiki:

In 1923 Lee de Forest applied for a patent to record to film; he also made a number of short experimental films, mostly of vaudeville performers. 75

No theory technology

Eric Tigerstedt

en.wiki:

"Eric Magnus Campbell Tigerstedt (August 4, 1887 – April 20, 1925) was one of the most significant inventors in Finland at the beginning of the 20th century, and has been called the "Thomas Edison of Finland". He was the first person to implement a working sound-on-film technology," 76

en.wiki:

"After many disappointments, Tigerstedt finally succeeded in substantially improving on the design of Lee De Forest, and he achieved an amplification effect many times that of the original vacuum tubes. His achievement was purely experimental, as there were no prior experience or mathematical models that he could have followed. This was a major step forward for Tigerstedt, and he was soon able to show a film with sound which was electrically amplified and broadcast through a speaker system. He had finally solved the most difficult practical problem of talking movies. Beginning in 1919, DeForest created his own sound-on-film system, which he called Phonofilm, and which may have used some of Tigerstedt's concepts." 77

1926

Wiki:

"Vitaphone, the first long playing records at 33 1/3 RPM were in use from 1926. Using a synchronised disk, the system was quickly supplanted by technologies which recorded a sound track optically directly onto the side of the strip of motion picture film. This was the dominant technology from the 1930s through the 1960s and is still in use as of 2004." 78

Laser Recording

At this point, I was about to say that there are exceptions to all rules and admit that the laser, something also integral to computer data recording, came about as a result of the theoretical work of Albert Einstein. However, reading various versions of the history of his Nobel prize the jury is still out until I find some information that gives clear answers on the subject. It seems that no two writers agree as to exactly what he received the prize for, and this apparently also applies to the Nobel committee who made the award after a year of deliberation.

en.wiki:

"Albert Einstein received his Nobel Prize one year later, in 1922. During the selection process in 1921, the Nobel Committee for Physics decided that none of the years nominations met the criteria as outlined in the will of Alfred Nobel. According to the Nobel Foundation's statutes, the Nobel Prize can in such a case be reserved until the following year, and this statute was then applied. Albert Einstein therefore received his Nobel Prize for 1921 one year later, in 1922." 79

en.wiki gets it wrong.

"In 1921, Einstein was awarded the Nobel Prize in Physics. Because relativity was still considered somewhat controversial, it was officially bestowed for his explanation of the photoelectric effect. He also received the Copley Medal from

the Royal Society in 1925." 80
All very confusing, relatively speaking.

nobelprize.org:

"As is well known Einstein did not get the Nobel Prize for his relativity theories due to strong disbeliefs in those theories among some influential members of the Royal Swedish Academy of Sciences. The 1911 Nobel Laureate in Physiology or Medicine Allvar Gullstrand was of the opinion that the correctness of Einstein's special relativity theory rested on belief - not proven facts,(as it still does to this day) and the general relativity theory could in his opinion not stand a critical analysis...

...The Nobel Committee avoids committing itself to the particle concept. Light-quanta or with modern terminology, photons, were explicitly mentioned in the reports on which the prize decision rested only in connection with emission and absorption processes. The Committee says that the most important application of Einstein's photoelectric law and also its most convincing confirmation has come from the use Bohr made of it in his theory of atoms, which explains a vast amount of spectroscopic data...

...Bohr, however, resisted the concept of photons for many years, until about 1925. In his 1922 Nobel lecture Bohr expressed his opposition in the following words: "In spite of its heuristic value the hypothesis of light quanta, which is quite irreconcilable with the so-called interference phenomena, is not able to throw light on the nature of radiation." Einstein was invited to receive his prize at the same event, but could not come, because of his journey to Japan. Thus the world missed the opportunity to witness an early discussion between these two giants of physics about the nature of light.

The connection between Einstein and Bohr, which the Nobel Committee for physics saw, was made manifest by the two Nobel Prizes decided in 1922: the reserved one from the earlier year to Einstein and the current one to Bohr." 81

Albert Einstein is a megastar of physics, his reputation built on hype comparable to that of a Hollywood movie star. We will probably never know the facts behind this award, but you never know!

Ted Maiman

en.wiki:

"Theodore Harold "Ted" Maiman (1927 – 2007) was an American physicist (Maiman was an engineer) who made the first laser (Light Amplification by Stimulated Emission of Radiation).[1] Maiman received many awards and honors for his work, and was the author of a book titled The Laser Odyssey, which

describes the events surrounding the creation of the first laser.” 82

CD, DVD, Laser Disk, Video Disk

Dr. David Paul Gregg, according to Wiki, is credited with invention of the optical disk (CD, DVD, Laser Disk) in 1958. However, there do seem to be a string of complaints about the contents of the Wiki article on this subject. The author of these pages has no idea why there should be so much confusion about a relatively modern technology?

WikiTalk:

"I have a problem with the intro to this section:

The Compact Disc is not an invention: it is the convergence of a series of enabling technologies, such as laser technology, mechanics, electronics, and coding technology. Therefore, nobody can claim that he or she is the inventor of the Compact Disc...Is it just a digital version of the Videodisc developed in the 60s and 70s? " 83

...and recording in digital is no different from recording in analogue. The discussion continues with a somewhat (by now) lame argument that we have come across before in these pages:

WikiTalk:

"The same sort of argument could be made for just about any invention. Take the automobile - we couldn't have cars if someone hadn't invented the wheel, wagons, metalurgy, internal combustion engines, etc. And of course we never would have CDs if nobody had invented lasers, transistors, computers, digital audio formats, etc. But just because an invention builds on previous inventions doesn't mean that it's any less an invention in its own right.

Credit for the invention should be given to Philips and Sony and their "joint taskforce of engineers."" 84 But it's not.

This argument is based on the assumption that some of the examples given: “lasers, transistors, computers, digital audio formats, etc.” are automatically assumed to be the work of academics. The Compact Disc "invention" is attributed to an academic who is deserving of the accolade if the circular reasoning is accepted. The "engineering task-force" is assumed to be working on the instructions of the academic.

The insecurity of the scientific community is such that it deems it necessary to lay-claim to every new technology even when the claimant is making pots of money from the idea.

It may be useful at this point to look back and to consider just what contribution

has been made by academics. They have in some instances, taken part in the development of some of the mentioned technologies. But development is engineering and not science and so with the exception of laser theory, which itself seems to have a somewhat dubious provenance, we have as yet found no other supporting academic science in the history of computer technology.

en.wiki:

"Dr. David Paul Gregg was the inventor of the optical disc (disk). Gregg was inspired to create the optical disc in 1958 while working at Californian electronics company, Westrex. He (His) first patent for a "Videodisk" was filed in March 1962 (USPO 3350503) where he looks to advance electron beam recording and reproducing. Gregg went to work at 3M's Mincom division with experienced television videotape engineers Wayne Johnson and Dean De Moss. The three men subsequently filed patents to cover a disc recording system, a way to duplicate discs, and reproducing TV signals from photographic discs. When Mincom contracted Stanford's SRI to further the research, Gregg left and formed his own company Gauss Electrophysics." 85

Videodisc History Time-line

Mostly from en.wiki:

1898

"E & H T Anthony, a camera maker based in New York, marketed in 1898 a combination motion picture camera and projector called "The Spiral" that could capture 200 images arranged in a spiral on an 8 inch diameter glass plate, which when played back at 16 frames per second would give a running time of 13 seconds.

Theodore Brown patented in 1907 (UK patent GB190714493) a photographic disk system of recording approximately 1,200 images in a spiral of pictures on a 10 inch disk. Played back at 16 frames per second, the disk could provide around one and a quarter minutes of material. The system was marketed as the Urban Spirograph by Charles Urban, and discs were produced - but it soon disappeared [2]

1930s

John Logie Baird, created the Phonovision system in the early 1930s, which mechanically produced about four frames per second. The system was not successful." 86

But someone did get it to work:

1941 The Video Jukebox

cedmagic.com:

"jukebox from 1941 that played a stack of VideoDiscs and was the television equivalent of a Wurlitzer Jukebox. The image was seen through the aperture at the top, and the sound recorded on the discs came out the large round speaker at the bottom. A stack of 10" VideoDiscs can be seen at the left side of the large opening in the middle, with any one of the discs being selectable using the row of buttons underneath the opening. The grooved discs rotated at 100 RPM and provided about a minute of playback. This system appeared in the December 1941 issue of Popular Mechanics, so the advent of World War II halted any commercial implementation of the VideoDisc jukebox. Manufacture of televisions was also halted during the war." 87

1950's

P.M.G Toulon, a French inventor working at Westinghouse Electric during the 1950s and 1960s patented a system in 1952 (US Patent 3198880) which used a slow spinning disc with a spiral track of photographically 1.5 millimeter wide recorded frames, along with a flying spot scanner, which swept over them to produce a video image. This was intended to be synchronously combined with playback from a vinyl record. It appears a working system was never produced. It has similarities with the tape based Electronic Video Recording system, which was released for professional use.88

Digital Transmissions and Recording

en.wiki and connected-earth.com:

"Engineer, Alec Harley Reeves, (1902 - 1971) recognised the potential of pulse-code modulation (What are now called digital transmissions or recordings) for reducing noise when speech is transmitted over long distances. He patented the invention in 1938, (that 1930's deadline again) but it was impractical at the time due to the need for the complex circuits needed with valve/vacuum tube technology. It only became feasible in the 1950's with the introduction of the transistor. He was also involved in the invention of optical fibres." (See below). 89

Reeves was a pioneer of semiconductor devices and among the first to exploit the possibility of using light to carry information. When 'waveguides' - pipes carrying high frequency signals - failed to work, Reeves thought of glass fibres. In the late 1960's, he inspired and led the team under Charles Kao and George Hockham (See below) that created the world's first practical optical fibre system."

Open-minded, he experimented with the paranormal and believed he was in regular contact with the 19th century inventor of DC electrical generation, Michael Faraday. (It's not unusual to find a spiritual element in the lives of those

who have pioneering ideas, but this is not considered to be sound scientific methodology. LoL)⁹⁰

There is very little scope for inventors these days and almost no forums where they can exchange ideas. New ideas are frowned upon and inventors are often accused of pseudo-science by sceptics and sceptical scientists who often never have an original idea in their lives.

Inkjet and other Printers

Lord Kelvin Inkjet 1867

en.wiki:

The continuous inkjet (CIJ) method is used commercially for marking and coding of products and packages. The idea was first patented in 1867 by Lord Kelvin, and the first commercial devices (medical strip chart recorders) were introduced in 1951 by Siemens ⁹¹

elsa.berkeley.edu:

For all its originality, the idea behind the inkjet is far from new. As long ago as 1867, William Thomson (later known as Lord Kelvin) was granted a patent for "Receiving or Recording Instruments for Electrical Telegraphers" which used electrostatic forces to control the release of ink drops on to paper. ⁹²

Xerox 1937

inventors.about.com:

In 1937, the process called Xerography was invented by American law student Chester Carlson. Carlson had invented a copying process based on electrostatic energy. Xerography became commercially available in 1950 by the Xerox Corporation. Xerography comes from the Greek for "dry writing".⁹³

Rune Elmqvist Elmqvist 1948

en.wiki:

"Rune Elmqvist Elmqvist initially worked as a medical doctor (having trained in Lund), but later worked as an engineer and inventor.

In 1948, he developed the first inkjet ECG printer which he called the mingograph while working at Elema-Schnander, a company which later became Siemens-Elema. In 1957 he received an honorary doctorate." ⁹⁴ Well he would, it's very flattering.

Daisy Wheel 1972

en.wiki:

In 1972 a team at Diablo Systems led by engineer David S. Lee developed the first commercially successful daisy wheel printer, a device that was faster and more flexible than IBM's golf-ball devices, being capable of 30 cps (characters per second), whereas IBM's Selectric operated at 13.4 cps.⁹⁵

Computing and programming falls exclusively into the hands of the military and the academics at this point in history because they are the only ones with decent computers...

The Internet

Like the CD/DVD, the Internet cannot be said to have been invented by any single individual, it evolved from the existing technology. There is the usual academic exaggeration of achievement, but having come this far, I hope the reader can ignore it?

The Internet seems to have arisen from computer networking systems. The telephone system was already in place and already using such things as Fax and Teleprinters to exchange information. The first public Internet seems to have been based on these systems:

en.wiki:

"The first public dial-in networks used asynchronous TTY (teleprinter (teletypewriter, Teletype or TTY for TeleTYpe/TeleTYpewriter) terminal protocols to reach a concentrator operated in the public network. Some networks, such as CompuServe, used X.25 to multiplex the terminal sessions into their packet-switched backbones, while others, such as Tymnet, used proprietary protocols.

In 1979, CompuServe became the first service to offer electronic mail capabilities and technical support to personal computer users. The company broke new ground again in 1980 as the first to offer real-time chat with its CB Simulator. Other major dial-in networks were America Online (AOL) and Prodigy that also provided communications, content, and entertainment features. Many bulletin board system (BBS) networks also provided on-line access, such as FidoNet which was popular amongst hobbyist computer users, many of them hackers and amateur radio operators." ⁹⁶

Did Tim Berners-Lee invent the Internet?

en.wiki tells us:

"He studied at Queen's College, Oxford, from 1973 to 1976, where he received a first-class degree in physics." http://en.wikipedia.org/wiki/Tim_Berners-Lee And this is true, although he never became a physicist and he never worked as a physicist for CERN - as some would have us believe.

The Myth

en.wiki:

"By Christmas 1990, Berners-Lee had built all the tools necessary for a working Web: the first web browser (which was a web editor as well); the first web server; and the first web pages, which described the project itself. On 6 August 1991, he posted a short summary of the World Wide Web project on the alt.hypertext newsgroup."

(The newsgroup was Usenet for those who think there was no Internet before Lee.)

http://en.wikipedia.org/wiki/World_Wide_Web

Usenet 1979:

today.duke.edu:

"On May 20, Duke will shut down its Usenet server, which provides access to a worldwide electronic discussion network of newsgroups started in 1979 by two Duke graduate students, Tom Truscott and Jim Ellis.

Working with a graduate student at UNC-Chapel Hill, they came up with a simple program to exchange messages and files between computers at Duke and UNC using telephone modems.

The "Users Network," Usenet for short, grew into an international electronic discussion forum with more than 120,000 newsgroups dedicated to various topics, from local dining to computer programming languages. Each group had a distinctive name such as soc.history or sci.math."
<http://today.duke.edu/2010/05/usenet.html>

1980 Usenet

en.wiki:

"Usenet is a worldwide distributed Internet discussion system. It was developed from the general purpose UUCP architecture of the same name.

Duke University graduate students Tom Truscott and Jim Ellis conceived the idea in 1979 and it was established in 1980. Users read and post messages (called articles or posts, and collectively termed news) to one or more categories, known as newsgroups. Usenet resembles a bulletin board system (BBS) in many respects, and is the precursor to the various Internet forums that are widely used today. Usenet can be superficially regarded as a hybrid between email and web forums."

<http://en.wikipedia.org/wiki/Usenet>

about.com:

Did Tim Berners-Lee invent the Internet?:

"No, Tim Berners-Lee did not invent the Internet. The Internet was created in the late 1960's as a collaborative effort between several universities and the U.S. Department of Defense (ARPANET). Tim Berners-Lee used the already existing Internet as the foundation for how the World Wide Web would function. For more on the early days of the Internet, read The History of the Internet." <http://websearch.about.com/od/searchingtheweb/p/Tim-Berners-Lee.htm>

articles.latimes.com:

"Bob Taylor was the single most important figure in the history of the Internet, and he holds that stature because of his government role. Crovitz then points out that TCP/IP, the fundamental communications protocol of the Internet, was invented by Vinton Cerf (though he fails to mention Cerf's partner, Robert Kahn). He points out that Tim Berners-Lee "gets credit for hyperlinks." <http://articles.latimes.com/2012/jul/23/news/la-mo-who-invented-internet-20120723>

"Hypertext is a software system that links topics on the screen to related information and graphics." Dictionary.com

A Hyperlink looks like this

en.wiki:

"The term "hyperlink" was coined in 1965 (or possibly 1964) by Ted Nelson at the start of Project Xanadu. Nelson had been inspired by "As We May Think", a popular 1945 essay by Vannevar Bush." <http://en.wikipedia.org/wiki/Hyperlink> (Ted Nelson's hyperlinks never came to fruition)

en.wiki:

"Meanwhile, working independently, a team led by Douglas Engelbart (with Jeff Rulifson as chief programmer) was the first to implement the hyperlink concept for scrolling within a single document (1966), and soon after for connecting between paragraphs within separate documents (1968), with NLS. Ben Shneiderman working with graduate student Dan Ostroff designed and implemented the highlighted link in the HyperTIES system in 1983. HyperTIES was used to produce the world's first electronic journal, the July 1988 Communications of ACM, which was cited as the source for the link concept in Tim Berners-Lee's Spring 1989 manifesto for the Web. In 1988, Ben Shneiderman and Greg Kearsley used HyperTIES to publish "Hypertext Hands-On!", the world's first electronic book."

http://en.wikipedia.org/wiki/Hyperlink#History_of_the_hyperlink

(Much of this happened when Berners-Lee was ten years old.)

Hyperties and Hyperties Browser

http://en.wikipedia.org/wiki/The_Interactive_Encyclopedia_System
en.wiki:

The Interactive Encyclopedia System, or TIES, was a hypertext system developed at the University of Maryland, College Park by Ben Shneiderman in 1983. The earliest versions of TIES ran in DOS text mode, using the cursor arrow keys for navigating through information. A later version of HyperTIES for the Sun workstation was developed using the NeWS window system, with an authoring tool based on UniPress's Gosling Emacs text editor.

http://en.wikipedia.org/wiki/The_Interactive_Encyclopedia_System

(This is identical to the browser (WWW) that Berners-Lee loaded onto the CERN system)

BT goes to court over hyperlink "invention"

"BT's claim is a real stretch but it's a fact that you can't have a hyperlink without Bemer's slash," said Adam Kaplan, an open source programmer and law student. "Bemer's altruism may help to establish the fact that hyperlinks are the work of many programmers who for good reasons didn't choose to claim ownership of their particular piece of code or idea."

<http://www.wired.com/culture/lifestyle/news/2002/02/50398?currentPage=all>

<http://www.contractoruk.com/news/0074.html>

<http://www.bobbemer.com/BACSLASH.HTM>

Back to - articles.latimes.com:

"Lots of problems here. Cerf and Kahn did develop TCP/IP--on a government contract! And Berners-Lee doesn't get credit for hyperlinks--that belongs to Doug Engelbart of Stanford Research Institute, who showed them off in a legendary 1968 demo you can see here. Berners-Lee invented the World Wide Web--and he did so at CERN, a European government consortium."

<http://articles.latimes.com/2012/jul/23/news/la-mo-who-invented-internet-20120723>

WWW, WorldWideWeb was the name of Berners-Lee's modified and unsuccessful web browser, not the name of the world-wide system, the Internet.

List of Internet pioneers is endless

http://en.wikipedia.org/wiki/List_of_Internet_pioneers

So, how does a software consultant become Sir Timothy John "Tim" Berners-Lee, OM, KBE, FRS, FREng, FRSA?

when there are dozens of Internet pioneers to choose from?

It must first of all be understood that science (here in the guise of physics) needs heroes, because of its hundred-year record of non-achievement in new technology derived from new physics; there is none!

Berners-Lee is an Oxford graduate with a first-class degree in physics and he was in the right place at the right time. That's not to say he had to do anything himself. Because he was a child of scientific method, he became the obvious candidate for academic sanctification, a modern, mythical, scientific, superhero-extraordinaire.

When things are a little slow in physics (and they usually are), the powers-that-be tend to do this kind of thing. It's a boost for CERN scientists who have never done anything useful for anyone, except in ensuring the perpetuation of jobs for CERN physicists.

Lee is not an Einstein, he didn't publish any equations or write any world shattering programs.

He used someone else's programming to become:

According to CERN's own website: home.web.cern.ch:

"The British scientist at CERN, (who) invented the World Wide Web (WWW) in 1989". <http://home.web.cern.ch/about/birth-web>

The inference is that a CERN physicist invented the Internet, suggesting that they are all brilliant but frustrated geniuses, just dying to give us their technological breakthroughs. But, they are so busy with the higher things that we plebs would do better not trying to understand, that they just don't have the time.

This is about as far from the truth as it's possible to get, but science journalists believe it and pass it on to their science-hungry but gullible readers.

A myth is born from dishonesty about the role of CERN physicists!

This is not the first time something like this has happened in the world of computing as we will see below with the Myth of Alan Turing.

(Not forgetting: "Einstein's Fridge" for a similar odyssey into modern mythology.)

The newspapers believe it:

telegraph.co.uk:

"Sir Tim Berners-Lee: The man who invented the world wide web."

<http://www.telegraph.co.uk/technology/news/4979384/Sir-Tim-Berners-Lee-The-man-who-invented-the-world-wide-web.html>

That Berners-Lee invented the Internet is fine for those who like modern mythology. It would be brilliant if it were true because this is what Hollywood says scientists do, but it's not true. However, everyone is perfectly entitled to believe it if they don't like history.

What he did was to load a software program called WWW onto the CERN hub.

Meanwhile, the Hub was already up and quite happily running the Internet at the time. If there was no Internet before Lee, CERN would not have needed a hub for him to up-load his software.

Lee was not a CERN scientist, he worked for them as a contracting software consultant, an engineer at best, not a physicist.

en.wiki:

"...Tim" Berners-Lee, OM, KBE, FRS, FREng, FRSA (born 8 June 1955), also known as "TimBL," is a British computer scientist, best known as the inventor of the World Wide Web. He made a proposal for an information management system in March 1989, and he implemented the first successful communication between a Hypertext Transfer Protocol (HTTP) client and server via the Internet sometime around mid November...

...After graduation, he worked as an engineer at the telecommunications company Plessey in Poole. In 1978, he joined D.G. Nash in Dorset, where he helped create type-setting software for printers...

Berners-Lee worked as an independent consultant software engineer at CERN from June to December 1980. While there, he proposed a project based on the concept of hypertext, to facilitate sharing and updating information among researchers. To demonstrate, he built a prototype system named "ENQUIRE"

http://en.wikipedia.org/wiki/Tim_Berners-Lee

ENQUIRE was never used or published and I'm told the original cannot be found.

See: http://en.wikipedia.org/wiki/ENQUIRE#Why_ENQUIRE_failed

URL, Uniform Resource Locator (Web Address)

It seems that he did have a hand in developing the URL. The address of his browser addition to the CERN server was www.

Weeeell Not quite!

en.wiki:

"The Uniform Resource Locator (URL) was created in 1994 by Tim Berners-Lee and the URI working group of the Internet Engineering Task Force (IETF) as an outcome of collaboration started at the IETF Living Documents "Birds of a Feather" session in 1992.

The format combines the pre-existing system of domain names (created in 1985) with file path syntax, where slashes are used to separate directory and file names. Conventions already existed where server names could be prepended to complete file paths, preceded by a double-slash (/)." http://en.wikipedia.org/wiki/Uniform_resource_locator#History

See above for: BT goes to court over hyperlink "invention" (/, slash)

Domain Names

en.wiki:

"The practice of using a name as a simple memorable abstraction of a host's numerical address on a computer network dates back to the ARPANET era, before the advent of today's commercial Internet."

http://en.wikipedia.org/wiki/Domain_name#History

Browser

en.wiki:

"Burners-Lee's first browser (the one he used) at CERN was the NeXTStep operating system, developed by NeXT Computer of NeXT Inc., a company founded by Steve Jobs and several other veterans of the Macintosh and Lisa teams, from 1988 until 1990. It was intended to run on its own range of proprietary workstation computers, such as the NeXTcube.

It was later ported to several other computer architectures. (See below)

The browser could access Usenet newsgroups (that were already there) and FTP files as well. However, it could run only on the NeXT. Nicola Pellow therefore created a simple text browser that could run on almost any computer called the Line Mode Browser."

See:

http://en.wikipedia.org/wiki/History_of_the_World_Wide_Web

http://en.wikipedia.org/wiki/History_of_the_Internet#Packet_switching

Who is Nicola Pellow? She wrote the program for the first "working" HTML universal browser and her name should be up in lights, but it's not.

livinginternet.com:

"Nicola Pellow was a member of the WWW Project at CERN, working with Tim Berners-Lee. She joined the project in November 1990, while an undergraduate math student at Leicester Polytechnic (now De Montfort University).

Almost immediately after Berners-Lee completed the WorldWideWeb web browser for the NeXT platform, (that was unsuitable because it only worked with NeXTStep operating systems) Pellow wrote a generic Line Mode Browser called WWW that could run on non-NeXT systems. The WWW team ported the browser to a range of computers, from Unix to Microsoft DOS, so that anyone could access the web, which at that point consisted primarily of the CERN phone book.

(As we can see it was Nicola Pellow who 'invented' (programmed) www and not Lee.)

She left CERN at the end of August 1991, but returned after graduating in 1992, and worked with Robert Cailliau on MacWWW, the first web browser for Mac OS. Line-mode. Nicola Pellow, a math student interning at CERN, wrote a line-mode web browser that would work on any device, even a teletype. In 1991, Nicola and the team ported the browser to a range of computers, from Unix to Microsoft DOS, so that anyone could access the web, at that point consisting primarily of the CERN phone book."

http://www.livinginternet.com/w/wi_browse.htm

en.wiki:

(Damning Pellow with faint praise)

The team recruited Nicola Pellow, a math student intern working at CERN, to write a "passive browser" so basic that it could run on most computers of that time. The name "Line Mode Browser" refers to the fact that, to ensure compatibility with the earliest computer terminals such as teletype machines, the program only displayed text, (no images) and had only text input.

http://en.wikipedia.org/wiki/Line_Mode_Browser

Who is Louise Addis?

en.wiki:

"Paul Kunz from the Stanford Linear Accelerator Center visited CERN in September 1991, and was captivated by the Web. He brought the NeXT software back to SLAC, where librarian Louise Addis adapted it for the VM/CMS operating system on the IBM mainframe as a way to display SLACs catalog of online documents; this was the first (HTML) web server outside of Europe and the first in North America"

http://en.wikipedia.org/wiki/History_of_the_Web

We have two examples here of physicists recruiting unknown and unsung women to do their programming for them.

Ada Lovelace, the first programmer - History Repeats Itself and would you believe it?

en.wiki:

"Augusta Ada King, Countess of Lovelace (10 December 1815 27 November 1852), born Augusta Ada Byron and now commonly known as Ada Lovelace, was an English mathematician and writer chiefly known for her work with Charles Babbage on the early mechanical general-purpose computer, the Analytical Engine. Her notes on the engine include what is recognized as the first algorithm intended to be processed by a machine. Because of this, she is often considered the world's first computer programmer."

https://en.wikipedia.org/wiki/Ada_Lovelace

The Alan Turing Myth - Colossal

That the bright spark of genius is more apt to visit the keen amateur than the professor is a notion true, but unacceptable to the academics. And so they build their own phantom, a caricature of grim academic genius, a fantasy visited on an unsuspecting soul, alive or dead. They manufacture in preconceived image and groom him like a Hollywood movie star, they overload him with unearned acclaim...

How Alan Turing Invented the Computer Age scientificamerican.com

"Turing demonstrated (read theorised) you could construct a single Universal Machine that could simulate any Turing Machine. One machine solving any problem, performing any task for which a program could be written - sound familiar? He'd invented the computer."

<http://blogs.scientificamerican.com/guest-blog/2012/04/26/how-alan-turing-invented-the-computer-age/>

COMPUTING MACHINERY AND INTELLIGENCE

By A. M. Turing

"I propose to consider the question, "Can machines think?""

<http://loebner.net/Prizef/TuringArticle.html>

Even after all these years the answer is still a resounding "NO", computers are adding machines, not thinkers. The computer is only as good as the programmer -who is able to think.

Alan Turing did not crack the Enigma code, nor did he play any part in the design of Colossus or any other computer and it's doubtful that he made any contribution to computer development.

Tommy Flowers and Colossus

"The first practical programmable electronic computer Colossus, was designed and built by Tommy Flowers, a Post Office engineer, at his own expense. Flowers himself makes it quite clear that Alan Turing had nothing to do with it:

highfields-arc.co.uk:

"One anecdote I feel I must recount here is that when someone remarked to Tommy about Alan Turing's "great contribution" to Colossus, Tommy replied:

"Alan Turing had nothing to do with it!" It seemed like it wasn't the first time Tommy had heard of Turing's "great contribution" to the engineering and practical breakthroughs that Tommy was crucially involved in - and he was quite keen to put the record straight! (and who would blame him?)"

<http://highfields-arc.co.uk/geninfo/pchist/tflowers.htm>

colossus-computer.com:

"The view that Turing's interest in electronics contributed to the inspiration for Colossus is indeed common. This claim is enshrined in codebreaking exhibits in leading museums; and in the Annals of the History of Computing, Lee and Holtzman state that Turing 'conceived of the construction and usage of high-speed electronic devices; these ideas were implemented as the "Colossus" machines'.⁹⁴ However, the definitive 1945 General Report on Tunny makes matters perfectly clear: 'Colossus was entirely the idea of Mr. Flowers' (see the extract from page 35 in the right-hand column).⁹⁵ By 1943 electronics had been Flowers' driving passion for more than a decade and he needed no help from Turing. Turing was, in any case, away in the United States during the critical period at the beginning of 1943 when Flowers proposed his idea to Newman and worked out the design of Colossus on paper. Flowers emphasised in an interview that Turing 'made no contribution' to the design of Colossus.⁹⁶ Flowers said: 'I invented the Colossus. No one else was capable of doing it.'⁹⁷"

<http://www.colossus-computer.com/colossus1.html#section06>

Note

We need to stop here and consider that one of the links below records that it was the code breakers themselves, with Turing and Newman at their head, who rejected the Colossus idea, causing Flowers to go-it-alone. It was also these same codebreakers who initially tried to reject the person (Bill Tutte) who actually did break the code. This goes some of the way to an understanding of just how much history has been distorted in order to build the myth of Alan Turing.

en.wiki:

Flowers had first met (and got on with) Turing in 1939, but was treated with disdain by Gordon Welchman, because of his advocacy of valves rather than relays. Welchman preferred the views of Wynn-Williams and Keene of BTM, and wanted Radley and "Mr Flowers of Dollis Hill" removed from work on Colossus for "squandering good valves".

http://en.wikipedia.org/wiki/Tommy_Flowers

See also Gordon Welchman:

http://en.wikipedia.org/wiki/Gordon_Welchman

However:

en.wiki:

"On 19 February 1946 Turing presented a detailed paper to the National Physical Laboratory (NPL) Executive Committee, giving the first reasonably complete design of a stored-program computer. However, because of the strict and long-lasting secrecy around the Bletchley Park work, he was prohibited (because of the Official Secrets Act) from explaining that he knew that his ideas could be implemented in an electronic device.

The better-known EDVAC design presented in the of a First Draft Report on the EDVAC (dated June 30, 1945), by John von Neumann, who knew of Turing's theoretical work, received much publicity, despite its incomplete nature and questionable lack of attribution of the sources of some of the ideas.

http://en.wikipedia.org/wiki/Automatic_Computing_Engine

Turing was involved with von Neumann and EDVAC. Can it be that Turing gave von Neumann Flower's ideas? Surely not!

See also:

<http://www.ivorcatt.com/47c.htm>

<http://news.bbc.co.uk/dna/place-lancashire/plain/A1010070>

http://en.wikipedia.org/wiki/Tommy_Flowers#World_War_II

http://en.wikipedia.org/wiki/Colossus_computer

<http://www.bletchleypark.org.uk/content/museum/tour24.rhtm>

Whoops! Don't believe all that you read in the newspapers:

dailymail.co.uk:

"Groundbreaking: Alan Turing also invented the code breaking naval Enigma machine, pictured, which cracked the Nazis' coding machine and stripped U-boats blockading Britain of their cover."

Read more: <http://www.dailymail.co.uk/sciencetech/article-2299245/Alan-Turings-Universal-Machine-named-greatest-British-innovation-20th-Century.html#ixzz2RCoTrmRH>

The example above shows graphically just how little is generally known about Alan Turing. The academic historians must have a fairly complete understanding of his true life and work and yet it can't be found in print.

He was a homosexual who had a hard time in his day, as did other homosexuals. Can it be that the mythmaking is more complex in his case? That the myth is not only the usual attempt to elevate the scientist above the mere mortal, but an apology for an historically bad attitude of science regarding gender preferences? Whatever the answer may be, science tells lies about its manufactured heroes and we are all the poorer for the misinformation.

bbc.co.uk:

"He (Alan Turing) is often called the "father of computing", but was this really the case at the time of conception?

Turing's former Cambridge tutor and leader of the wartime Colossus development at Bletchley Park, Prof Max Newman, described him as "one of the most profound and original mathematical minds of his generation".

And yet, when asked what influence Turing's 'On Computable Numbers' paper had in the early days of computer design, Newman replied: "I should say practically none at all." <http://www.bbc.co.uk/news/technology-18327261>

en.wiki:

"Arthur Scherbius (1878 1929) was a German electrical engineer who patented an invention for a mechanical cipher machine, later sold as the Enigma machine."

https://en.wikipedia.org/wiki/Arthur_Scherbius

<http://www.bletchleypark.org.uk/content/machines.rhtm>

en.wiki:

Colossus again

"Flowers proposed an electronic system, which he called Colossus, using perhaps 1,800 thermionic valves (vacuum tubes), and having only one paper tape instead of two...

The Bletchley Park management were not convinced, however, and merely encouraged Flowers to proceed on his own. He did so, providing much of the funds for the project himself. Flowers had first met (and got on with) Turing in 1939, but was treated with disdain by Welchman, because of his advocacy of valves rather than relays. Welchman preferred the views of Wynn-Williams and Keene of BTM, and wanted Radley and Mr Flowers of Dollis Hill removed from work on Colossus for squandering good valves...

Flowers's first contact with the wartime codebreaking effort came in February 1941 when his director, W Gordon Radley was asked for help by Alan Turing, who was then working at the government's Bletchley Park codebreaking establishment 50 miles north west of London in Buckinghamshire. Turing wanted Flowers to build a decoder for the relay-based Bombe machine, which Turing had developed to help decrypt the Germans' Enigma codes." http://en.wikipedia.org/wiki/Tommy_Flowers#World_War_II

en.wiki:

"Flowers had first met (and got on with) Turing in 1939, but was treated with disdain by Gordon Welchman, because of his advocacy of valves rather than relays. Welchman preferred the views of Wynn-Williams and Keene of BTM, and wanted Radley and "Mr Flowers of Dollis Hill" removed from work on Colossus

for "squandering good valves"."

http://en.wikipedia.org/wiki/Gordon_Welchman

Colossus was intended to process information derived from Lorenz cipher machine (teleprinter) transmissions and not the Enigma as is so often believed. The reader can see from this that no support for Colossus was forthcoming from Turing or Max Newman Turing supposedly the ideas-man behind all modern electronic computers.

Enigma Machine

The Enigma machine was not cracked by Bletchly codebreakers as the required information had been available to French and British military intelligence since 1939:

en.wiki:

"An Enigma machine is any of a family of related electro-mechanical rotor cipher machines used for the encryption and decryption of secret messages. Enigma was invented by the German engineer Arthur Scherbius at the end of World War I. The early models were used commercially from the early 1920s, and adopted by military and government services of several countries most notably by Nazi Germany before and during World War II. Several different Enigma models were produced, but the German military models are the ones most commonly discussed.

The Polish Cipher Bureau first broke Germany's military Enigma ciphers in December 1932. Five weeks before the outbreak of World War II, on 25 July 1939, they presented their Enigma-decryption techniques and equipment to French and British military intelligence in Warsaw.

https://en.wikipedia.org/wiki/Enigma_machine

<http://www.bletchleypark.org.uk/content/machines.rhtm>

en.wiki:

Marian Adam Rejewski (16 August 1905 – 13 February 1980) was a Polish mathematician and cryptologist who in 1932 solved the plugboard-equipped Enigma machine, the main cipher device used by Germany. The success of Rejewski and his colleagues Jerzy Rózycki and Henryk Zygalski jump-started British reading of Enigma in World War II; the intelligence so gained, code-named "Ultra", contributed, perhaps decisively, to the defeat of Nazi Germany.

http://en.wikipedia.org/wiki/Marian_Rejewski

Turing and the Bomba

en.wiki

"The bombe was an electromechanical device (not electronic) used by British cryptologists to help decipher German Enigma-machine-encrypted signals during World War II...

...The initial design of the bombe was produced in 1939 at the UK Government Code and Cypher School (GC&CS) at Bletchley Park by Alan Turing, with an important refinement devised in 1940 by Gordon Welchman. The engineering design and construction was the work of Harold Keen of the British Tabulating Machine Company. It was a substantial development from a device that had been designed in 1938 by Polish Cipher Bureau cryptologist Marian Rejewski, and known as the "cryptologic bomb" (Polish: "bomba kryptologiczna")."
<http://en.wikipedia.org/wiki/Bombe>

It seems that Turing was involved in modifications of the Bomb formerly know as the Bomba. [http://en.wikipedia.org/wiki/Bomba_\(cryptography\)](http://en.wikipedia.org/wiki/Bomba_(cryptography))

bletchleypark.org.uk:

Before World War II, Polish crypto-analysts had already designed an electro-mechanical machine to test Enigma rotor settings called a Bomba. However, in December 1938 the German military changed their system slightly thus thwarting the Poles ability to decrypt Enigma messages.

<http://www.bletchleypark.org.uk/content/machines.rhtm>

The resulting messaging system was the Lorenz cipher machine.

C. Lorenz AG

en.wiki:

"...was a German electrical and electronics firm...

In 1918, a German inventor developed a cipher machine using multiple rotors with pins representing alphabet letters. Placed on the commercial market as the Enigma machine, it was adopted by the German Navy and Army in the 1920s The Enigma, however had deficiencies, and the German Army High Command asked Lorenz to develop a new cipher machine that would allow communication by radio in extreme secrecy.

Called the Schlüsselzusatz (cipher attachment), the Lorenz cipher was an in-line addition to their standard teleprinter. The Lorenz SZ40 was introduced on an experimental basis in 1940, and the enhanced SZ42A machine was used from February 1943 and the SZ42B from June 1944 onwards for high-level communications between the Supreme Command of the Armed Forces in Berlin and Army Commands throughout occupied Europe. Unlike Enigma, no physical Lorenz machine reached Allies' hands until the very end of the war in Europe."

http://en.wikipedia.org/wiki/C._Lorenz_AG

Lorenz cipher machine (codenamed Tunny at Bletchley)

It was the Lorenz Cipher machine that was decoded at Bletchley.

en.wiki:

"The Lorenz SZ40, SZ42A and SZ42B (SZ for Schlüsselzusatz, meaning "cipher attachment") were German rotor stream cipher machines used by the German Army during World War II. They were developed by C. Lorenz AG in Berlin. They implemented a Vernam stream cipher. British cryptographers, who referred to encrypted German teleprinter traffic as Fish, dubbed the machine and its traffic Tunny."
http://en.wikipedia.org/wiki/Lorenz_cipher

FROM DOWNHILLS PARK TO BLETCHLEY PARK

http://tottenham-summerhillroad.com/arnold_lynch_bletchley_park_.htm

Bill Tutte

bletchleypark.org.uk:

"John Tiltman then gave this long stretch of obscuring characters (from the Lorenz Cipher machine transmissions) to a young chemistry graduate, Bill Tutte, who had recently come to Bletchley Park from Cambridge.

Bill Tutte started to write out the bit patterns from each of the five channels in the teleprinter form of the string of obscuring characters at various repetition periods. Remember this was BC, "Before Computers", so he had to write out vast sequences by hand."

<http://www.bletchleypark.org.uk/content/machines.rhtm>

William Tutte, Another Unsung Hero

It was chemist, William Thomas Tutte who cracked the code:

"Originally rejected in interview by Alan Turing for a message-codebreaking team, he was recruited in May 1941 by John Tiltman for the research section, which actually turned out to be the best choice. Tutte's work there allowed him, from basic mathematical analysis, to deduce the structure of the German Lorenz SZ 40/42 encryption machine (codenamed Tunny), that was used for high-level German Army communications. On 30 August 1941, the German high command sent a single message twice (a "depth"), allowing Tiltman to break the message code by deducing the obscuring key. Tiltman then handed it and some other Tunny keys to Tutte, who after writing out by hand the original teleprinter 5-character Baudot code, made an initial breakthrough by recognising a 41-character repeat. Over the following two months, Tutte and other members of the Research section worked out the complete logical structure of the cipher machine. This achievement was later described as "one of the greatest intellectual feats of World War II".[3] Using his breakthrough, bulk Cryptanalysis of the Lorenz cipher

became possible."

http://en.wikipedia.org/wiki/W._T._Tutte#World_War_II

<http://www.codesandciphers.org.uk/lorenz/fish.htm>

<http://www.colossus-computer.com/authors.htm>

Tommy Flowers went unrecognised until the 1970's due to the Official Secrets Act and today very few people have heard of him. But then, he was not an academic, not a scientist and this all but guarantees his anonymity alongside a son of the scientific method.

By contrast, Alan Turing, although virtually an unknown in his day, has been elevated to the dizzy heights of scientific superstardom. His computer science and AI achievements do not stand-up to critical scrutiny, but such is the invisible nature of The Emperors New Clothes.

en.wiki:

"Sir Timothy John "Tim" Berners-Lee, OM, KBE, FRS, FREng, FRSA (born 8 June 1955, also known as "TimBL"), is a British engineer and computer scientist and MIT professor credited with inventing the World Wide Web, making the first proposal for it in March 1989. On 25 December 1990, with the help of Robert Cailliau and a young student at CERN, he implemented the first successful communication between a Hypertext Transfer Protocol (HTTP) client and server via the Internet....

In 1989, CERN was the largest Internet node in Europe, and Berners-Lee saw an opportunity to join hypertext with the Internet: "I just had to take the hypertext idea and connect it to the Transmission Control Protocol and domain name system ideas and ta-da! the World Wide Web." (He kinda' debunks his own inventiveness) 97

The Internet was already in place, up-and-running before TimBl. Both the DNS above and the Transmission Control Protocol above, are part of Tim Berners-Lee's 'invention' of the WWW. What he actually did was load some application software...

The need for heroes

Einstein, Turing and Berners-Lee are the scientific equivalent Alexander, Hercules and Hector. But I have to ask myself, why do these people of the renaissance, the materialist and the Humanists, who lead us away from primitive superstition, need heroes? Why do those who tells us that all life is a random accident, need a superman just as they did in ancient Greece. Can it be to do with control - that

they feel so out of control, that life is so chaotic that there is a need for someone in control within science? Someone with the answers to save the world from the encircling doom of out-of-control.

DNS-Domain Name System

en.wiki:

"At the request of Jon Postel, Paul Mockapetris invented the (DNS) Domain Name System in 1983 and wrote the first implementation." 98

en.wiki:

"Dr. Paul V. Mockapetris (Engineer) is the inventor of the Domain Name System...In 1983, he proposed a Domain Name System (DNS) architecture in RFCs 882 and 883 while at the Information Sciences Institute (ISI) of the University of Southern California." 99

Transmission Control Protocol had been around since may of 1974. 100

"In May 1974 the Institute of Electrical and Electronic Engineers (IEEE) published a paper entitled "A Protocol for Packet Network Intercommunication." The paper's authors, Vint Cerf and Bob Kahn, described an internet working protocol for sharing resources using packet-switching among the nodes... The model became known informally as TCP/IP, although formally it was henceforth called the Internet Protocol Suite." 101

Hypertext

en.wiki:

"Theodor (Ted) Holm Nelson (born June 17, 1937) is an American sociologist, philosopher, and pioneer of information technology. He coined the terms "hypertext" and "hypermedia" in 1963 and published it in 1965." 102

en.wiki:

"All major histories of what we now call hypertext start in 1945, when Vannevar Bush wrote an article in The Atlantic Monthly called "As We May Think", about a futuristic device he called a Memex. Starting in 1963, Ted Nelson developed a model for creating and using linked content he called "hypertext" and "hypermedia" (first published reference 1965[2]). He later worked with Andries van Dam to develop the Hypertext Editing System in 1967 at Brown University. Douglas Engelbart independently began working on his NLS system in 1962 at Stanford Research Institute, although delays in obtaining funding, personnel, and equipment meant that its key features were not completed until 1968. In December of that year, Engelbart demonstrated a hypertext interface to the public

for the first time, in what has come to be known as "The Mother of All Demos"."
103

Vannevar Bush

en.wiki:

"Vannevar Bush (1890 – 1974) was an American engineer, inventor and science administrator (not a scientist) known for his work on analog computers, for his role as an initiator and administrator of the Manhattan Project, for founding Raytheon, and for the memex, an adjustable microfilm viewer with a structure analogous to that of the World Wide Web. In 1945, Bush published *As We May Think* in which he predicted that "wholly new forms of encyclopedias will appear, ready made with a mesh of associative trails running through them, ready to be dropped into the memex and there amplified".

The memex influenced generations of computer scientists, who drew inspiration from its vision of the future."

http://en.wikipedia.org/wiki/Vannevar_Bush

"Berners-Lee wrote a memo proposing an Internet-based hypertext system. Berners-Lee specified HTML and wrote the browser and server software in the last part of 1990. Berners-Lee and CERN data systems engineer Robert Cailliau collaborated on a joint request for funding, but the project was not formally adopted by CERN. In his personal notes from 1990 he lists "some of the many areas in which hypertext is used" and puts an encyclopedia first." 104

useit.com:

"The main reason Vannevar Bush developed his proposal for the Memex was that he was worried about the explosion of scientific information which made it impossible even for specialists to follow developments in a discipline. Of course, this situation is much worse now, but even in 1945 Bush discussed the need to allow people to find information more easily than was possible on paper. After having described his various ideas for microfilm and projection equipment..." 105

Internet protocol suite TCP/IP

en.wiki:

"The Internet protocol suite is the set of communications protocols used for the Internet and similar networks, and generally the most popular protocol stack for wide area networks. It is commonly known as TCP/IP, because of its most important protocols: Transmission Control Protocol (TCP) and Internet Protocol (IP), which were the first networking protocols defined in this standard. It is occasionally known as the DoD model due to the foundational influence of the ARPANET in the 1970s (operated by DARPA, an agency of the United States Department of Defense)." 106

URL

en.wiki:

“The Uniform Resource Locator (URL) was created in 1994 by Tim Berners-Lee and the URI working group of the Internet Engineering Task Force.” 107

en.wiki:

HTTP, HTML

"In 1980, physicist Tim Berners-Lee, who was a contractor at CERN, proposed and prototyped ENQUIRE, a system for CERN researchers to use and share documents. In 1989, Berners-Lee wrote a memo proposing an Internet-based hypertext system. Berners-Lee specified HTML and wrote the browser and server software in the last part of 1990. In that year, Berners-Lee and CERN data systems engineer Robert Cailliau collaborated on a joint request for funding, but the project was not formally adopted by CERN." 108

"Dave Raggett (who worked with Lee) is a computer specialist who has played a major role in implementing the World Wide Web, starting in 1992..." 109

Vint Cerf

en.wiki:

"Vinton Gray "Vint" Cerf is an American computer scientist, who is recognized as one of "the fathers of the Internet", sharing this title with American computer scientist Bob Kahn. His contributions have been acknowledged and lauded, repeatedly, with honorary degrees and awards that include the National Medal of Technology, the Turing Award, the Presidential Medal of Freedom, and membership in the National Academy of Engineering." 110

1974 Arthur C. Clarke

en.wiki:

“Responding to a question about how the interviewer's son's life would be different, Clark responded: "[H]e will have, in his own house, not a computer as big as this, [points to nearby computer], but at least, a console through which he can talk, through his local computer and get all the information he needs, for his everyday life, like his bank statements, his theater reservations, all the information you need in the course of living in our complex modern society, this will be in a compact form in his own house ... and he will take it as much for granted as we take the telephone.” 111

Email

Wiki:

The origin of Email is even more obscure, dating back to the 1960's:

"In the early 1970s, Ray Tomlinson updated an existing utility called SNDMSG so that it could copy messages (as files) over the network." 112

en.wiki:

"Raymond Samuel Tomlinson is a programmer who implemented an email system in 1971 on the ARPANET....To achieve this, he used the @ sign to separate the user from their machine, which has been used in email addresses ever since." 113

Wiki:

"As the Unix source code was available at Berkeley, the local hackers quickly made many extensions to the AT&T code. One such extension was delivermail, which in 1981 turned into sendmail. As an MTA, it was designed to deliver e-mail over the still relatively small (as compared to today's Internet) ARPANET, which consisted of many smaller networks with vastly differing formats for e-mail headers." 114

Fiber Optics

Like most original ideas on these pages fibre optics is an old technology invented by enthusiasts rather than the wise and prudent qualified academic scientists.

timbercon.com:

"As far back as Roman times, glass has been drawn into fibers." 115

1840s

"Fibre optics, though used extensively in the modern world, is a fairly simple, and relatively old, technology. Guiding of light by refraction, the principle that makes fibre optics possible, was first demonstrated by Daniel Colladon and Jacques Babinet in Paris in the early 1840s. John Tyndall included a demonstration of it in his public lectures in London, 12 years later." 116

Daniel Colladon

en.wiki:

"Colladon studied law but then worked in the laboratories of Ampere and Fourier." 117

olson-technology.com:

He wrote: "I managed to illuminate the interior of a stream (of water) in a dark space. I have discovered that this strange arrangement offers in results one of the most beautiful, and most curious experiments that one can perform in a course on Optics." Colladon demonstrated light guiding in water jets through a number of

public performances to the urban intelligentsia of Paris. Auguste de la Rive, another Geneva Physicist, duplicated Colladon's experiment using electric arc light. Colladon designed a spectacular device using arc light for Conservatory of Arts and Science of Paris in 1841, Oct.." 118

Jacques Babinet

en.wiki:

"Babinet started his studies at the Lyce Napolon, but was persuaded to abandon a legal education for the pursuit of science.

olson-technology.com:

Arago recalled that Jacques Babinet, a French specialist in Optics had made similar demonstrations in Paris. He focused candle light on to the bottom of a glass bottle as he poured a thin stream of water from the top. TIR guided the light along the jet. Arago asked Babinet to write down his work, but Babinet did not think that the work is very important. Yet he made a comment that "the idea also works very well with a glass shaft curved in what ever manner and I had indicated that (it could be used) to illuminate the inside of the mouth (Comptes Rendes 15, Oct. 24, 1842). After sending his letter to Arago, Babinet never returned to guiding of light before he died in 1872." 119

John Tyndall

olson-technology.com:

"In 1870, John Tyndall, (teacher and surveyor), using a jet of water that flowed from one container to another and a beam of light, demonstrated that light used internal reflection to follow a specific path." 120

It is but a small step from liquid to solid, but:

William Wheeling

olson-technology.com:

"William Wheeling, in 1880, patented a method of light transfer called piping light. Wheeling believed that by using mirrored pipes branching off from a single source of illumination, i.e. a bright electric arc, he could send the light to many different rooms... " 121

Alexander Graham Bell

olson-technology.com and en.wiki:

"That same year,(1880) Alexander Graham Bell developed an optical voice transmission system he called the photophone. The photophone used free-space light to carry the human voice 200 meters." 122 123

"Bell received numerous honorary degrees from colleges and universities, to the

point that the requests almost became burdensome...But Bell's only academic qualification was professor of Vocal Physiology and Elocution at the Boston University School of Oratory. 124

Academia wanted Bell within its ranks for the prestige and so he became an adopted son of science.

inventors.about.com:

"In 1888, the medical team of Roth and Reuss of Vienna used bent glass rods to illuminate body cavities.

In 1895, French engineer Henry Saint-Rene designed a system of bent glass rods for guiding light images in an attempt at early television.

In 1898, American David Smith applied for a patent on a bent glass rod device to be used as a surgical lamp.

In the 1920's, Englishman John Logie Baird and American Clarence W. Hansell patented the idea of using arrays of transparent rods to transmit images for television and facsimiles respectively."

In 1930,(that magical decade again) German medical student, Heinrich Lamm was the first person to assemble a bundle of optical fibers to carry an image. Lamm's goal was to look inside inaccessible parts of the body. During his experiments, he reported transmitting the image of a light bulb. The image was of poor quality, however. His effort to file a patent was denied because of Hansell's British patent." 125

olson-technology.com and en.wiki:

"Fiber optic technology experienced a phenomenal rate of progress in the second half of the twentieth century. Early success came during the 1950s with the development of the fiberscope. This image-transmitting device, which used the first practical all-glass fiber, was concurrently devised by Brian OBrien at the American Optical Company and Narinder Kapany (who first coined the term fiber optics in 1956)" 126

timbercon.com:

"In 1951, Holger Moeller applied for a Danish patent on fiber-optic imaging in which he proposed cladding glass or plastic fibers with a transparent low-index material, but was denied because of Baird and Hansell's patents. Three years later, Abraham Van Heel and Harold H. Hopkins presented imaging bundles in the British journal Nature at separate times. Van Heel later produced a cladded fiber

system that greatly reduced signal interference and crosstalk between fibers." 127

It's at this point, as far as these researches are concerned, that academia seems to have gotten its foot in the fibre optical front-door. A theory that claims the technology as their own and once a theory is in place the academics have control of development.

Believe it or not?

en.wiki:

"The Honorable Sir Charles Kuen Kao, GBM,KBE, FRS, FREng, (born 4 November 1933) is a pioneer in the development and use of fiber optics in telecommunications. Kao, known as the "Godfather of Broadband", "Father of Fiber Optics" or "Father of Fiber Optic Communications", was awarded half of the 2009 Nobel Prize in Physics for "ground-breaking achievements concerning the transmission of light in fibres for optical communication" 128

en.wiki:

"After the war, Alec Reeves(who invented digital transmissions and recording, see above) managed a team led by Charles K. Kao and George Hockham at Standard Telecommunication Laboratories - initially at Enfield, North London, and later at Harlow Essex - which invented optical fibres as a means of communicating large quantities of information. Kao has recently (2010) been awarded the Nobel Prize for his part in this achievement. Reeves worked at STL until retirement. He was awarded the Stuart Ballantine Medal in 1965 and also the CBE."
http://en.wikipedia.org/wiki/Alec_Reeves

Charles Kuen Kao, seems to have improved the glass in optical fibres paving the way for long distance communications and faster data transfer - no blinding revelations or inspiration though, just a brand of glass better suited to the application.

Again as in other technologies in these pages, it's the marketing potential above the actual idea that is rewarded, a clear disincentive to inventors and those who have original ideas.

hem.bredband.net:

The IQ of those considered to be exceptional achievers is estimated. Nobel Prize Winners are given genius status with IQ's of 155 – 164. The writer would like someone to explain how improving glass quality, the obvious first step in the development of light transmitting glass fibres, requires a high IQ or a genius status? I think we should be told. 129

A close scrutiny of other Nobel Prize Winners in this chapter and others leads to the same conclusion. I can only hope that the inferiority complex that these manufactured geniuses are meant to evoke is dispelled by the realisation that they were only in the right place at the right time.

Misconceptions about Computers

1. The brain is a computer. This is repeated so many times that most seem to believe it!

Psychology Today:

Unplugging the Computer Metaphor.

"Metaphors underlying our approach to understanding the mind/brain:

Recent social and affective neuroscience research shows that a computer is an inadequate and misleading metaphor for the brain, and this research is going to be the focus of my blog. Humans, along with other organisms with brains, differ from computers because they are driven by emotions and motivations." 130

The Brain is not a Computer.

dangerousintersection.org:

Erich Vieth

"Scott Kelso points out that the brain is not a computer that manipulates symbols. The nervous system may act as if it were performing Boolean functions . . . People can be calculating, but the brain does not calculate. See Dynamic Patterns (1995). Even those who believe that the brain is (an extremely sophisticated) machine, cognitive scientists such as Patricia Churchland, warn us to handle the computer metaphor with extreme caution. We are pattern matchers and pattern completers. Neurophilosophy: Toward a Unified Science of the Mind/Brain, Patricia Smith Churchland (1986)." 131

10 Important Differences Between Brains and Computers

scienceblogs.com:

Difference # 1: Brains are analogue; computers are digital

"It's easy to think that neurons are essentially binary, given that they fire an action potential if they reach a certain threshold, and otherwise do not fire. This superficial similarity to digital "1's and 0's" belies a wide variety of continuous and non-linear processes that directly influence neuronal processing.

For example, one of the primary mechanisms of information transmission appears to be the rate at which neurons fire - an essentially continuous variable. Similarly, networks of neurons can fire in relative synchrony or in relative disarray; this coherence affects the strength of the signals received by downstream neurons. Finally, inside each and every neuron is a leaky integrator circuit, composed of a variety of ion channels and continuously fluctuating membrane potentials." 132

As we can see above, "the brain is a computer" metaphor, is a bit of science fiction that the rationalists would LIKE to be true, but sadly it is not. The rationalists have conveniently forgotten what analogue means, since the advent of digital - numbers that can be manipulated, and so here's a refresher:

Analogue is the difference between a digital clock and a clock with fingers. The clock-fingers trace the rotation of the Earth through twelve or twenty four hours, each division representing the same angle covered by the earth's rotation. It is a stark representation of reality.

To enable us to describe the brain as a computer, it would be necessary to possess an analogue computer, which does not exist. An analogue computer would have to process symbols, colours and all manner of exotic entities, a million years ahead of anything we have today. All of the workings of today's computers would need to be abandoned and a completely new concept be devised...from scratch.

It also follows from the above that artificial intelligence is a myth, a metaphor that has developed a life of its own in the imagination of science fiction writers and fans.

Why Minds Are Not Like Computers

Ari N. Schulman

thenewatlantis.com:

"Those who employ this analogy tend to do so with casual presumption. They rarely justify it by reference to the actual workings of computers, and they misuse and abuse terms that have clear and established definitions in computer science — established not merely because they are well understood, but because they in fact are products of human engineering. An examination of what this usage means and whether it is correct reveals a great deal about the history and present state of artificial intelligence research. And it highlights the aspirations of some of the luminaries of AI — researchers, writers, and advocates for whom the metaphor of mind-as-machine is dogma rather than discipline." 133

A.I. Artificial Intelligence

A modern mythology has grown around the idea of computer artificial intelligence, as if a thinking machine were already with us. The fact is that it does not exist outside of optimistic science, science fiction and science/technology journalism. There have been no significant strides in programming or new ideas about how AI might be achieved. It would first be necessary to define biological intelligence and this has not been done. The AI illusion is the result of changing the meaning of the words intelligence and smart when applied to computers, nothing more.

A computer is basically an adding machine and our most speedy, modern, ones are no different in principle than those of the seventies...they do not think for themselves, relying on a program; the output dependant on the quality of the input. 'A program cannot be smarter than its programmer' and there is no evidence to suggest that this rule is wrong. AI is a computer term not to be confused with human intelligence.

Programming

en.wiki:

"Fortran (previously FORTRAN) is a general-purpose, procedural, imperative programming language that is especially suited to numeric computation and scientific computing. Originally developed by IBM at their campus in south San Jose, California in the 1950s for scientific and engineering applications, Fortran came to dominate this area of programming early on and has been in continual use for over half a century in computationally intensive areas such as numerical weather prediction, finite element analysis, computational fluid dynamics, computational physics and computational chemistry. It is one of the most popular languages in the area of high-performance computing and is the language used for programs that benchmark and rank the world's fastest supercomputers." 134

I personally, see no justification in any of the above that would lead anyone to attribute the development of the computer to academic science, the scientific method, or an education in physics. Most of the names that appear above were not qualified scientists or physicists in the accepted understanding of the word. If the requirement for an inventive mind depends on a scientific education then most of the names above would be those of scientists and they clearly are not.

It's not possible to educate someone to be inventive or innovative, this depends on individual imagination, something discouraged by science unless accompanied by scientific qualification. This in turn seems to discourage independent, critical thinking outside of the scientific box.

Chapter 10

Impossible Machinations Energy

"If I want to stop a research program I can always do it by getting a few experts to sit in on the subject, because they know right away that it was a fool thing to try in the first place." - Charles Kettering, GM 1

Unnamed Law: If it happens, it must be possible.

Cold Fusion Low Energy Nuclear Reactions (LENR)

Pons and Fleischmann en.wiki:

"The most famous cold fusion claims were made by Stanley Pons and Martin Fleischmann in 1989. After a brief period of interest by the wider scientific community, their reports were called into question by nuclear physicists. Pons and Fleischmann never retracted their claims, but moved their research program to France after the controversy erupted." 2

But as we have seen, nothing is new: Before Pons and Fleischmann the 1800's and Thomas Graham

woodrow.org:

"Graham was (also) the first to observe that palladium metal is able to absorb

large amounts of hydrogen gas, especially at lower temperatures. In addition he observed that when the palladium with hydrogen dissolved in it is exposed to the atmosphere, then the metal is likely to become hot and suddenly discharge the gas. This mechanism was offered as a possible explanation for the energy released during the "cold fusion" controversy several years ago." 3

cold-fusion.ca:

"The first observation of this theory was in the 19th century by Thomas Graham. Then around 1920's two Austrian scientists, Paneth and Peter's experimental observations prove this theory. However they later reported that the transformation of hydrogen to helium was due to exposure to room temperature. Later in 1927, Swedish scientist Tandberg's claim of patent application was denied as he was unable to explain the physical process involving fusion of hydrogen to helium." 4

Nothing is new and this is the same process as the cold fusion we hear about today. It includes the same lame excuse about there being no theory, that spins into the same circular argument and therefore: If we take the advice of experts, there will never be anything new...

ncas.org:

Kurt Peters again

en.wiki:

"In 1949 he returned to academia, and was appointed as professor at the Department of ordinary fuel at TH Vienna." maybe, as opposed to extraordinary fuel, or taboo fuel? 5

ncas.org:

Cold fusion is rediscovered: "In 1927, Swedish scientist J. Tandberg claimed that he had fused hydrogen into helium in an electrolytic cell with palladium electrodes. On the basis of his work he applied for a Swedish patent for "a method to produce helium and useful reaction energy". After deuterium was discovered in 1932, Tandberg continued his experiments with D2O. Due to Paneth and Peters' retraction, Tandberg's patent application was denied..." 6

It looks as though cold fusion was well researched by chemists in the 1920's, but rejected due to theoretical objections, a recurring theme in these pages, where according to scientific thinking, a theory is more important than practical experimentation. A clean energy source is lost, and the theorists continue to theorise. It will be another sixty years before Pons and Fleischmann give it an airing, to the relief of the theorists and a net loss to everyone else.

en.wiki and oilprice.com:

Low Energy Nuclear Reactions (LENR) or Cold Fusion "has occupied a scientific backwater now for 23 years. Demonstrations have been repeated again and again, a great deal of know-how has been acquired and shared over the Internet. Scientists who stuck with it have been vindicated to those who are in the interested in the field.

In 1989, Martin Fleischmann, a scientist at the top of his field, with Stanley Pons told the world they had ran a LENR in a test tube. Within a year scientists from prestigious labs around the world spilled announcements they had tried to duplicate what Fleischmann had reported with no success. The results were unreproducible. Cold Fusion was to become a joke about junk science.

About a year and a half back an Italian entrepreneur named Andrea Rossi demonstrated a cold fusion boiler, and announced the taking (of) orders for a 2012 delivery. The following months have brought a lot of others from the personal labs and quiet private researchers out into view." 7

Cold Fusion: Not dead, just sabotaged by science.

phys.org:

"Despite the intense skepticism, a small community of scientists is still investigating near-room-temperature fusion reactions. The latest news occurred last week, when Italian scientists Andrea Rossi and Sergio Focardi of the University of Bologna announced that they developed a cold fusion device capable of producing 12,400 W of heat power with an input of just 400 W. Last Friday, the scientists held a private invitation press conference in Bologna, attended by about 50 people, where they demonstrated what they claim is a nickel-hydrogen fusion reactor. Further, the scientists say that the reactor is well beyond the research phase; they plan to start shipping commercial devices within the next three months and start mass production by the end of 2011.

Rossi and Focardis paper on the nuclear reactor has been rejected by peer-reviewed journals, but the scientists aren't discouraged. They published their paper in the Journal of Nuclear Physics, an online journal founded and run by themselves, which is obviously cause for a great deal of skepticism. They say their paper was rejected because they lack a theory for how the reaction works. According to a press release in Google translate, the scientists say they cannot explain how the cold fusion is triggered, but the presence of copper and the release of energy are witnesses..." 8

Distinguished Professor John Bockris

"The work published under the title "Cold Fusion" or in its modern title,

“Condensed Matter Nuclear Reactions” gave rise to a series of attacks upon Bockris and his work which began in 1992 and continued through 1995.” 9
Apparently his cold fusion work was investigated three times for fraud, although no fraud was ever found. I think "they", wanted to shut him up.

MIT

wildalchemist.blogspot.co.uk:

"The measure of MIT's success in killing off cold fusion (MIT later retracted its claim) is that still today, the US Department of Energy refuses to fund any research into it while the US Patent Office relies on the MIT report to refuse any patents based on or relating to cold fusion processes even though hundreds have been submitted." - Alternative Science: Challenging the Myths of the Scientific Establishment by Richard Milton 10

atlantisrising.com:

"While cold fusionists have suffered charges of bad science', the veracity of MIT's results have also been called into question by Dr. Eugene Mallove, author of a Pulitzer-Prize nominated book about cold fusion and former chief science-writer for the MIT News Office. Mallove resigned his post in protest, claiming top level people at MIT's physics department manipulated cold fusion data. Currently he edits Cold Fusion Technology magazine in Concord, N.H. Mallove claims the fix was in from the start, that negative conclusions were drawn before research data was analyzed, and that those involved have a vested interest in maligning cold fusion." 11

e-catsite.com:

"As many know, MIT was at the forefront in the effort to discredit cold fusion in 1989, and the report issued by that institution detailing a failed replication attempt carried an enormous amount of weight in forming the public perception that cold fusion was a hoax and “junk science...However, in a report published by the late Dr. Eugene Mallove in 1999, he extensively detailed the efforts of some high-ranking individuals at MIT to falsify positive replication results in order to ensure that MIT continued to receive tens of millions of dollars in US government funding for its plasma fusion (“hot fusion”) program." 12

Cold fusion is an over-unity device – one good reason for science to kill it off. But it only becomes 'over unity' or 'free energy' within the tight confines of academic physics where the possibility of an alternate energy supply is rejected due to the lack of a theory. Note the logical inconsistency?

Cold fusion is much like alchemy, something science would like to forget, a taboo subject that reminds them of their roots in 'superstition and ignorance'. The

ignorance is based on the scientific certainty that alchemists have never transmuted metals.

But then, a shock, horror, headline declares:

“Alchemy Nightmare: Skeptic Finds Heavy Element. Transmutation Cold Fusion Experiment! Hidden 3-years.”

Apparently, the cold fusion process is not restricted to heat production alone, researchers have consistently found an accompanying abundance of transmuted elements - alchemy becomes reality. Science has been trying to distance itself from the alchemy anathema of Isaac Newton and Robert Boyle ever since the early days of the Royal Society. One can see at least one more reason why the idea of cold fusion has to go. A much needed energy source is debunked as a face-saving exercise for humanists, materialists, hot-fusionists and sceptics while greenhouse gas increases. 13

Transmutation, The Alchemist Dream Come True

i-sis.org:

"Not just base metals into gold; but the profuse creation of elements that is rewriting the book of genesis. Dr. Mae-Wan Ho"

"Cold fusion scientists have managed, not so much to transmute base metals into gold (although there have been unconfirmed reports to that effect), but more spectacularly, to make a whole range of elements on the lab bench, with equipment not much more sophisticated than what the ancient alchemists might have used. In the process, nuclear energy is released - safely and without toxic or radioactive wastes - that could be harnessed for heating or to generate electricity [1] (see From Cold Fusion to Condensed Matter Nuclear Science, SiS 36)." 14 15

Low Energy Nuclear Reactions, the Realism and the Outlook

by Dennis Bushnell, Chief Scientist, NASA Langley Research Center

futureinnovation.larc.nasa.gov:

"Therefore, the LENR situation and outlook is the following:

- Something real is happening.
- The weak interaction theories suggest what the physics might be.
- There are efforts ongoing to explore the validity of the theories.
- There are continuing Edisonian efforts to produce "devices" mainly for heat or in some cases transmutations.
- There are efforts to "certify" such devices.
- NASA LaRC has begun LENR design studies guided by the Weak Interaction Theory" 16

There can be little doubt of reality of Low Energy Nuclear Reactions (LNR), Cold

Fusion Reactions, and that there is a strong case to be made for, at the very least, a clean and by all accounts plentiful energy source. The bottom line is that it is embarrassing to most scientists and extremely unpopular with hot fusion (plasma) scientists. The problem that these detractors must overcome is how to justify continuing atmospheric pollution and the massive expense of a reaction that certainly does not work, while ignoring one that does. Science is reluctant to drop hot fusion, even though it has failed miserably for the best part of a century and cost the taxpayer huge amounts of cash:

Hot Nuclear Fusion

science.howstuffworks.com:

"In nuclear fusion, you get energy when two atoms join together to form one. In a fusion reactor, hydrogen atoms come together to form helium atoms, neutrons and vast amounts of energy. It's the same type of reaction that powers hydrogen bombs and the sun." 17

Always presented as if it will work next week, the problem with the above is that the fusion reactors don't work - period. Physicists have been trying to make them work for almost a century with little success, but unlike cold fusion, we don't see any attacks from the sceptics. For some unexplained reason there is not a murmur of dissent from those who see it as their prime function in life to debunk the things for which there is little evidence. When science has no evidence they look the other way.

The original idea was first suggested by Arthur Eddington, (champion extraordinary to Albert Einstein), who, in the 1920's, declared that nuclear fusion is what powers the stars, including our own sun. There is no direct evidence that this is true, but theory and circular reasoning says it is so, and so efforts to tap the energy of the sun began almost immediately. Ever increasing government funds have been thrown at various reactor designs over the decades with ever-diminishing returns on ever larger investments and always promises of jam tomorrow from the physicists.

It was the hot fusion mob who were the most vociferous in objecting to cold fusion on the grounds that it did not conform to the rules of the theory they were using. (This is the same theory that has failed for almost a century). While by contrast the theory-free cold fusion reactors appear to work despite the obvious lack of a comparable budget and the extreme lack of enthusiasm from the scientific community. Is there a problem here?

Nuclear hot fusion reactions are purely theoretical constructs and we have already looked at examples where theory fails. In the case of hot fusion, the theory stands firm as far as physicists are concerned, as it would, even though we have seen

evidence in the 'Physics chapter' that there is something radically wrong with atomic theory.

There have been suggestions that the Sun produces its heat by an electrical process.

But, the scientists will continue to spend shed-loads of tax-payers cash, regardless of problems which they will ignore in order to stay in a lucrative job.

What we have here is academia's version of alternative energy, free energy! The very same as that which the academics shout-down when others claim successes...like cold fusion.

en.wiki:

“The share of renewables in electricity generation is around 18%, with 15% of global electricity coming from hydroelectricity and 3% from new renewables. (2008).

Wind power is growing at the rate of 30% annually, with a worldwide installed capacity of 158 gigawatt's (GW) in 2009.” 18

“World consumption is around 17,109,665,000(MW h/yr)(2005) with most coming from non renewables.” (coal and oil) 19

If coal and oil were withdrawn, our civilisation would collapse because the impact of wind-power and other renewables is negligible. And so, if we don't get a new energy source soon, we are in big trouble. The incurable optimism of scientists is not likely to solve the problem.

"There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success than to take the lead in the introduction of a new order of things, because the innovator has for enemies all those who have done well under the old condition, and lukewarm defenders in those who may do well under the new.” - Machiavelli, 1513

Science Destroys New Ideas

The claim that a theory is required to validate a technology is a little hard to take when one considers that historically most new concepts started out without one, theory usually added when the idea was up-and-running.

Theory, always the brainchild and exclusive domain of the academic, when applied, becomes the last word on the subject and makes the original idea the property of academic science. The down-side is that the theory then restricts the original idea to the parameters of the theory, thereby preventing further research outside of the theory, just as with the 1927, Paneth and Peters fusion reaction above.

To attempt further non-theory research is to invite the accusation of pseudoscience and thereby the circle is complete. A win-win scenario for academia while just about everyone else loses. Supporting this system is the peer-reviewer who will reject anything that does not have the backing of academia - and the circle is then squared and the original idea confined to a square box.

Anyone with a new energy idea they wish to market is confronted with obstacles, in that an investor will approach "the experts" to ask if the technology is viable. The physicist, 'expert', will reject the technology, usually without testing, if it is new to science and lacks a theory.

"It is really quite amazing by what margins competent but conservative scientists and engineers can miss the mark, when they start with the preconceived idea that what they are investigating is impossible. When this happens, the most well-informed men become blinded by their prejudices and are unable to see what lies directly ahead of them."

- Arthur C. Clarke, 1963

Just a few of the ideas that had no theory and were not peer-reviewed :

The first powered aircraft.

The steam engine.

The first transistor.

Electricity.

The first radio transmissions.

The science of Radio Astronomy.

The first computer.

The wheel...!

There are countless other examples, because new concepts are not born out of consensus academic theories, they are more often than not, the product of an individual's imagination.

If there is one single thing that would change the world for the better, for ever, it is the introduction of a cheap and clean energy system. Preferably, this system would be self-contained and able to be fitted into each individual home. It would free everyone from the energy dictatorship that exists even in what are supposed to be democracies. The single most important priority of science should be to find such a system.

What we have is the opposite: an attempt to use the theory/peer-review system to prevent the development of possible sources of clean cheap energy for the sake of vested interests like the endless-and-failed, expensive 'hot fusion' project, fiasco.

We are all hypnotised by the constant barrage from education, the media,

government and science itself, that the benevolence of science will build us utopia, and here we have clear-cut evidence that this simply is not true. If science is to be seen as a shadow of what it claims to be, it should be constantly and vigilantly looking to supply the world with inexpensive clean energy - the thing we all need most. What we have in fact, is bickering, back-biting and lame, untrue, excuses about theory and peer-review, that combine to equate to a concerted effort to kill-off any notion of a new energy source.

Example: Refusal to look outside of the Box

Negative Resistors:

en.wiki:

"In July 1998, Deborah Chung and Shoukai Wang of the University of Buffalo presented the results of an experiment that showed an apparent absolute negative resistance in bare carbon fibers held together by pressure."

In Chung's own words:

"True negative resistance in the former sense is not possible due to energy (conservation) consideration. However, apparent negative resistance in the former sense is reported here. ... Although the negative resistance reported here is apparent rather than true, its mechanism resembles that of true negative resistance (which actually does not occur due to energetics) in that the electrons flow in the unexpected direction relative to the applied current/voltage." (The sheer frustration is apparent)

Wang, Chung, Apparent negative electrical resistance in carbon fibre composites.
20

Negative resistance, (more comes out than goes in) in regard to the above tongue-in-cheek account, requires an additional external energy input, but this is said to be contrary to thermodynamic law (impossible) as no additional input is detected. However, if we look closely, we see that no additional input is detected by the "usual methods" of detection. This means that no unusual energy detector is available - a fudge on the part of scientific testing that assumes that all possible energy is known; this of course is absurd. It assumes that academic science knows everything there is to know about energy. Apart from the fact that the assumption is more than a little crazy, it has the effect of ending research because it becomes futile in the face of science knowing it all.

Science, in its infinite wisdom 'knows' that new energy sources are impossible and so it ignores them; this is not the only example.

Gabriel Kron and the Negative Resistor

It appears that Gabriel Kron also discovered (impossible) negative resistors, but

his work was highly censored:

Tom Bearden

cheniere.org:

"Pooh-poohing the Kron negative resistor is just sheer naïveté. Kron was one of the greatest electrical scientists of all time... Simply go check his papers in the literature. Even today, there are few electrodynamicists really able to fully comprehend his advanced work. And his direct quotations from his own published technical papers in the literature leave no doubt he had made a negative resistor...The mechanism by which he did this is what Kron was never allowed to reveal." 21

en.wiki:

"Negative resistors are theoretical and do not exist as a discrete component." 22
So says the voice of authority.

Free Energy Clarification

Free Energy & Perpetual Motion

The emotional outbursts of scientists about the laws of thermodynamics prohibiting free energy are quite wrong. Most have come to expect clear thinking from our academics and for some, any ex-cathedra pontification by one who has a PhD. is sufficient to engender an end to any more questioning.

Equating free energy with perpetual motion is supposed to lead the flock to reject the very idea of free energy by association.

From the first dawning of human technology we have always had free energy and erecting a sail on a boat must have been the first time the wind was harnessed. Wind is a free energy resource that went on to drive mills and sail-boats right up to the present day. The watermill leading to hydro-electric power has a similar, extended history of free energy. Free energy is deriving power without the use of fuel.

Perpetual motion is an impossible concept because it is required to draw energy from nothing. Many of the free energy attempts by inventors of the nineteenth and early twentieth centuries are called perpetual motion because they 'appear' to be expecting their device to run on nothing. But there is a caveat: Many of these inventors were trying to tap the luminiferous aether, a quite acceptable concept at the time, backed by the science of their day. As we have seen in earlier chapters, the aether was abandoned and debunked by science. The inventors gradually gave-up the quest, having been assured by science that what they were doing was impossible. Such is the trust bestowed by a science-inspired, education. It's only in the past few decades that a few have again decided to ignore 'impossible' for the

sake of clean, cheap energy.

Their quest is legitimate in that the aether has never been proven not to exist and there is evidence, even from science itself that it does. Aether was rejected and ridiculed by science mainly to make-way for Einstein's theories, but it has returned via the rear door, disguised as ZPE, vacuum energy etc..

One of the major and inherent problems of academic science is its obsession with the second law of thermodynamics. But there are many examples of the appearance of exotic energy, sufficient to show that alternative energy is a reality, as we will see:

Cavitation

Keely, Griggs and Clem

Cavitation is something well-known to science and usually described as a nuisance and a cause of damage, although there are a few useful applications in common use.

en.wiki:

“Cavitation is the formation and then immediate implosion of cavities in a liquid – i.e. small liquid-free zones ("bubbles") – that are the consequence of forces acting upon the liquid. It usually occurs when a liquid is subjected to rapid changes of pressure that cause the formation of cavities where the pressure is relatively low.”

23

Below are three different methods for extracting energy from controlled cavitation, an unusual energy source. The idea of using cavitation as a power source has occurred to a few inventors who seem to have used this method of power generation successfully, albeit with no support from the 'experts' who claim "no theory, can't work....”

"...if excess energy production could be demonstrated it would overturn 300 years of experience by breaching the Principle of Conservation of Energy". This is called progress.

James L. Griggs

GRIGGS WATER HEATER

A typical working example:

panacea-bocaf.org

"Quote: James Griggs' Hydrosonic Pump is already being sold to customers, regularly providing them with over-unity energy. An energy efficiency consultant from Georgia, Griggs invented the pump as a result of his curiosity about a

common phenomenon called water hammer or cavitation. Griggs noticed that heat emanated from fluids, which flow quickly through the pipes of a boiler causing water pressure to drop in part of the pipe. Bubbles formed in the low-pressure areas collapse when carried to areas of higher pressure. The resulting shock waves collide inside the pipe bringing about the water hammer effect.

Griggs' pump is made up of a cylindrical rotor that fits closely within a steel case. When the rotor spins, water is forced through the shallow space between the rotor and the case. The resulting acceleration and turbulence created in the gap somehow heats the water and creates steam. In 1988, a testing expert found that the heat energy put out by the hydro sonic pump was 10 to 30% higher than energy used to turn the rotor." 24

There has been a huge amount of controversy and debunking of Griggs' claims as one would expect, but NASA seems to have taken an interest:

NASA is very careful with its wording:

spinoff.nasa.gov:

"The secret to the HPump's success, according to the inventor, is the use of shock waves to produce the heat, rather than electric heating elements or fossil fuels. The shock wave effect is commonly referred to as a "water hammer" and is usually considered a problem that needs to be removed. Hydro Dynamics founder Jim Griggs began his research into harnessing the benefits of the "water hammer" in 1985 and founded Hydro Dynamics five years later.

The rotor inside the HPump produces shock waves, which in turn generate millions of microscopic bubbles inside the liquid. As the bubbles collapse, heat is released creating a heating "inside the liquid" effect rather than from an outside surface. Conventional technologies transfer heat into liquids using high temperature metal surfaces or flames." 25

It matters not one jot what theory says if the thing actually works. 26 27

It is claimed that the Griggs heating system provides more heat than can be accounted for by electrical energy input. It may seem in direct violation of the principle of the conservation of energy and this makes it a taboo area to the scientific community. Companies wishing to invest in such innovation will want to protect their investment and will naturally ask those whom they see as the experts. The scientists will tell them that the idea is not viable because it conflicts with the theory of conservation of energy and the companies will not invest. The problem with all of this, (the science sounds so rational), is that the other innovative examples listed below were also condemned by the scientific community for the same or similar reasons.

It's not that they don't work, science insists that 'they can't work'.

The idea of conservation of energy is basic to science and assumes, quite rightly and obviously that you cannot get something from nothing. A problem arises from energy conservation when it excludes the possibility of an alternative or exotic energy source, a theoretical abuse for which the energy conservation law was not intended. If it is first assumed that an alternative energy is possible, then there is no conflict with energy conservation.

panacea-bocaf.org:

"A new cavitation device similar to the Griggs machine is now available for testing, scientific investigation and purchase by research laboratories. This is the "Kinetic Furnace" of Kinetic Heating Systems, Inc. of Cumming, Georgia. Jointly invented by Eugene Perkins and Ralph E. Pope, the furnace is a heat-producing rotary cavitation device for which the inventors have been granted four United States patents, the most recent one in 1994. Numerous independent companies and testing agencies have found the same over-unity performance: Coefficient of Performance or C.O.P.(the ratio of output to input power) in the range 1.2 to as high as 7.0, with most typical operation in the range 1.5 to 2.0. Dr. Mallove and Jed Rothwell of Infinite Energy recently confirmed the excess heat in a preliminary on-site test." 28

Infinite Energy Magazine Update

Published in IE Volume 4, Issue #21

September 1998

infinite-energy.com:

"1. Kinetic Furnace of Kinetic Heating Systems, Inc. of Cumming, Georgia (Featured in Issue #19):

At NERL we have further tested the second unit of the Kinetic Furnace that we received. Again, we obtained disappointing results that are in the range COP= 1.01 to 1.15— too low to call guaranteed over-unity. We still do not understand the differences between conditions in Bow and those in Georgia. So, we attempted to use various different sources of water, so far without seeing increases in COP.

Kinetic Heating Systems has acquired a more professional air-flow monitoring system than its Dwyer pressure gage. Still, the company reports significant over-unity power production. The particular device is an Air Data Multimeter (ADMA60), made by Shortridge Instrument Company, Inc., of Scottsdale, Arizona. The following are three tests that Kinetic Heating Systems has recently performed:

Test #1: August 17, 1998

- 200 V, 16.5 amp without blower fan, 19.5 A with blower fan on

- 3.6 kW-hour input energy = 12,287 Btu
 - 1,059 CFM air flow
 - T = 18.5 °F (Tin = 87 °F, Tout = 105.5 °F)
 - Output energy = 21,159 Btu
- C.O.P. = 1.72

Test #2: August 18, 1998

- 200 V, 16.5 amp without blower fan, 19.5 A with blower fan on
- 3.6 kW-hour input energy = 12,287 Btu
- 1,059 CFM air flow
- T = 22.2 °F (Tin = 83 °F, Tout = 105.2 °F)
- Output energy = 24,671 Btu

C.O.P. = 2.0

Test #3: August 20, 1998

- 3.6 kW-hour input energy = 12,287 Btu
- 1,049 CFM air flow
- T = 23 °F (Tin = 79 °F, Tout = 102.0 °F)
- Output energy = 26,077 Btu

C.O.P. = 2.12" 29

COP = coefficient of performance = how much in compared to how much out.

infinite-energy.com:

"The first U.S. Patent, #4,424,797 for "Heating Device" was awarded to Eugene Perkins, January 10, 1984 (filed October 13, 1981). .." 30

"The present embodiment of the device appears in U.S. Patent #5,341,768 (filed Sept. 21, 1993) by Ralph E. Pope of Cumming, Georgia, "Apparatus for Frictionally Heating Liquid." This version of the invention has a rotary pumping element spun by an electric motor within a water-filled chamber..." 31

Cavitation or 'Water Hammer' is what causes noisy plumbing in domestic water systems and sometimes it even bursts pipes. It is characterised by rattling or banging in the pipes. It was this well known problem that led Frenchman Joseph Michel Montgolfier, 1740-1810, of the ballooning Montgolfier brothers fame, to invent the first self-acting ram pump for raising water to his paper mill at Voiron. He realised the surprising amount of energy that can be derived by this 'free energy' method. 32

Both the ram pump and the revolving heater drums above work on the same basic

principle.

How The Ram Pump Works

The ram pump uses a low pressure water supply to achieve a higher water-pressure, usually driving (lifting) the water to a much higher level than the original supply.

This is achieved by creating pressure-pulses within the water flow in the pump by closing a valve when the flow is at its highest. Utilising (releasing) the pressurised water with a second valve and directing it to a pressure vessel, using the raised pressure in the vessel to force the water to a higher level. The lower pressure of the water in the pump releases the first valve, the flow resumes and the cycle is repeated.

This neglected source of free energy is up-and-running, used, all around the world. Free electricity is yours for the taking if you have a reasonable flow of water, a flowing stream at the bottom of your garden.

The Clem Engine

Inventor Richard Clem's idea sprang from his observations of a asphalt spraying machine that continued to run for some time after being switched off. One can only assume that the motor is very much like the original, that seems to be a device to heat the asphalt before spraying, much like the revolving heater drums above. 33

rexresearch.com:

Tyler Courier-Times (Sunday July 9, 1972)

Flower Mound, Texas -- Richard Clem claims that if the automobile industry would adopt his new invention, the American motorist would change the oil in his car only every 115,000 miles and in between not buy any gas.

That might come as a shock to Detroit and the petroleum industry, but Clem, a heavy equipment operator for the city of

Dallas and a spare time inventor, said he has discovered what french fries and hashbrowns have know for years -- that vegetable oil is a hot product.

He said his motor -- much of which he won't divulge -- uses eight gallons of vegetable oil for fuel.

"Engineers have told me this can't work," Clem said, laughing. "I only know it does. It will do someone some good and will help keep the air clean."

His motor is mounted in a bright red car but he said if it is made large enough, "this type of engine could power ships, aircraft, even provide enough power to produce enough energy for large cities.

Vegetable Oil Best ~

"I use vegetable oil because right now the engine is running at 300 degrees," said Clem, 43. "Water would boil and evaporate and conventional motor oil would break down."

The only apparent outside source of power in his car is a 12 volt battery, which Clem said "is used only to start the engine. Once started you can throw the battery away." He said, however, the battery is also used to power the car's lights and horn.

His power plant and car, both financed through his regular earnings, are not the picture of Detroit designing.

"I'm not an engineer, I'm an inventor," he said. "When I get this done I'll turn it over to the engineers and they can develop the finished product."

He said he once attempted to get financial backing, but "is now playing the waiting game."

"I've had offers recently" he said. "But I don't know, I don't want to be obligated to anyone."

Seven Stage Pump ~

Outside the meager electrical portion of the system used to start the motor and run the lights and horn, the power plant consists of a seven stage pump and a "converter."

The pump, as he described it, is used to move the oil, under pressure, from a storage area to the converter from where the energy is converted into enough power to turn the motor, move the oil back to the storage area and power the pump, which in turn continues the cycle.

One hint as to the contents of the converter is "it acts like a turbine but isn't a turbine" in the normal sense of the word, Clem said.

He said his car has "some bugs in it," but said it has been driven as fast as 103 miles per hour. And when he gets the bugs worked out, he plans to take it on a test trip 600 miles to El Paso, Texas." 34

micro-combustion.com:

"Several years ago, an original CIBC (Cavitation-Ignition Bubble Combustion Engine) was built and placed in a vehicle by a Mr. Clem to demonstrate its utility (Google in "Clem Hydraulic Motor," plus hit on the Clem Car). The engine was demonstrated at the Texas State Fair, after which it was never shown again and eventually destroyed. In building this particular engine, Mr. Clem had not developed it far enough to prove out all the scientific knowledge and engineering theories for purposes of patent and commercialization.

Later Mr. Ray and Mr. Clem started building another engine. At this time certain concepts were realized and known by Mr. Ray relative to this engine. Prior to completion of the engine, Mr. Clem died. Mr. Clem was survived by his wife and two children, without disclosing details of the CIBC engine to any of them. Mr. Ray has since continued their work to fully develop an advanced operational engine design concept, which is discussed below." 35

The Clem engine is something of a mystery, but interesting engineering and reasonably well documented. Clem received no monetary gain from his engine and the difficult thing to understand is his motive for so much hard work if this was an elaborate hoax? I don't see many sceptics working on this one though and I have to wonder why?

John Keely

John Ernst Worrel Keely was the inventor of the Keely Motor and victim to a constant barrage of abuse from the men of science of his day, something that persists even into our own time. Keely debunking has become a permanent feature.

All of this was of course, backed by the press, ever eager to grab a good story.

At least one of Keely's surviving motors works on the cavitation-ram pump principle and Keely always emphasised his use of the (at the time) scientifically acceptable aether as the driving force behind all of his creations. It has been claimed that he had up to 2,000 prototype motors and other devices manufactured by engineering companies. The cost must have been eye-watering, not mentioning that the man has been branded a fraud. A strange and bizarre method of making money for an alleged con-man?

An newspaper obituary was recorded by Keely's contemporary, Charles Fort, who in 1932, stated in his book "Wild Talents",:

resologist.net:

"In November, 1898, Keely died. Clarence B. Moore, son of his patron, Mrs. Bloomfield Moore -- short tens of thousands of dollars in his inheritance, because of Keely and his promises -- rented Keely's house, and investigated. According to his findings, Keely was "an unadulterated rascal."

Moore said that he had found the evidences of rascality. The motor was not the isolated mechanism that, according to him, the stockholders of the Keely Motor Co. had been deceived into thinking it was: he had found an iron pipe and other tubes, and wires that led from the motor to the cellar. Here was a large, spherical, metallic object. There were ashes.

Imposture exposed -- the motor had been run by a compressed air engine, in the cellar.

Anybody who has ever tried to keep a secret twenty-four hours, will marvel at this story of an impostor who, against all the forces of revelation, such as gas men, and coal men, and other persons who get into cellars -- against inquisitive neighbors, and, if possible, even more inquisitive newspaper men -- against disappointed stockholders and outraged conventionalists -- kept secret, for twenty-four years, his engine in the cellar.

It made no difference what else came out. Taboo had, or pretended it had, something to base on. Almost all people of all eras are hypnotics. Their beliefs are induced beliefs. The proper authorities saw to it that the proper belief should be induced, and people believed properly.

Stockholders said that they know of the spherical object, or the alleged compressed air engine in the cellar, because Keely had made no secret of it. Nobody demonstrated that by means of this object, the motor could be run. But beliefs can run."

Wild Talents, Charles Fort. 36

The Keely affair was a fiasco unequalled until the appalling treatment of Immanuel Velikovsky by the science community in the 1950's and 1960's.

At least one of Keely's surviving motors worked on the cavitation/ram pump principle.

The offending object, the thing that all the fuss was about, was a large pressure vessel used by Keely in earlier experiments and buried under the floor. Everyone who worked for Keely knew it was there. The accusation was that Keely's motors had been run from compressed air and that this was the vessel used to store the air.

To fill the pressure vessel he would have needed a compressor and the author knows of no such compressor that was found or presented as evidence against Keely.

Anyone who knows anything about compressed air knows that you also need a compressor and that compressors are the most noisy of machinery. Even today these machines are often given a soundproof room of their own. No one had ever mentioned a compressor or the sound of one and Keely used extreme pressures for his motors, almost unheard of at the time. Pipes would burst and it's said that the pressure forced water through the very pores of the castings. The machine found in the cellar was a water-motor, and not a compressor and we will examine

this later.

Keely's lab was literally taken apart by Clarence B. Moore shortly after Keely's death and Moore would have whooped for joy at finding a compressor, but none was ever found.

(Moore was, interestingly, an archaeologist and a fully paid-up member of the scientific fraternity)

All of the debunking theories that I know of, depend on the source of Keely's power as being compressed air or variations on the same theme. Without a compressor they all fail and no newspaper article, or other written documentation of the time has ever mentioned finding one. 37

The author is all in favour of debunking that which is illogical or just plain wrong, but the facts must be accurate. A debunking with inaccurate facts suggests an agenda, used to bolster other inaccurate facts. This kind of debunking is used by those who wish to support a brand of exclusionism that amounts to dogma. Keely may well have been a fraud for all I know, but the facts presented by his past and present-day detractors would not stand up in a court of law.

The graphic above was published by The New York Journal, based on the evidence of Clarence B. Moore and other debunkers – a work of pure imagination. But, it seems to be the basis for the information of many Keely debunking website's and publications. 38

Starting from the top of the picture on the previous page, we have a reasonably clear view of a belt that directly drives the machine. For this not to have been noticed by the large number of engineers and scientists who attended Keely's demonstrations is, to say the least, incredible.

We then descend to the false ceiling where a "rubber tube ending in a pneumatic ball" is seen. I know of no contemporary reports of this being found at the time of the workshop being dismantled. Photographs were published of all that was found and this was not among them, as far as I know. It seems to have been a myth or theory that became an assumption that became alive, in a sceptical fantasy world of its own.

The Water Motor

There were, we are told, other fraudulent means that Keely used to bilk his shareholders, not least is what was described by the press of the day as a "Small Water Motor of Unusual Design" 39 or words to that effect. It is located at the

bottom of the graphic. This Water Motor was said to have been used to drive hidden belts and pulleys, as in the graphic above, that in turn drove Keely's "impossible machines".

Keely's workshop was, in effect, a machine-shop where parts were manufactured, with all the machines and equipment that one would expect. At that time all machine-shop-machines were powered by overhead belts driven by pulleys situated above. Any belts that descended to floor level were encased or hidden because they were dangerous, and so we see that a belt "hidden" in a wall cavity was not unusual but desirable. More so when we consider that Keely's workshop was often crowded with those who came to examine his machines. 40

A small water motor of the type used at the time can be seen here:douglas-self.com:

The best of these museum pieces that I've seen (they were water-turbines enclosed in a cast metal body) generates a quarter horsepower and the one in question was limited in Keely's case by having to be driven by the workshop water supply - probably a domestic tap, working from

domestic water mains pressure. This certainly would not provide enough power to drive the belts and pulleys, let alone a machine-shop.

That there was a type of water motor in the cellar at Keely's workshop is not disputed, but the only one that fits the bill is one of Keely's own design. 41 42

Dale Pond, a Keely researcher,⁴³ assures us in his video that he has had this one, or one like it, working and is intending to make a duplicate for testing purposes, as the original is a museum exhibit and not free for experimentation.

What I have discovered of the workings of Keely's motor, is that it operates on the principle of cavitation, 'water hammer', the design is ingenious, something that would impress any engineer.

And so we have the crazy situation of Keely's "impossible machines" being surreptitiously driven by one of Keely's "impossible machines". We also have compressed air driven machines that seem to work without a compressor? I would suggest the debunkers look again at the facts.

I've written to two of the debunking web sites, outlining my doubts regarding their conclusions. One answered and made minor adjustments, while still maintaining the original stance, with even less evidence. The other has failed to answer up to the time of writing, suggesting that they do not want to argue the point. The debunking method seems to follow a trend common in these pages: That, confronted with something not understood or taboo to science, the sceptic

reverts to a cosy rationalisation, it may be baloney, but it serves as an explanation. This explanation then takes on a life of its own and becomes a standard, although totally untrue and unjustly destructive to reputations, it is grist to the mill of scepticism and nothing more. It's time for some of us to look closely, sceptically at the sceptics.

It's interesting to note that after his death, all of Keely's technical papers and at least one book he was writing disappeared from his workshop, never to be seen again. A question arises as to who would gain from the theft of technical manuals written by an 'exposed conman'? This reminds us of Tesla's papers, the vast majority of which also vanished shortly after his death.

We have above yet another example of a working cavitation machine that defies the manipulated laws of science. It works by cavitation and with the help of the very thing that was abandoned in favour of Mr. Einstein's Relativity, that never made anything work. The aether, that gave us our electronic technology and is the very something that Keely had spent most of his life developing, only to be called a charlatan and a fraud.

An additional point, although already touched upon but never mentioned by detractors, is the huge cost of the many prototype machines that Keely had built by contractors and then scrapped, something that is well documented. I seriously doubt that a greedy confidence trickster would deplete his own ill gotten gains with such high costs. This is yet another mystery that debunkers ignore exposing their own gullibility to the scientific rationale. But they seem to feel secure in the knowledge that they are supported by an academic science that is prepared to forego the usual norms of human honesty for the sake of upholding the perpetual motion of a flawed and dogmatic science. The need to exchange for religion for dubious science commands a high fee.

svpviril.com:

"There is a celestial mind-force, a great sympathetic force which is life itself, of which everything is composed." John Keely. Keely is speaking of the aether. 44

svpviril.com:

DENIES KEELY WAS AN IMPOSTOR

PRESIDENT OF THE MOTOR COMPANY DEFENDED THE DEAD INVENTOR.

"NYT -January 26, 1898 - President B. L. Ackerman of the Keely Motor Company, after a meeting of the Board of Directors of the company held yesterday at the office of the Treasurer of the company at 31 Broad Street, gave out a statement denying the published assertions that compressed air or electricity was the force

used by Keely in his much-talked-of motor. The statement claims that the tubes spoken of were discarded by Keely many years ago and that in all his experiments since 1887 solid wires only have been used. Up to that time, it is stated, he was working upon a theory of etheric or vaporic force and used the tubes for the conveyance of this force; but after 1887 he became convinced that he had discovered something still more perfect in what he called vibratory sympathy. It was said that a concealed electric wire was found when Keely's workshop was recently cleared out. This President Ackerman states was the remnant of the wires of a burglar alarm, and was in no way connected with the force used in the Keely motor. The statement reviews at length the various assertions recently made tending to show that Keely was nothing more than a successful impostor, denies all these assertions and declares positively that there was no trickery about any of the results that Keely claimed to have obtained." 45

Keely Motor Tested.

lange.demon.co.uk:

New Etheric Engine and its Powers Displayed in Philadelphia to Representative Railroad Men.

NYT - PHILADELPHIA, Penn., June 19, 1897

"A test of the new etheric engine was made yesterday at Inventor Keely's laboratory in this city. A number of gentlemen were present, including General Manager Fransioli of the Manhattan Elevated Railway, New York; Mechanical Engineer Pierson of the same company, Chief Electrical Engineer Brown of the Western Union Telegraph Company, and Mr. Sterritt of the Metropolitan Traction Company, New York. All were surprised at the force produced by Mr. Keely's new motor, (all driven by a quarter horsepower water-motor?) but they declined to express any opinion as to its value. The new engine is a complicated structure, arranged and supplied with vitalized disks of metal, placed at intervals on two hoops or bands of steel, one of which runs inside the other. These disks are composed of a secret metallic composition. Mr. Keely's representative said he has a large number of drawings, specifications, and photographs, which he will, when he applies for a patent, submit to the authorities at Washington. This he expects to do in about thirty or sixty days. Aside from these disks, Mr. Keely has also prepared a metallic powder, which, to look at, very much resembles iron or steel filings, but which lacks one essential feature of iron or steel - it will not respond to the attraction of a magnet. The engine, which weighs about 200 pounds, will, it is said, develop fully ten-horse power." 46

Compare the Keely motor to hot fusion - plasma research, that has cost billions with no positive results. Keely had results but was never satisfied with his work. Exploding water with 42,712.2 Hz, one of Keely's discoveries that modern science

is just starting to wake up to. 47 48

Robert Adams Inspired Motors

These motors are simple to build, but the author found that they produce more interesting effects if magnetically activated mechanical contacts are used rather than the transistor.

"Could a Little Child be Leading Us into a Free Energy Future?"

By Jeane Manning.

Atlantis Rising, November 200(?), pg.32.

truthinheart.com:

"The search for new energy technology takes us to northern Idaho to meet a ten-year-old girl who won a science fair with a battery-charging motor. She describes it as an advanced design that extends the life of batteries for an amazing length of time. The motor was designed by John Bedini and built by her." 49

The schoolgirl science fair project was so well publicised at the time, that it was featured in the Simpson's TV program: "This perpetual motion machine she made is a joke: It just keeps going faster and faster.

Lisa, get in here! In this house, we obey the laws of THERMODYNAMICS!" -- Homer Simpson

The Adams-Bedini Motor: The motor is driven by repulsion of the rotor north pole magnets by a pulsed north pole electro-magnet stator. The pulses are timed to coincide with the permanent magnet being in the correct position at the time of the pulse for maximum efficiency. The short pulses ensure low current use and thereby the efficiency of the motor.

I'm not sure if this is free energy or if it was ever originally meant to be free energy, but the author has built several of these and they certainly were efficient. The term 'free energy' is used emotionally and applies to anything where the source of energy is cost free, like tapping into your next-door-neighbours electricity supply; obviously not to be confused with perpetual motion where something is supposed to be driven with no power source at all. For some obscure reason, many science-based web sites call anything not conventionally driven, perpetual motion - it seems to be an insecure and sceptically biased fear of anything new.

Watching a recent news item about electric cars, it struck me that a car driven by such a motor would be a real advancement in technology, rather than switching

the fossil fuel burning from the car to the power station?
Such motors were originally based on the work of Robert Adams. 50

Adams motor, UK Patent, GB2282708. 51

There has been some controversy on the Wiki pages as to whether the Adams Motor is a reluctance motor acceptable to mainstream electronic engineering.

wikitalk:

"Fine. I'll agree on the present text. No problem. But I think you really *OUGHT* to write that reluctance motor article sometime. It would be an interesting addition, and point of comparison. I've done scratch pages. At least make a stub page with some links. The Adams motor is not an alien technology, you can reasonably fit it into various recognised branches of existing motor design literature. Just because something is labelled 'perpetual motion,' it does not mean no aspect of the device can be understood or explained in standard language. Timharwoodx 19:29, 18 Feb 2005 (UTC)

OK, I think we got something like civilized consensus here. Yes, writing the missing article should be high priority on my list. --Pjacobi 20:52, 2005 Feb 18 (UTC)

Well, the present wording is 'suggested categorisation.' Hardly a strong statement, I think. It opens and closes with perpetual motion. If you feel the further qualification is required in the sentence afterwards, then fine. But this is exactly why I got fed up with Wiki, and moved over to Wikinfo, because in seeking an unobtainable 100% bias free narrative, you just end up with broken prose. The Adams motor is in many respects just an s.r. motor, and some would argue that is entirely the problem. Yet this simple fact has to be laden with several rather verbose qualifications." 52

Wiki wrongly identifies the Adams Motor as a perpetual motion device:

en.wiki:

"Perpetual motion describes "Motion that continues indefinitely without any external source of energy; impossible in practice because of friction." It can also be described as "the motion of a hypothetical machine which, once activated, would run forever unless subject to an external force or to wear". There is a scientific consensus that perpetual motion in an isolated system would violate the first and/or second law of thermodynamics." 53

The Adams Motor appears in Wiki under the heading "Perpetual Motion", which supports my own feeling that the term is deliberately abused and used to divert attention away from the sad fact that science has never bothered to investigate

these high efficiency electric motors. The phrase Perpetual Motion equates with impossibility. My own experience: having built several of these motors to different configurations, I can say with a high degree of confidence that they do work and they are efficient. I found that using the mechanical method of metal contacts rather than a transistor was the most interesting.

In the final version, I wired a large capacitor and a resistor in series across the contacts. The resistor became very hot even though I was using only a small 9 volt portable printer charger for the supply, with no obvious effect on the rotation of the motor. The circuit appeared to emit large amounts of unidentified radiation, destroying many of the components in a near-by computer. There seems to be much scope for research here, but science is disinterested, preferring to debunk.

All Adams-Bedini type motors run from a power supply, they are very efficient and ideal for use in power-saving applications. Perpetual motion plays no part in their operation. Those who scoff at something like this should first do the work and test the results, something well within the ability of most school kids, but seemingly beyond the reach of physicists. 54

Alternate Energy and Nikola Tesla

In the midst of a particularly hard winter, I am reminded of the obscene profits of the utility companies, earned on the backs of those less privileged - the old, sick, infirm and poor who give-up meals in order to pay their electricity bills or even become ill and eventually die, indirectly from the ravages of cold.

With this in mind, I turn my attention to the physicists who are the mediate accomplices to the crime of denying alternate energy supplies in order to support the theory that put-paid to their development.

This has a long history that goes back to the end of the nineteenth century and Tesla's lab, starved of cash that was rightfully his to use in researching lossless energy transmissions. His paymasters were the same utility companies, they wanted to stop his work because they feared loss of revenue due to the difficulty of metering the supply - a problem that Tesla would have solved. Tesla's name was blackened and he was called a madman, his patent for radio was awarded to Marconi until it was recovered in 1943, after his demise. He became a non-person until recently his name reappeared as the person who made the technology of our time possible.

He was removed from the history of science to make-way for a theory that he opposed, a theory that denied what he called the "wheel-works of nature" - "that would drive industry without the need for coal and oil". Something that is

laughed to scorn by today's science, but something that worked and was seen to work by many in Tesla's day.

It cannot work now because the laws of thermodynamics say so, even though these same laws have been manipulated to mean that which science finds more comfortable. Tesla's ideas were excluded and remain excluded to this day, along with the ideas of several other pioneers of cheap, clean, energy systems.

Physicists are not ignorant of this, but they are well paid and wish to keep their jobs for fear of becoming one of the old and sick who can't afford to pay their utility bills.

The purpose of these energy pages is to show the illogicality of such thinking and offer the opportunity to some to think for themselves about the feasibility of past rejected energy systems.

"Broadcast Power" Nikola Tesla

"Lost Science" by Gerry Vassilatos

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ISBN 0-932813-75-5 1999

The book describes just how Tesla achieved his lossless power transmissions and it's not difficult to understand how he did it:

RADIANT ELECTRICITY Gerry Vassilatos

"Through successive experimental arrangements, Tesla discovered several facts concerning the production of his effect. First, the cause was undoubtedly found in the abruptness of charging. It was in the switch closure, the very instant of "closure and break", which thrust the effect out into space. The effect was definitely related to time, IMPULSE time. Second, Tesla found that it was imperative that the charging process occurred in a single impulse. No reversal of current was permissible, else the effect would not manifest. In this, Tesla made succinct remarks describing the role of capacity in the spark-radiative circuit. He found that the effect was powerfully strengthened by placing a capacitor between the disrupter and the dynamo. While providing a tremendous power to the effect, the dielectric of the capacitor also served to protect the dynamo windings. Not yet sure of the process at work in this phenomenon, Tesla sought the empirical understanding required for its amplification and utilization. He had already realized the significance of this unexpected effect. The idea of bringing this strange and wondrous new phenomenon to its full potential already suggested drilling new possibilities in his mind. He completely abandoned research and development of alternating current systems after this event intimating that a new technology was about to unfold." 55

High frequency DC pulses, a spark-gap and a capacitor is all that is needed.

Tesla's broadcast power is often classified as pseudoscience, but a glance at its history will show that it worked and was observed working during his lifetime. The reason we don't see it working today is because of denial and myth-making by the media supported by academia. For a demonstration of Tesla's longitudinal electromagnetic waves - the transmission of direct current through space see Konstantin Meyl below:

meyl.eu:

"Potential vortex, newly discovered properties of the electric field are fundamentally changing our view of the physical world."

Prof. Dr.-Ing. Konstantin Meyl

"In his books,... Prof. Meyl chooses Faraday's law of induction, as a hypothetical factor and proves that the electric vortex is a part thereof. This potential vortex propagates scalar-like (waves) through space and is a longitudinal electric wave whose properties have already been established a century ago by Nicola Tesla. This phenomenon can now be studied and examined thanks to a fully functional replica designed by Prof. Meyl." 56

"A demonstration of Nikola Tesla's theory of the transmission of power without the use of wires using EM 'Scalar Waves'. Demonstration by Professor Dr. Konstantin Meyl of Germany.

Transmission of Power Without Wires (Scalar Waves)" 57

Top 5 Free Energy Technologies Unfolding Now in January 2012

"Off the radar of the mainstream media, many futuristic energy technologies are positioning themselves to change the course of human civilization. These breakthroughs herald a fantastic future in which energy scarcity is a thing of the past." 58

Those who think that only academic science, with its hundred year old theories, can be right will gain nothing from reading these pages. The idea that Tesla is wrong because science says so is unproductive and flies in the face of all of those who have found merit in his ideas by careful study and experimentation.

Someone who sets out on a journey absolutely certain that they are going the wrong way will never reach their destination.

en.wiki:

Free Energy Suppression:

"There have been numerous free energy claims over the years. Many, such as those implying perpetual motion or those based on extracting zero-point energy, are viewed as impossible according to accepted physical laws...Others, such as

cold fusion, while not fundamentally impossible, are not accepted by the scientific community. Conspiracy advocates therefore claim that the scientific community has controlled and suppressed research into alternative avenues of energy production via the institutions of peer review.” 59

The Wiki article treats these important subjects as if they are a conspiracy theory joke, forgetting that the very science it is supporting is claiming a not too distant future disaster, due to our burning of fossil fuels. It is absolutely true that science has no serious research efforts to find an answer to the energy problem and we are fobbed-off with stories of wind power and solar panels.

Not forgetting that wind power is our oldest source of energy and not a gift from modern science. Science, as always, is supporting the vested interests of those who provide funding for science to maintain the status quo.

There is no need for a conspiracy where academic science is concerned as it is stuck in its own mire and prevented from considering alternatives by modern theories that deny the existence of alternative sources of power. One entrenched physicist tells me that those who make claims for alternative energy sources never produce the goods. But, it must be remembered, and I make no apology for repeating, that research, development and marketing are all required to bring a new technology into general use. This is expensive and those with the cash will, before spending on such a project, consult the "experts". To them, of course, the experts are the academic physicists, the very same characters who are determined to debunk, kill-off, any advance that will threaten their comfortable life, perpetual hot fusion projects and entrenched theories. Creativity and inventions, not done according to the fixed rules of science are now called fraudulent trickery. It is this circular process that prevents progress.

Perpetual motion is impossible as it would require energy from nowhere, from nothing, and all of the energy I write about is from somewhere. A pipe driven through a dam will give free energy, but the scientists are saying that according to theory there cannot be any water in the dam. It's a little difficult to prove that something does not exist, as every scientist knows.

Chapter 11

MOON IN THEIR EYES Mysteries and Anomalies of the Moon

I don't understand what it is that makes people laugh at the very notion of

conspiracy theories. The governments of the world spend billions in tax-payers money on security services who's job it is to root-out conspiracies and devise ones of their own, they even have their own tame, advisory scientists.

Conspiracy denial seems to be an epidemic, a meme. But then anomalies and mysteries regarding our own natural satellite don't need a "Did we go to the Moon" conspiracy, because several books could be written about all the other Lunar mysteries, anomalies and things for which science has no answers.

I found some of the following on the Internet long ago, compiled by Ronald Regehr who is said to be surprisingly, a "researcher and scientist in the defence industry and NASA", and I decided that I would keep it for posterity. I've added some updates, links and remarks (in parentheses) and all of his items are numbered. It's quite old and the original link is gone, but it suits our purpose in that all modern interpretations of the data have become highly technical and intellectually obfuscated:

Lunar Anomalies

Compiled by Ronald Regehr

"After hundreds of years of detailed observation and study, our closest companion in the vast universe, Earth's moon, remains an enigma. Six moon landings and hundreds of experiments have resulted in more questions being asked than answered.

Among them:

1. Moon's Age: "The moon is far older than previously expected. Maybe even older than the Earth or the Sun. The oldest age for the Earth is estimated to be 4.6 billion years old; moon rocks were dated at 5.3 billion years old, and the dust upon which they were resting was at least another billion years older."

(There are now theories that rationalise this in accordance with the status quo, but they are only theories presented as if they were fact.) 1

bibliotecapleyades.net:

"Harvard's respected astronomy journal Sky and Telescope reported that at the Lunar Conference of 1973, it was revealed that one moon rock was dated at 5.3 billion years old which would make it almost a billion years older than our planet. This puzzle was compounded by the fact that lunar dust in which the rocks were found proved to be a billion years older than the rocks themselves. Chemical analysis showed that the moon rocks were of a completely different composition from the soil around them. Since dusty soil is usually produced by the weathering and breakup of surrounding rocks, the lunar rocks must have come from someplace other than where they were found. But where?" 2

All of the theories about the Moon's origin have been around for decades or even centuries, but they are interchanged on a regular basis. There is more up-to-date information but there is also a caveat in that the rock used cannot really be dated with any certainty and any meteorites found on the Moon could have come from anywhere at any time in the past n millions of years or just yesterday.)... 3

bibliotecapleyades.net:

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I recall seeing this age given in an astronomy magazine of the seventies or it may have been the eighties. But it was soon realised by scientists that the age was incompatible with theory and the game was on to find ages more agreeable. Some scientists have short or selective memories and deny that this was ever in print. Others justify it by claiming that the more modern, 'corresponding' dates are attributable to improved dating techniques. Improvement on dates that are concerted to fit theories is not improvement.

Note:As I recall, it was Sky and Telescope who censored the first pictures of Mars, from panic, 'that they would give credence to the theories of Velikovsky'.

Then I found a supporting reference from the seventies:

The Moon and the Planets

William R Corliss

ALE19 Earth-Moon Compositional Differences page 116

Problems in Dating Lunar Rocks and Soil

"X3. Analysis of lunar sample 14163. The ratios of lead-207 to lead-206 were 1. 2 to 1. 3, giving apparent ages of up to 5. 5 billion years. "This isotopic composition has never been observed anywhere in the material of the solar system. "(R1)

References

R1. Driscoll, Everly; "Dating of Moon Samples, " Science News, 101:12, 1972. (X1-X3)"

Doubt: Moon Rock Dating

ridgecrest.ca.us:

(The idea that the age of the Earth can be determined from the age of the Moon depends upon a known relationship between the age of the Earth and the age of the Moon. If one knows that the Earth and the Moon are the same age, then knowing the age of one tells the age of the other. If one knows the Moon is younger than the Earth, then knowing the age of the Moon establishes a minimum age of the Earth. If one knows the Moon is older than the Earth, then the age of the Moon establishes a maximum age of the Earth.

Some scientists have made guesses about how the Moon was formed. Some think that lots of rocks were attracted by gravity to form the Earth while fewer rocks were attracted by gravity to form the Moon. They say the Moon formed in orbit around the Earth at the same time as the Earth was formed. Other scientists believe the Moon was belched out of the place where the Pacific Ocean is now by an enormous eruption. That would make the Moon younger than the Earth. Still others believe the Moon is a big rock that had been drifting around the universe for a long time before it got captured by Earth's gravitational field. If that is true, the Moon could be much older than the Earth. All we know for sure is that scientists don't know for sure. Therefore, the age of the Moon has absolutely no bearing on the age of the Earth.

But let's assume, just for the sake of discussion, that the age of the Earth is the same as the age of the Moon. Can we really tell the age of the Moon using a mass spectrometer? Scientists can smash a piece of moon rock down to individual atoms. Each kind of atom (each isotope) has a different atomic weight (mass). A mass spectrometer separates atoms by weight and tells you how much of each isotope is in the rock. What does knowing how much of each isotope is in the rock tell you? It just tells how much of each isotope is in the rock—nothing more.

If we know the amount of uranium and lead in a rock, can we tell how old it is? We can if we know how much uranium and lead were in the rock to begin with. We can make one of two assumptions. (1) There was some lead in the rock when it was formed. (2) There wasn't any lead in the rock when it was formed.

If we make the first assumption, then we have to figure out how much there was. Since scientists don't know what process formed the rock in the first place, we can't possibly know how much uranium and how much lead that process created. Therefore, the accuracy of the computed date depends entirely upon how well we guess the initial concentrations of uranium and lead. There is no more reason to believe that the rock initially contained 20% uranium and 80% lead than there is to believe that the rock initially contained 80% uranium and 20% lead. If you

assume an initial concentration of each kind of material, the calculations will yield an age determined entirely by whatever wild guess you make."

If we make the second assumption, the calculation will yield the oldest possible age. This assumption is attractive to people who want to try to justify their belief in an old age of the Earth. The second assumption is a tough one to swallow, though, because one must postulate a natural process that turns hydrogen and helium into iron, oxygen, nickel, carbon, gold, copper and uranium, but not lead. What is there about lead which would make it harder to produce than nickel or copper? Nothing. So the imaginary process that creates uranium must not produce lead for some unexplained reason. This hardly seems like solid, scientific reasoning.

If one uses three different dating techniques on two different rocks from the same rock formation, it is quite possible that one will get six different dates. If one uses Potassium/Argon and Lead/Lead on the same rock, the Potassium/Argon date will probably be millions of years while the Lead/Lead date will probably be billions of years. Geologists know this, so they never bother to do Lead/Lead dating on recent lava flow, nor do they do Potassium/Argon on "ancient" gneiss. Whenever a radioactive date calculation does not agree with the preconceived notion of how old the rock is, that date is declared "discordant" and is ignored.

We'll bet that Mitsunobu Tatsumoto didn't do any Potassium/Argon dating tests on the moon rocks. If he had, he would have come up with ages tens or hundreds of million years old because the Potassium/Argon method simply can't produce dates that are billions of years old. All the original potassium would have decayed into argon in a few billion years, so there isn't anything left to date. If there is any potassium at all, the computed date will be in the tens or hundreds of millions of years.

Given the current prejudice today, few scientists would admit to believing any moon rock age that is expressed in millions of years. Any "young" age calculation would be blamed on potassium contamination during the trip back to Earth, no matter how carefully the rocks were shielded from outside contamination.

But suppose that tomorrow someone comes up with a popular theory that an asteroid struck the Earth 65 millions years ago, causing molten rock from the center of the Earth to squirt out into space, where surface tension shaped it into the ball that we call, "the Moon". Then some scientist would certainly do Potassium/Argon tests on moon rocks until he finds one 62 ± 4 million years old, and would offer that as definitive proof of the theory. Mitsunobu Tatsumoto's 4.5

billion year age calculations would be declared invalid for one reason or another.

We hate to sound too cynical, but this sort of thing happens all the time in geology and paleontology. You just have to read the scientific literature about all the controversy of the dating of fossils like skull KNM-ER 1470 and certain Grand Canyon rocks.

They say that someone who has respect for the law and loves to eat sausage has never seen how either one is made. One might also say that anyone who believes in radioactive dates doesn't understand the radioactive dating process.” 5

It will be claimed that the above quote is creationist inspired, but the writer has a points well worth pondering. To reject on the grounds of religious bias (as we have seen in a previous chapter) is to engender the idea that anti-religious thinking is somehow superior. Extreme religious, political or scientific polarity is suspect and leads to clouded reasoning.

Back to Ronald Regehr:

2. Rocks Origin: “The chemical composition of the dust upon which the rocks sat differed remarkably from the rocks themselves, contrary to accepted theories that the dust resulted from weathering and breakup of the rocks themselves. The rocks had to have come from somewhere else.”

3. Heavier Elements on Surface: “Normal planetary composition results in heavier elements in the core and lighter materials at the surface; not so with the moon.”

(No one knows what a “normal planetary composition” is because no one has ever dug into any planet other than the Earth. The idea that the Earth is a model for all planetary formation is an assumption.)

“According to Wilson, “The abundance of refractory elements like titanium in the surface areas is so pronounced that several geologists proposed the refractory compounds were brought to the moons surface in great quantity in some unknown way. They don't know how, but that it was done cannot be questioned.”

4. Water Vapour: “On March 7, 1971, lunar instruments placed by the astronauts recorded a vapour cloud of water passing across the surface of the moon. The cloud lasted 14 hours and covered an area of about 100 square miles.”

dailymail.co.uk:

“As recently as 2006 the settled value for the lunar bulk water content was below 1 part per billion. Most values now discussed (2012) well exceed 1 part per

million,"

(Not enough for a 100 square miles of vapour though? There are some more up-to-date reports of water found by probes, but never enough to explain the original sighting.

Just as an aside, water on the Moon was one of Velikovsky's predictions) 6

5. Magnetic Rocks: "Moon rocks were magnetized. This is odd because there is no magnetic field on the moon itself. This could not have originated from a "close call" with Earth, such an encounter would have ripped the moon apart."

(The Moon's anomalous magnetism was one more of Velikovsky's many 1950's predictions. All of his predictions have been denied or called lucky guesses by astronomers.)

6. No Volcanoes: "Some of the moons craters originated internally, yet there is no indication that the moon was ever hot enough to produce volcanic eruptions."

(However, many features of the Moon's surface are described scientifically as volcanoes and lava tubes.)

Update

Brian Handwerk

for National Geographic News

October 26, 2009

news.nationalgeographic.com:

"A "skylight" found on the moon's surface could provide access to a cozy underground shelter for future humans on the moon, scientists say.

Japan's Kaguya spacecraft recently captured pictures of the curious dark hole, which may open onto a large underground lava tube...

...Researchers believe the moon's volcanoes were active until about three billion years ago, although recent data from Kaguya indicate there might have been volcanic activity as recently as 2.5 million years ago.

Due to the moon's volcanic past, scientists have long expected that lava tubes exist in the lunar underground." 7

(When the theory of the Moon's origin was last changed it was realised that volcanism was OK after-all.)

7. Moon Mascons: "Mascons, which are large, dense, circular masses lying twenty to forty miles beneath the centres of the moons maria, "are broad, disk-shaped objects that could be possibly some kind of artificial construction. For huge circular disks are not likely to be beneath each huge maria, centred like bulls-eyes in the middle of each, by coincidence or accident".

(The artificial construction idea started with an idea that originally came from

NASA itself with the 'Hollow Moon theory'. Mascons are now used by NASA to explain-away all anomalous crash-landings and even some that were not attributed to gravitational effects at the time like Apollo 11.)

8. Seismic Activity: “Hundreds of "moonquakes" are recorded each year that cannot be attributed to meteor strikes. In November, 1958, Soviet astronomer Nikolay A. Kozyrev of the Crimean Astrophysical Observatory photographed a gaseous eruption of the moon near the crater Alphonsus. He also detected a reddish glow that lasted for about an hour. In 1963, astronomers at the Lowell Observatory also saw reddish glows on the crests of ridges in the Aristarchus region.”

9. (NASA) Hollow Moon: “The moons mean density is 3.34 gm/cm³ (3.34 times an equal volume of water) whereas the Earth's is 5.5.

What does this mean?

In 1962, NASA scientist Dr. Gordon MacDonald stated, "If the astronomical data are reduced, it is found that the data require that the interior of the moon is more like a hollow than a homogeneous sphere."

Nobel chemist Dr. Harold Urey suggested the moons reduced density is because of large areas inside the moon where there is "simply a cavity."

MIT's Dr. Sean C. Solomon wrote, "the Lunar Orbiter experiments vastly improved our knowledge of the moons gravitational field . . . indicating the frightening possibility that the moon might be hollow."

In Carl Sagan's treatise, *Intelligent Life in the Universe*, the famous astronomer stated, "A natural satellite cannot be a hollow object." (He was quick to notice things like that.)

(The hollow Moon idea is now played down.)

en.wiki says:

"The Hollow Moon theory is a pseudoscientific theory that suggests that Earth's Moon is a large hollow sphere. The concept is a recurring plot device in science fiction, although no scientific evidence exists to support the idea". 8

(Well no it's not pseudo-scientific, because the idea originated with academics and academic scientists say 'they are science'.

Seismic observations have been shown to be unreliable to say the least as we will see, but the data suggests that the Moon is more dense at its surface than below.)

10. Moon Echoes: “On November 20, 1969, the Apollo 12 crew jettisoned the lunar module ascent stage causing it to crash onto the moon. The LM's impact (about 40 miles from the Apollo 12 landing site) created an artificial moonquake with startling characteristics; the moon reverberated like a bell for more than an

hour. This phenomenon was repeated with Apollo 13 (intentionally commanding the third rocket stage to impact the moon), with even more startling results. Seismic instruments recorded that the reverberations lasted for three hours and twenty minutes and travelled to a depth of twenty-five miles, leading to the conclusion that the moon has an unusually light or even no core.”

(Supporting a “Hollow Moon” idea that is pseudo-scientific!)

11. Unusual Metals: “The moon's crust is much harder than presumed. Remember the extreme difficulty the astronauts encountered when they tried to drill into the maria? Surprise! The maria is composed primarily ilmenite, a mineral containing large amounts of titanium, the same metal used to fabricate the hulls of deep-diving submarines and the skin of the SR-71 "Blackbird". Uranium 236 and neptunium 237 (elements not found in nature on Earth) were discovered in lunar rocks, as were rustproof iron particles.”

12. Moon's Origin: “Before the astronauts' moon rocks conclusively disproved the theory, the moon was believed to have originated when a chunk of Earth broke off aeons ago (who knows where from?). Another theory was that the moon was created from leftover "space dust" remaining after the Earth was created. Analysis of the composition of moon rocks disproved this theory also. Another popular theory is that the moon was somehow "captured" by the Earth's gravitational attraction, but no evidence exists to support this theory.

Isaac Asimov, stated, "It's too big to have been captured by the Earth. The chances of such a capture having been effected and the moon then having taken up nearly circular orbit around our Earth are too small to make such an eventuality credible."

(The collision theory is back in vogue, with Earth allegedly having been struck by a Mars-sized planet with the material ejected from it coalescing to form the Moon.)

More Lunar History, Origin and Age

Caveat:

With the coming of the space probes, all pre-space age astronomical theories of the Moon and indeed those of the whole Solar System had to be abandoned and reconsidered. Therefore, unless some major changes in the astronomer's mode of thinking has taken place, all astronomical theories without direct observations are somewhat suspect.

The Solar System (Oxford University Press, 1973)

"Books written about the solar system before the advent of the space age could as well have been written in Latin or Greek, so dated do they appear to a

contemporary reader."
Zdenek Kopal

Various theories of the Moons origin have been conjectured but the one currently in vogue is The Giant Impactor Theory. All of the various other theories are recycled and reused over the years and this is the one fashionable at the moment.

Giant Impactor Theory
starchild.gsfc.nasa.gov:

"The Giant Impactor Theory (sometimes called The Ejected Ring Theory): This theory proposes that a planetesimal (or small planet) the size of Mars struck the Earth just after the formation of the solar system, ejecting large volumes of heated material from the outer layers of both objects. A disk of orbiting material was formed, and this matter eventually stuck together to form the Moon in orbit around the Earth. This theory can explain why the Moon is made mostly of rock and how the rock was excessively heated." 9

Constraints from Recent Data
csep10.phys.utk.edu:

"A detailed comparison of the properties of Lunar and Earth rock samples has placed very strong constraints on the possible validity of these hypotheses. For example, if the Moon came from material that once made up the Earth, then Lunar and Terrestrial rocks should be much more similar in composition than if the Moon was formed somewhere else and only later was captured by the Earth."
10

moondaily.com:

("According to Schmitt: "If the Giant Impact hypothesis is not compatible with this evidence, alternatives to it should be considered, including capture of a small, independent planet from a solar orbit near that of the Earth's." 11
He should have known better than to ask for multiple theories as science works only with a consensus single theory.

Controversial Moon Origin Theory Rewrites History
news.discovery.com:

"The moon may have been adopted by our planet instead of descended from it. If a new twist on a decades-old theory is right, conditions in the early solar system suggest the moon formed inside Mercury's orbit and migrated out until it was roped into orbit around Earth.
The idea flies in the face of scientific consensus, known as the giant impact hypothesis, which holds that the moon formed from red-hot debris left over after

a Mars-sized object collided with Earth around 4.5 billion years ago.

Malcuit's version of events is tantamount to cosmic blasphemy, but scientists have recently found 4 billion-year-old minerals in Australia that suggest our planet was too cool to have sustained a cataclysmic moon-forming impact early in its history. "Everything in the giant impact model is hot, hot, hot," he said. "It's incompatible with what we see in the geologic record. Earth is cool enough at that time to have ocean water on its surface.

Malcuit's computer modeling studies, which he has worked on since the 1980s, show that it is possible for Earth's gravitational pull to capture the moon." 12

They come and they go, and then they come back again. It's origin, formation and how the Moon came to be orbiting the Earth is a complete mystery to astronomers and any theory offered is simply bravado.

Some Velikovsky stuff and magnetic flux ropes.

Even though the universe has been shown to be electrical in nature, the scientists continue to insist that electrical forces play little or no part in celestial dynamics. This, in spite of the huge electrical potential of the Sun and that of the Earth having been known for decades. The plasma in space is electrical in nature although astronomers call such things "magnetic". School kids know that there is no magnetic field without an electric current - astronomers apparently don't. But, not long ago, NASA made a discovery it couldn't ignore and it seems it may force the astronomers, kicking and screaming, to acknowledge something they have denied for decades. This is because of what are called magnetic flux ropes, electric currents that flow from the Sun and throughout the Solar System. However, I would not recommend holding your breath because they still insist in calling them "magnetic" ropes.

The main reason behind this denial is said by many, to be due to the "Velikovsky affair" that started with the publication of the book, 'Worlds in Collision' in 1950. In it Velikovsky insisted that the universe is electrical in nature and that it was electricity rather than gravity that played the major role in its formation. For unexplained reasons, astronomers went a little mad after his theory became public knowledge and they have never recovered.

Both Velikovsky and astronomers made predictions about the Moon before the first landings. Velikovsky's predictions turned-out to be right and those of the astronomers were wrong. As a result, the astronomical community devised a campaign of debunking and character assassination that persists to this day. Most of his critics have never read his book, relying on second hand accounts from peer

reviewed writers who use their authority to support lies about his undeniable predictive achievements. The obvious solution is to actually read Wolds in Collision with an unbiased mind, something the sceptics seem incapable of doing.

It's Okay to Call the "Magnetic Flux Ropes" Found Connecting the Sun and Earth an Electric Current!

nowpublic.com:

by mgmirkin | June 17, 2008 at 02:08 pm

"In science, we would like to think that there are no taboos and that all subjects should be available for research. Not so, unfortunately... What do the terms "cold fusion," "UFO," "Velikovsky" stir in the minds of academics? The simple answer is often nothing short of contempt.

Contempt is an ugly word, but not far off the mark.

Contempt is an intense feeling or attitude of regarding someone or something as inferior, base, or worthless—it is similar to scorn. Contempt is also defined as the state of being despised or dishonored ...

Source: en.wikipedia.org

Preconceptions about particular topics, especially so-called "hot-button issues" (religion, politics, etc.), are a natural part of human existence. Everyone has opinions and one's own opinions often color one's assessment of others and their opinions.

In some cases, a simple difference of opinions blossoms into something more onerous. An extreme difference of opinions on a polarizing issue may lead to one or the other side developing contempt for the other, at which point communications may break down or cease altogether.

One such instance is the curious case of electricity in space or the presumed lack thereof despite compelling evidence to the contrary.

It seems there has been a breakdown in communications between the field of astronomy and the fields of plasma physics and electrical engineering. Astronomers appear to be operating under the presupposition that charges cannot be separate in space and that currents do not exist between ponderable bodies in the sparse plasma medium between them. This may be at least partially an effect of the backlash relating to the so-called "Velikovsky affair."

To wit, it appears that astronomers have taken this presupposition so far that they steadfastly refuse to mention electric currents they have detected, preferring to refer only to their magnetic field byproducts in their press releases, except when the evidence becomes incontrovertible. As though simply refusing to mention

them by their proper name (much as an ostrich hides its head in the sand when faced with a threat) somehow validates the view that either they're "not there" or "do nothing."

The electromagnetic field is a physical field produced by electrically charged objects. It affects the behaviour of charged objects in the vicinity of the field.

The electromagnetic field extends indefinitely throughout space and describes the electromagnetic interaction. It is one of the four fundamental forces of nature (the others are gravitation, the weak interaction, and the strong interaction).

The field can be viewed as the combination of an electric field and a magnetic field. The electric field is produced by stationary charges, and the magnetic field by moving charges (currents); these two are often described as the sources of the field. The way in which charges and currents interact with the electromagnetic field is described by Maxwell's equations and the Lorentz force law." 13

Astronomers have allowed the Velikovsky affair to cloud their judgement and in doing so have themselves become scientifically unstable and unreliable as we see below. Make no mistake, this and other issues continue today. 14

Earth's electric charge:

Scientists tend to dodge questions about the Earth's 'net electric charge' by referring to the charge at the surface compared to the charge of the ionosphere. As the ionosphere is part of the Earth we obviously need the net charge of both, but this is not forthcoming.

Velikovsky, History the 1960's
grazian-archive.com:

(Donald) "Menzel was angered by the Bargmann-Motz letter in Science, (supporting the predictions of Velikovsky) considering it to be 'uncalled for.' He seemed infuriated that Larrabee in one noncommittal passage had called attention to an ironical situation: in 1952, in the Proceedings of the American Philosophical Society, Menzel had offered calculations to show that if Velikovsky were right about electromagnetic forces in the solar system, the sun would have to have a surface electric potential of 10^{19} (10 raised to 19th power, 10 billion billion) volts - an absolute impossibility, according to the astronomer; but in 1960, V. A. Bailey, Emeritus Professor of Physics at the University of Sydney (Professor Bailey died December 7, 1964, in Switzerland - he was en route to the United states, where he hoped to see experiments carried out in space to test his hypotheses), claimed that the sun is electrically charged, and that it has a surface potential of 10^{19} volts -- precisely the value calculated by Menzel. Bailey, at the time his theory was first published, was entirely unaware of Velikovsky's work and of

Menzel's repudiation of it.

The idea that his 'quantitative refutation of Velikovsky's wild hypothesis' - Menzel's own description of his contribution to the Proceedings in 1952 - should now be brought to Velikovsky's support was intolerable to the Harvard astronomer. So, when he mailed his paper to Harper's in 1963, he also sent a copy to Bailey in Sydney and asked him in a covering letter to revoke his theory of electric charge on the sun. That theory was casting doubt on the continuing efforts of Menzel and other American scientists to discredit Velikovsky, and Menzel pointed out what he conceived to be an error in Bailey's work.

Professor Bailey, taking exception to the idea that his own work should be abandoned to accommodate the anti-Velikovsky forces, prepared an article in rebuttal of Menzel's piece and submitted it to Harper's for publication in the same issue with Menzel's. Bailey had discovered a simple arithmetical error in Menzel's calculations, which invalidated his argument." 15

A true, honest, scientific assessment is never considered as a possibility and science takes second fiddle to the face saving antics of Donald Menzel.

Back to Ronald Regehr:

13. Weird Orbit: "Our moon is the only moon in the solar system that has a stationary, near-perfect circular orbit. Stranger still, the moon's center of mass is about 6000 feet closer to the Earth than its geometric center (which should cause wobbling), but the moon's bulge is on the far side of the moon, away from the Earth. "Something, somehow" had to put the moon in orbit with its precise altitude, course, and speed. Unknown!"

14. Moon Diameter: "How does one explain the "coincidence" that the moon is just the right distance, coupled with just the right diameter, to completely cover the sun during an eclipse? Again, Isaac Asimov responds, "There is no astronomical reason why the moon and the sun should fit so well. It is the sheerest of coincidences, and only the Earth among all the planets is blessed in this fashion."

Greek authors Aristotle and Plutarch, and Roman authors Apollonius Rhodius and Ovid all wrote of a group of people called the Proselenes who lived in the central mountainous area of Greece called Arcadia. The Proselenes claimed title to this area because their forebears were there "before there was a moon in the heavens." This claim is substantiated by symbols on the wall of the Courtyard of Kalasasaya, near the city of Tiahuanaco, Bolivia, which record that the moon came into orbit around the Earth between 11,500 and 13,000 years ago, long before recorded history."

Many thanks to Ronald Regehr

A few more anomalies:

The Moon's Magnetic Field

en.wiki:

"The Moon has an external magnetic field that is very weak in comparison to that of the Earth. Other major differences are that the Moon does not currently have a dipolar magnetic field (as would be generated by a geodynamo in its core) and the varying magnetization that is present is almost entirely crustal in origin." 16

The remnant magnetism of Lunar iron-rich rocks was an unwelcome surprise to NASA and to science in general. Velikovsky had written to NASA prior to the missions, asking that the positions of magnetic rocks be recorded; yet another of his predictions in his book WIC.

The Earth's geodynamo theory is something totally unproven by science, but because no one has access to the core of the Earth it remains in place. Basing speculation upon this presumed theory, it was postulated by scientists that the Moon would have no magnetic field. However, around this time Venus was also found to have no magnetic field and one would expect a drive to modify the theory? Venus has always been considered as Earth's twin as far as size, Solar System position and assumed composition is concerned.

Additionally, as if this was not enough to explode the theory, it was found that Mercury most probably had a magnetic field, quite the reverse to what would be expected from theory.

en.wiki:

"The lack of an intrinsic magnetic field at Venus was surprising given it is similar to Earth in size, and was expected also to contain a dynamo at its core. A dynamo requires three things: A conducting liquid, rotation, and convection. The core is thought to be electrically conductive and, while its rotation is often thought to be too slow, simulations show it is adequate to produce a dynamo." 17

Mercury

en.wiki:

"At the first close approach, instruments detected a magnetic field, to the great surprise of planetary geologists—Mercury's rotation was expected to be much too slow to generate a significant dynamo effect. The second close approach was primarily used for imaging, but at the third approach, extensive magnetic data were obtained. The data revealed that the planet's magnetic field is much like the Earth's, which deflects the solar wind around the planet. The origin of Mercury's

magnetic field is still the subject of several competing theories."
[http://en.wikipedia.org/wiki/Mercury_\(planet\)](http://en.wikipedia.org/wiki/Mercury_(planet))

Geophysicists invented all manner of theory-patches to explain the reason why Venus has no magnetic field while Mercury has one:

en.wiki:

"This implies the dynamo is missing because of a lack of convection in the Venusian core. On Earth, convection occurs in the liquid outer layer of the core because the bottom of the liquid layer is much hotter than the top. On Venus, a global resurfacing event may have shut down plate tectonics and led to a reduced heat flux through the crust. This caused the mantle temperature to increase, thereby reducing the heat flux out of the core. As a result, no internal geodynamo is available to drive a magnetic field. Instead, the heat energy from the core is being used to reheat the crust.

One possibility is Venus has no solid inner core, or its core is not currently cooling, so the entire liquid part of the core is at approximately the same temperature. Another possibility is its core has already completely solidified. The state of the core is highly dependent on the concentration of sulfur, which is unknown at present." 18

en.wiki:

"The origins of the magnetic field (of Mercury) can be explained by dynamo theory; i.e., by the convection of electrically conductive molten iron in the planet's outer core. A dynamo is generated by a large iron core that has sunk to a planet's center of mass, has not cooled over the years, an outer core that has not been completely solidified, and circulates around the interior." 19

This shameless statement keeps geology going as a science and removes the need to change the text-books.

All of the above is pure "may have been" speculation and not one jot of empirical proof supports any of this intellectualising, but it is entered as fact and used in support of further theorising. We see a clear example of how science moves ever further from reality as theory replaces reality. Plate tectonics is yet another unproven theory considered in the next chapter.

Stars hanging on the Moon's limb

Astronomers make various measurements with stars and planets occulted by the limb of the Moon. In other words, they use the edge of the Moon's disk to cover the star:

en.wiki:

"The term occultation is most frequently used to describe those relatively frequent occasions when the Moon passes in front of a star during the course of its orbital motion around the Earth. Since the Moon, with an angular speed with respect to the stars of 0.55 arcsec/s or $2.7 \mu\text{rad/s}$, has no atmosphere and stars have an angular diameter of at most 0.057 arcseconds or $0.28 \mu\text{rad}$, a star that is occulted by the moon will disappear or reappear in 0.1 seconds or less on the moon's edge, or limb. Events that take place on the Moon's dark limb are of particular interest to observers, because the lack of glare allows these occultations to more easily be observed and timed." 20

A theoretical problem arises when a star hangs too long at the point of occultation (limb), sometimes some distance away from the Moon or even appears to pass onto the Moon herself. John Herschel is said to have observed such an effect.

On September 3rd 1905, H. P. Hollis (Royal Observatory) grew tired of waiting for the stars to occult.

The first record I have of this is on May the 4th 1783 with around twenty other reports up to 1956. Modern astronomers, it seems ignore such mavericks, probably because they cast doubt on Einstein's 'light bending in a gravitational field'. These observations certainly cast doubt on the science of occultation.

This is probably an optical phenomenon, but are the so called "proofs of relativity" also optical? 21

Radio waves do the same thing:

On December 15th 1972 the Apollo spacecraft Endeavour passed behind the Moon. The radio signals continued when there should have been none. 22

adsabs.harvard.edu:

Nature, Volume 242, Issue 5400, pp. 601 (1973).

"The reception of radio signals from the orbiting lunar spaceship America after its occultation behind the lunar limb is a confirmation of results reported for the Apollo 15 ship Endeavour¹. Similar observations arranged with the lunar command module during the Apollo 16 mission were unsuccessful because transmissions from the command module did not occur while the Moon was above our horizon." 23

The two phenomena appear to be part of the same (optical?) effect?

Transient lunar phenomenon (TLP)

en.wiki:

"Claims of short-lived lunar phenomena go back at least 1,000 years, with some

having been observed independently by multiple witnesses or reputable scientists. Nevertheless, the majority of transient lunar phenomenon reports are irreproducible and do not possess adequate control experiments that could be used to distinguish among alternative hypotheses. Few reports concerning these phenomena are ever published in peer reviewed scientific journals, and the lunar scientific community rarely discusses these observations.

Most lunar scientists will acknowledge that transient events such as outgassing and impact cratering do occur over geologic time: the controversy lies in the frequency of such events." 24

Transient lunar phenomenon typify the things that science refuses to acknowledge. The reason, we are told, is because of unpredictability and the inability to reproduce and control. Reproduction and control are impossible in any astronomy and this is a get-out-of jail explanation that fails to include the serious problem of new areas of study. If science refuses to look at an event it will usually conclude that 'we didn't look because it probably never happened'. Such ultra-conservative scepticism cannot, by any standards, be considered as part of a search for knowledge.

And then we find:

physorg.com:

Operation Moon Blink: "NASA's Operation Moon Blink detected 28 lunar events in a relatively short period of time." 25

Not so long ago, anyone claiming to see flashes of light on the Moon would be viewed with deep suspicion by professional astronomers. Such reports were filed under "L" ... for lunatic."

26

Ages of Flashes: "Aristarchus, Plato, Eratosthenes, Biela, Rabbi Levi, and Posidonius all reported anomalous lights on the moon. NASA, one year before the first lunar landing, reported 570+ lights and flashes were observed on the moon from 1540 to 1967." 27

Professional astronomers are more interested in the mathematics of the universe and have little time to actually look at a body like the Moon. They do tend to tell others "how things ought to be" even though the 'ought to be' has little in common with reality.

See Hume's 'Is-ought Problem', something with which science has yet to come to grips. 28

Lunar Bridge:

astronomy.com:

“On July 29, 1953, John J. O'Neill observed a 12-mile-long bridge straddling the crater Mare Crisium. In August, British astronomer Dr. H.P. Wilkens verified its presence, "It looks artificial. Its almost incredible that such a thing could have been formed in the first instance, or if it was formed could have lasted during the ages in which the moon has been in existence.” 29

Also building bridges:

philipcoppens.com:

"On July 29, 1953, John J. O'Neill, editor in chief of the scientific columns of the New York Herald Tribune, dedicated his free time by observing our satellite through his telescope. He observed what he felt was a bridge that spanned the crater in the Mare Crisium. He estimated that the bridge measured approx. 15 miles long. O'Neill spoke about his discovery in a rather careful tone, suggesting that this was a “natural bridge” which “somehow” had formed itself, this in the course of just one night. He reported his find to the Association of Lunar and Planetary Observers, but his report was mocked and attacked. One month later, the legendary British astronomer Dr. H.P.Wilkins confirmed the findings of O'Neill. Patrick Moore, another of the leading figures of English astronomy, confirmed the observation." 30

The search continues for a feature on the Moon that may or may not be there.

The Shard:

thelivingmoon.com:

The Shard, an obelisk-shaped object that towers 1 mile from the Ukert area of the moons surface, was discovered by Lunar Orbiter 3 in 1968. Dr. Bruce Cornet, who studied the amazing photographs, stated, "No known natural process can explain such a structure." 31

The Tower:

thelivingmoon.com:

One of the most curious features ever photographed on the Lunar surface (Lunar Orbiter photograph III-84M) is an amazing spire that rises more than 5 miles from the Sinus Medii region of the lunar surface. 32

The Obelisks:

Lunar Orbiter II took several photographs in November 1966 that showed several obelisks, one of which was more than 150 feet tall. ". . . the spires were arranged in precisely in the same way as the apices of the three great pyramids." "Six Mysterious Statuesque Shadows Photographed on the Moon by Orbiter", 33

The following studies are particularly interesting in that they are not supposed to

exist. It is interesting in that one of the continuing themes used in the 1950's Velikovsky debunking is that there is no evidence of perturbation in the Moon's orbit by the close approach of the planets Mars and Venus. The first one below would be around the time that Velikovsky claims an Earth close encounter with the planet Mars:

William Corliss, The Moon and Planets - Moon ALB3 Page 86

X2. "Sudden" perturbations in non-gravitational forces. "The parameter [D]", which is a linear combination of the accelerations of the Earth and Moon, can be followed as a function of time with high confidence from about 700 BCE to the present. From its behavior, we are apparently forced to conclude that there was something like a 'square wave' in the non-gravitational forces that began about 700 CE and that lasted until about 1300 CE. During the time of this square wave, the accelerations apparently changed by factors of around 5.

We are seriously lacking in mechanisms to explain the non-gravitational forces. The only mechanism of tidal friction (the 'shallow seas' model) that has been evaluated quantitatively provides only about one fourth of the necessary amount of friction, and it does not provide for much change with time within a period as short as historic times. Forces of non-tidal origin, which are of the same order as the tidal forces, may be due largely to core-mantle interactions. There are no quantitative theories of these interactions; there are only models whose parameters are uncertain within many orders of magnitude. " (R2) CE equals Christian Era.

In other words, the Moon shifted its position at some time before or circa 700 CE, close to the Velikovsky prediction.

X3. Discrepancy between the observed rate of the moon's recession and that attributable to tidal action.

"Now Thomas Van Flandern of the U.S. Naval Observatory reports that he has discovered such evidence for a weakening of gravity. He told the meeting of the American Geophysical Union in Washington this week that the evidence comes from a study of the motions of the moon.

If gravity is weakening, the orbits of planets around the sun or of satellites around planets will expand, and the orbital period of these bodies will correspondingly increase. Some such expansion is provided by tidal forces in these systems, and the trick is to subtract out the tidal forces and see if there is any left over.

Working with the calculations of two other observers, Van Flandern reports he has found there is an increase of four centimeters a year in the radius of the moon's orbit that is not accounted for by tidal action. "This is the first numerical result which appears to have as its most probable explanation that gravity is decreasing." (R3)

X4. "Nongravitational" drift of the moon's longitude.

"(Ray) Lyttleton's view cannot be dismissed out of hand. The argument starts out from observational evidence that the Moon, as viewed from Earth, seems to be subject to an 'extra' acceleration apart from the expected influence in line with Newton's laws of motion. The result is a drift of the longitude of the Moon compared with Newtonian predictions, amounting to 0.5 degrees of arc per thousand years, and 3 or 4 degrees for the dates of the oldest eclipses on record" (Quarterly Journal of the Royal Astronomical Society, vol. 20, p. 243).

"Lyttleton says that calculations based on Newtonian mechanics suggest that a certain eclipse two or three millennia ago would have been visible only in America. But contemporary records report sightings from Europe.

Lyttleton takes these figures as evidence that the earth is slowly shrinking and that its moment of inertia is likewise changing." (X4)(see the later chapter on geophysics)

"In contrast to Lyttleton's view, some astronomers believe the earth is expanding." (WRC) William R. Corliss 34

Lunar Gravitation Anomalies

The original explanations as to why the early moon probes missed their target included everything but gravity, and it's only in the past three years or so that NASA have actually admitted that gravity played any part in its Lunar probe failures. They now attribute all of the problems to mascons, high concentrations of heavy matter embedded in the Lunar surface. Although these anomalies do account for orbital inconsistencies they cannot explain all of the question to be considered regarding the original probes. This is the reason the post below at Keelynet.com has been included. Because, when we consider that it was posted in 1997, well before any announcements by NASA it appears almost prophetic in nature. Jim Ostrowski's insight leads him to the conclusion that gravity was the problem, although he thinks it may be due to centre of mass anomalies following the lead of NASA's Dr. Gordon MacDonald and his hollow Moon theory:

keelynet.com:

Date: Sat, 25 Oct 1997 19:38:41 -0700 (PDT)

From: Jim Ostrowski

To: vortex-l@eskimo.com

Subject: Luna

"Evidence from the early space probes that Lunar gravitational gradient calculations were possibly flawed:

The United States and the Soviet Union started to send probes to the Moon in the late fifties. Most of these initial probes met with miserable failure. It is posited here that the reason(s) for these early failures were due to a miscalculation of the lunar gravitational gradient.

While it would appear that the calculated mass of the moon was accurate enough to determine the surface gravity (1/6 of Earth's gravity) this is not sufficient data required to properly calculate landing or impact velocities if the moon were assumed to be a hollow spheroid instead of a homogenous mass of rock throughout it's volume. (See Hollow Moon above)

This is because in the case of a hollow spheroid the center of mass is much closer to the surface of the moon if in fact the moon is hollow than if it really were a homogenous mass of rock. The location of the center of mass of any celestial object is critical in determining it's gravitational gradient, hence the final velocity of any object required to soft-land or otherwise come in contact with the moon would not be known unless the location of the center of mass is somehow determined.

The first of three early successful probes, Luna 1, was launched by the Russians on January 2, 1959, was not required to land, but rather "Flyby" the moon at a distance of about 4600 miles. This is a sufficient distance from the surface where exact knowledge of the location of the center of mass is not critical to success.

Luna 2 became the first manmade object to hit the moon. Here though, the probe was allegedly not designed to withstand impact, so no conclusions were drawn about the fact that it ceased to function thereafter.

Luna 3 circled the far side of the moon, took some pictures, and sent them back to the earth. Strangely, Russian moon exploration came to a four year stop after these initial successes. The Russians were characteristically secretive about the data they collected.

The American efforts were almost laughable at first. The Ranger space probes were designed to hard land on the moon.

Ranger 3, launched on January 26, 1962 , missed it's target completely and went into solar orbit.

Ranger 4 hit the moon but did not send back any useful information.

Ranger 5 missed the moon by 450 miles and the whole program was put on hold

for two years.

Ranger 6 allegedly had its electrical system burn out in flight and no pictures were sent.

The Russians re-activated their space program, but their:

Luna 5, launched on May 9, 1964, crashed at full speed on the moon, when it was intended to make a soft landing. Luna 6 utterly missed the moon.

Luna 7 crashed on the moon when its retro rockets fired too soon, which is a significant detail in relation to where one assumes the moon's center of gravity to be located in relation to the surface.

(Causes other than centre of gravity miscalculation, but related to gravity will be discussed.)

This is because of the fact that if the moon were assumed to be a homogenous rock, the braking required to make a soft landing could begin taking place at an earlier time than if the moon were a hollow spheroid of the same mass.

The reason for this is that the acceleration that gravity imparts to a landing spacecraft is lower if the center of mass is further away from the landing surface, therefore a slower burn rate of fuel is allowable to soften the landing. Hence an earlier ignition starting time may be allowed.

Ignition start time is also one of the easiest flight parameters to control, much more so than burn rates on any rocket motor.

Miscalculation of the moon's gravitational gradient cannot therefore be ruled out as a reason for the too early start time of Luna 7's landing rocket motor.

Luna 8 also crashed on the moon, but Luna 9 was successful, and became the first spacecraft to soft land on the moon.

Lunar probes from both the United States and the Soviet Union were more successful after this. This cannot most likely be attributed to some sudden advance in the quality of the hardware or telemetry methods of both space programs, whereas it is much more likely to be a result of recalculation of the lunar gravitational gradient.

end part 1 of 2 35

Radar Altimeter

en.wiki:

“Invented in 1924, by American engineer Lloyd Espenschied. However, it took 14 years before Bell Labs was able to put Espenschied's device in a form that was adaptable for aircraft use. In 1938 in co-operation with Bell Labs, United Air Lines

fitted a radar type device to some of its airliners as a terrain avoidance device.”
(Yet another pre 1940's major technology)

36

The radar altimeter and the gravimeter were available for use on all of the early Lunar probes along with sophisticated telemetry-radio equipment. The lander height above the Lunar surface was known and all instruments were capable of being monitored and controlled by NASA back on Earth with only just over a one second delay. The point being that the disastrous Moon crashes and the Apollo 11 near disaster (See below) were obviously due to not knowing the position of the Lunar surface.

How can this be?

One possibility is that the height reading did not agree with the gravity reading. Recall the almost disastrous Apollo 11 landing, when the computer went haywire after receiving data from the ground radar (altimeter).

If a height reading disagreed with a gravity reading you can be sure it would be the height reading that would be jettisoned, which is exactly what happened with Apollo 11.

At the first (soft) landing of an early probe, the gravity reading would probably be calibrated to one sixth Earth gravity in agreement with theory and all subsequent probes would be set the same. I don't argue that this is the exact scenario, but something very much akin to this would certainly have happened if a gravity reading was questioned. There is no way that science will admit to an error in sacrosanct gravity theory.

I note with interest that even with today's sophisticated altimeters, even the most recent Curiosity Mars rover mission has elected to lower the craft to the surface with wires, a mark of instrument (gravity) distrust? Such is sciences' trust in Newton's - as we will see – somewhat unreliable gravity equation, that also serves as a pillar supporting the whole architecture of physics.

Apollo 11

en.wiki:

"As the Eagle's landing radar acquired the surface, several computer error alarms appeared. The first was a code 1202 alarm, and even with their extensive training, neither Armstrong nor Aldrin was aware of what this code meant. They promptly received word from CAPCOM in Houston that the alarms were not a concern; the 1202 and 1201 alarms were caused by an executive overflow (overload) in the lunar module computer." 37

americaspace.org

"Four minutes into the Powered Descent, Eagle rotated 'face up' so that the radar on its underside was able to acquire the lunar surface and supply data on altitude

and rate-of-descent. "We needed to get the landing radar into the equation pretty soon," Armstrong told Hansen, "because Earth didn't know how close we were and we didn't want to get too close to the lunar surface before we got that radar." This showed them to be 10.1 km; a kilometre or so lower than the computer reckoned, because that was tracking their mean height above the surface, rather than their actual height." 38

"A kilometre or so lower than the computer reckoned" is more than enough for a disaster to occur. A kilometre or so is ten percent of the height of the spacecraft. One has to ask where this mean height came from and how it was calculated, as it is absolutely useless to anyone attempting to land on the Moon. Shutting off the retro-rockets a kilometre above the moon would mean certain disaster.

en.wiki:

"computers will unquestioningly process the most nonsensical of input data ("garbage in") and produce nonsensical output ("garbage out")." 39

Jim Ostrowski (Part 2)

In part 1, I have attempted to demonstrate how evidence from the early lunar space missions showed that something appeared to be lacking in the required effort to land the unmanned space craft on the lunar surface. The totality of that evidence indicates that it is at least possible that the calculations of the lunar gravitational gradient were just plain erroneous for some reason. The lunar orbiting space missions demonstrated even more evidence that the moon might not be a solid homogenous rock throughout it's volume. The most important evidence of this kind where this supposition was proven beyond all doubt was the discovery of the so called "mascons" or Mass Concentrations of Gravity that appear in some places around the lunar globe. These "mascons" were discovered by the Lunar Orbiter series of space missions of the late 1960's. NASA reported that the gravitational pull caused by these mascons was so pronounced that the spacecraft dipped slightly and accelerated when flitting by the circular lunar plains. (But not enough to crash a Lunar Mission spacecraft) This showed that there must be some hidden structures of some kind of dense, heavy matter centered like a bulls eye under the circular maria.

The Earth has mascons, but I've never read a report that they bring down aircraft?
40

No scientist has ever accounted for how these mascons got there or could have been formed by random natural processes. There is other data from the manned Apollo lunar exploration series that makes a case for the idea that the moon might not be a natural object formed by random processes such as congealing from a dustcloud, billions of years ago.

The most significant fact revealed from the samples of lunar soil and rocks brought back to earth by the Apollo astronauts is that the moon and earth cannot possibly share the same origins. The reason for this is the vastly different ages of the earth and moon as determined from samples of lunar material collected by the Apollo Astronauts.

Over 99 percent of the moon rocks brought back turned out upon analysis to be older than 90 percent of the rocks that can be found on the earth. The first rock that Neil Armstrong picked up after landing on the Sea of Tranquility turned out to be 3.6 billion years old.

Other rocks turned out to be even older, 4.3, 4.5, 4.6 and one alleged to be even 5.3 billion years old. The oldest rocks found on earth are only 3.7 billion years old, and the area that the moon rocks came from was thought by scientists to be one of the youngest areas on the moon!

(The reason for this, is claimed to be because the earth's rocks have been recycled due to plate tectonics, a theory that the author doubts. We will discuss this in the next chapter)

Scientists have generally offered three major theories to account for the moons orbit around our planet. All of these are in serious trouble. One theory was that the moon might have been born alongside the earth from the same cloud of gas and dust about 4.6 billion years ago. This theory had to be junked after the lunar rock and soil samples were analysed for their ages, as outlined above.

Another theory that the moon had somehow been ripped out of the earth, from the pacific basin, perhaps. This explanation fails for the same reason.

The third theory, that the moon had somehow been captured by the earth's gravitational field is interesting, but still not satisfactory, that is if it is assumed that the moon is a "natural" object maneuvered about by random gravitational processes. However, this theory is the most favored by scientists today. There are enormous objections to overcome in this last theory because of the extremely difficult celestial mechanics involved. (To admit to a capture theory is to give credence to Velikovsky et al and Earth's encounter with Venus, something so terrible to contemplate that science is prepared to modify its theories to avoid it.)

For one thing, any object entering the vicinity of the earth from elsewhere in the solar system has an initial velocity imparted by the sun's gravitational influence. The only confirmation that could possibly result in a rendezvous with the earth, would appear to be one where the moon had originated somewhere within the orbit of the earth around the sun.

The possibility of this occurring as a result of some random natural process is staggeringly minuscule. The moon would have to have been "launched" from

another planet (Venus or Mercury) or even from the Sun itself. If that were the case, then the lunar rocks and soil samples would be younger, not older than rocks found on earth.

However, the probability that the moon came from elsewhere in the solar system outside the orbit of the earth is even more remote, if not totally impossible. This is because, as the moon approaches the earth from outside earth orbit it would be gaining speed, and as it got near the earth, a braking manoeuvre would be required to put it into the orbit that it now has.

A braking manoeuvre can only be accomplished with thrusting systems under intelligent control of some kind.

As NASA scientist Robin Brett aptly summarized, "It seems easier to explain the non-existence of the moon than it's existence." But of course, the moon exists. Why or how it exists remains a mystery. 41

end part 2 of 2 and many thanks to Jim Ostrowski

Compare the above with a much more recent NASA articles:

Bizarre Lunar Orbits Nov. 6, 2006

"Lunar mascons are a mystery. Although scientists generally agree they resulted from ancient impacts billions of years ago, it's unclear how much of the excess mass is due to denser lava material filling the crater or how much is due to upwelling of denser iron-rich mantle material to the crust. Regardless of composition or origin, the mascons make the Moon the most gravitationally "lumpy" body known in the solar system. Although mascons also exist on Mars, none have been found on Venus or Earth; those two larger planets, however, have had an active tectonic (geological) past that has drawn their crusts down into their interiors several times in the past few billion years, homogenizing the distribution of mass." 42

The Search for the Neutral Point of Gravity, Earth-Moon.

The Neutral Point of Gravity (NP) between Earth and Moon is the point at which a traveller from Earth becomes subject to the influence of the Moon's gravity. An uphill journey becomes a downhill coast to the Moon at this point, the craft being free from Earth's gravity and within the Moon's domain of attraction. Apollo astronauts found it not to be in the position predicted by gravitational law.

(The Neutral Point should not be confused with the Lagrangian or L points.) 43

Distance Earth-Moon

It must be remembered that the Moon's orbit is an ellipse and so distances for the NP will vary according to the Moon's position in its orbit about the Earth, but only

within the bounds of the orbital ellipse. Some of the disputed distances could be considered to be within the bounds of orbital credibility, the reader can decide, but there are others that are not.

en.wiki:

"The distance between the Moon and the Earth varies from around 356,400 km (221,456 mi) perigees (closest point to Earth) ... to 406,700 km (252,712 mi) at the extreme apogees (farthest point from Earth)." 44

(The Lunar orbit seems to vary by around plus or minus 15,628 miles from an average orbital diameter of (237,084 miles.) and any value for the NP should be within these two limits.)

(There may be confusion with nautical and English miles in the 'Yahoo Answers' below. However the miles all appear to be English miles throughout.)

Yahoo Answers:

"Best Answer - Chosen by Voters.

"It was Sir Isaac Newton who had first calculated the Earth-Moon neutral point using his theory of gravitation. That theory gave him an average Earth- Moon distance of 238,900 miles, and the neutral point thus occurred at ~ 23,900 miles from the moon. (215,000 miles from Earth)

This of course gave the familiar figure that the Moon's gravitational attraction was about 1/6th that of Earth."

(Note: NASA's calculations are much the same, something which contradicts the claim that Newton's theory has been improved upon over time with more up-to-date mathematics and Einstein's general relativity. NASA is using original Newtonian gravity theory?)

NASA:

"Average Distance Moon from Earth

Metric: 384,400 km

English: 238,855 miles" (Newton 238,900 miles) 45

Newton's neutral point (NP): 23,900 miles from the moon. 215,000 miles from Earth.

But then came a 1969 edition of Time magazine, an interview with Werner Von Braun himself, and the beginning of a persistent mathematical mystery concerning the Earth-Moon dual planetary system. Time reported that "43,495 miles from the Moon lunar gravity exerted a force equal to the gravity of the Earth, then some 200,000 miles distant."

If this neutral point figure is correct, the Moon is much more massive than any standard view of celestial mechanics will allow. A mere two weeks after the Time magazine article, Werner Von Braun quite suddenly resigned all his NASA posts and took a position as Vice President for Fairchild Industries. It began a process of "arithmetical obfuscation", that can only be seen as deliberate, since to view what happened next as not being deliberate would be akin to charging NASA with gross mathematical incompetence.

Another example: in the 1981 edition of Baker's Space Technology, the Apollo 11 distance to the Moon is given as 253,475 miles. (Compare NASA 238,855 miles and Wiki's average 237,084 miles)

But the book 'Apollo 11 Moon Landing' gave the distance as just under 250,400 miles.

Then in 1996 Baker's Spaceflight and Rocketry gave the neutral point as 38,925 miles from the Moon and 214,550 miles from the Earth, giving a total distance Earth/ Moon of 253,475 miles.

(NASA 238,855 miles to the Moon and Newton said the neutral point occurred at ~ 23,900 miles from the moon.)

In Michael Collins, Carrying the Fire: An Astronaut's Journeys, he says "Houston reports the instant at which we leave the lunar sphere of influence. This means simply that despite the fact we are only thirty four thousand nautical miles from the moon, and still 174,000 from the earth, the earth's pull has become dominant, and the mathematical equations now recognise that fact."

What mathematical equations is he talking about, certainly not Newton's?

Conversion from nautical to English miles is: 34,000 U.S. nautical miles = 39,126 miles.

Newton's neutral point is 23,900 miles from the moon.

The SI standard is said to be used by science throughout the world and yet NASA, responsible for 'rocket science', does not use it.

en.wiki:

"SI is the world's most widely used system of measurement, used in both everyday commerce and science. The system has been nearly globally adopted with Burma, Liberia and the United States not having adopted SI units as their official system of weights and measures. While only the US does not commonly use metric units outside of science, medicine, and the government." 46

We can probably assume from the above that the US does use the SI system in

science, medicine, and government, but NASA doesn't use it? Yet we are told that NASA space missions are science and that it is a government agency? Would it be churlish of me to ask what the fabled, NASA scientists were doing while this was going on? No scientist would give a distance Moon-spacecraft in nautical miles and so we can be sure that no scientist was involved. The question presents itself as to whether there were any scientists involved in the mission or if there were, what did they do and what are they doing? During the 1999 Climate Orbiter mission the problem of measurement was still causing problems:

Mars Climate Orbiter

en.wiki:

"September 23, 1999, communication with the spacecraft was lost as the spacecraft went into orbital insertion, due to ground based computer software which produced output in Imperial units of pound-seconds (lbf×s) instead of the specified metric units of newton-seconds (N×s). The spacecraft encountered Mars at an improperly low altitude, causing it to incorrectly enter the upper atmosphere and disintegrate." 47

We seem to have no choice but to conclude that NASA has no scientific standards for measurement and that support from science is minimal!

answers.yahoo.com

"To confound matters even further, space experts at NASA or elsewhere do not state whether they are using surface to surface, or centre to centre measurements. Nor do they state whether they are using nautical miles or statute miles. Nor do they stick to any one system.

In short, "the only consistency in the Earth-Moon measurement scenario is the inconsistency of the data emanating from official sources." 48

We are all well aware that a curved path trajectory is used to get to the Moon and that the total miles travelled is dependent on the trajectory length, but nowhere is it stated that these distances are trajectory distances. The Earth-spacecraft distance stays the same whatever the trajectory, as does the distance to the Moon's orbit. The neutral point is fixed + or - within the orbital parameters given above.

Lunar Landings

If we return to the discussion on early space probes above, we see that they usually made it to the Moon, but problems arose when close to the Lunar surface or attempting to orbit the Moon. Landing was a particular problem throughout the programs culminating with Apollo 11, that came near to disaster.

The same applies to more recent Mars probes. The landing and navigation systems seem almost totally unaware of the position of the surface. This would be explainable in terms of a conflict of computer input data, from one instrument giving height above the ground and input from a faulty gravity measurement.

It is not in the nature of a scientist to consider the possibility that gravity theory may be at fault, even though it has been no secret that it was faulty from its inception:

Newton's gravitation theory did not work, and during his lifetime it failed to plot the position of the Moon. Contemporary astronomers told him so and disregarded his work, preferring the older tried and tested methods of Lunar positioning. However, such was his influence at the Royal Society, that his laws of universal gravitation were 'enforced' and remain to this day.

The position of the Neutral Gravity Point is an ideal means to check the universal gravitational theory because there are still apparent problems just as there were in Newton's time:

wisegeek.com:

"Around the late 19th century, astronomers began to notice that Newton's law did not perfectly account for observed gravitational phenomena in our solar system, notably in the case of Mercury's orbit. Albert Einstein's theory of general relativity, published in 1915, resolved the issue of Mercury's orbit, ..."

or did it? Objections to the Einstein resolution of Mercury's orbital anomalies continue to this day. 49

But then, the surprising revelation that the position of our nearest cosmic body has never been known with any certainty:

Laser Ranging

Lunar Laser Ranging experiment

en.wiki\;

"The ongoing Lunar Laser Ranging Experiment measures the distance between the Earth and the Moon using laser ranging. Lasers on Earth are aimed at retroreflectors planted on the Moon during the Apollo program, and the time for the reflected light to return is determined." 50

en.wiki:

"The most significant improvement of position observations of the moon have been the lunar laser ranging measurements, obtained using earth-bound lasers and special retro-reflectors placed on the surface of the moon." 51

Every now and then a bombshell like the statement above appears. But even with Lunar laser ranging there is none of the usual accuracy to the nth decimal point

that we have come to expect from a highly mathematically oriented, astronomical community. One would expect that there would be at the least a standard, average Earth-Moon distance derived from claimed accurate laser ranging measurements, but confusion reigns with wildly varying estimates given. This reinforces the notion that nature, in her guise of orbits and gravity, does not lend herself to accurate analysis, and that science does not work in the way that we are told it does.

One can only assume that the Moon's position, even today, cannot be accurately calculated.

Newton's gravitational law was originally supposed to remedy this situation and when it failed to do so, we are told that Einstein's general relativity would do the job; it obviously didn't work.

It may have come as a surprise to some that, as already mentioned above, prior knowledge of the Solar System, including the Moon, was almost completely abandoned and replaced by knowledge gained with the advent of space exploration. That almost everything written about the Solar System planets and their moons in the 1950's and even later, has been thrown overboard and replaced by NASA updates.

If we then extrapolate this 1950's lack of knowledge and apply it to the unexplored and inestimably more vast remainder of the cosmos, we still see the implausible but unwavering, certainty of astronomers, physicists and cosmologists of the fifties in today's scientists, who are still sure they 'know how it all works' with their consensus, single, but all-encompassing theories excluding all others. What is taught by astronomers is a false, fictitious fable.

Xenophilia.com:

Gravity of Moon Doesn't Fit Neutral Point ...again

"In 1960, before the Apollo missions, Encyclopedia Britannica reported the neutral point to be 20,520 miles from the Moon. A Moon with 1/6 Earth's gravity should have a Neutral Point between 22,078 - 25,193 miles from the Moons surface. Yet after the Apollo missions, Time magazine July 25, 1969 said "At a point of 43,495 miles from the moon, lunar gravity exerted a force equal to the gravity of the Earth, then some 200,000 miles distant" In 1973 Encyclopedia Britannica, gave a new neutral point distance of 39,000 miles. The problem with all of this is, a neutral point of 43,495 miles would make the moon with not 1/6th (16%) the Earth's gravity, but 64%. A moon with 64% of Earth's gravity would require way more fuel and power than was supposedly available in the Apollo missions." 52

Newton's theory gave him an average Earth-Moon distance of 238,900 miles, and the neutral point thus occurred at ~ 23,900 miles from the moon. (215,000 miles from Earth.)

STATUS: Confused?

There is an argument on a WikiTalk page that promises to answer all of this, but comes across as being a little lame:

Wiki editor Numbskll defends gravity:

"They appear to be confusing the Moon's sphere of influence and the point at which the Moon's gravitation and Earth's are equal. NASA were concerned with the Moon's sphere of influence, which starts around 40,000 miles from the Moon, and marks the point where the Moon's gravity has more influence on the spacecraft's trajectory than the Earth's. The 'Apollo 16 Flight Journal'[85] comments on this: "we're scheduled to cross that mythical line known as the lunar Sphere of Influence, the point of which we begin calculating the increasing of the lunar gravity on the spacecraft. Our displays here in Mission Control shortly after that point are generally switched over to Moon reference from Earth reference. The velocities that we have been watching decrease steadily up to now, will then begin to increase as the spacecraft is accelerated toward the Moon.." The point where the lunar gravity and Earth's gravity are equal is around 25,000 miles, (from what?) so there's no discrepancy to explain: they appear to be measuring different things."

What (on the Moon) is "the Moon's sphere of influence"?, gravity extends to infinity.

"They" certainly are "measuring different things", "they" are working from observations while Numbskll is working from a theory that will always give the same results. Something he wouldn't dream of examining for possible error because science no longer knows the difference between theory and actual experience. I've found that even astronomers tend to avoid or just don't acknowledge the point where the influence of Earth and Moon are equal and often confuse it with the Lagrange points as we will see. There is a midway point where the gravity of the Earth and the Moon are equal, but no one wants to talk about it. The reason may be that a true Lunar gravity gradient can be calculated from such data.

"Spacecraft from several nations have travelled to or past the Moon[86][87][88], so unless all their space programs are part of the conspiracy, at least one should have told us by now if the mass of the Moon was incorrect.

(They all depend on the same theory)

Similarly, if Lunar gravity was four times as high as generally believed, it would be demonstrable on Earth in unexpectedly large tidal motion."

He becomes totally brain-numb at this point, losing his reasoning powers completely.

No, the Moon's gravitational pull on Earth has always been the same. It's the theory that says the Moon's gravitational pull is 6% that of the Earth, ...it's a theory. If the theory is in error and needs to be changed to a higher value, changing it will make no difference to Earth-gravity or the tides. He thinks theory is real and cannot compute anything else.

Note the circular reasoning used to explain away a genuine enquiry. ...if the mass of the Moon was incorrect, says it all. Theoretical mass and actual mass can be different values.

"The Surveyor program moon landers had an engine thrust of 150 pounds and their landing weight was approximately 660 pounds on Earth. Five of these spacecraft soft-landed on the moon in 1966-68. If the Moon's surface gravity was much larger than one-sixth that Earth's, the spacecraft would not be able to soft-land on the Moon."

Surveyor 2, Launched 20 September 1966, crashed on the Moon 22 September 1966

Surveyor 4 Launched 14 July 1967, radio contact lost 17 July 1967 2.5 minutes from touchdown, probably also may have crashed?

The Surveyors had long legs equipped with shock absorbers and it was admitted that it would be dropped from a height of 13 feet at the end of the retro' burn. NASA was prepared for a bumpy ride. But why, if there was an altimeter on-board?

"The surface gravity of a moon is not directly related to the position (of) the neutral point between it and the planet it orbits. The neutral point between the Earth and Moon depends on the mass of the Earth, the mass of the Moon, and the current distance between them — which varies between the apogee of 405,500 km and perigee of 363,300 km, due to the Moon's eccentricity of 0.055. In contrast, the surface gravity of the Moon depends only on the gravitational constant, the mass of the Moon, and the radius of the Moon (see the equation at surface gravity). The surface gravity does not depend on the distance to Earth or the Earth's mass, so the neutral point is irrelevant to the Moon's surface gravity. The Moon's surface gravity is very close to one-sixth that of Earth's. (Seeds 1995, p. 378)"

Note that Wiki gives us 356,400 km to 406,700 km.

Although gravity does depend on planetary and Lunar mass, it can also be arrived at from the position of the NP. It should be possible to calculate the position of the NP and it should agree with observation, if the theory of gravity is valid, but that seems not to be an option. If the mass of the moon is higher than that calculated by theory it will be observed that the NP does not appear where theory predicts, which is what we are discussing.

The second point is that all such arguments from science-oriented-minds tend to put the logical cart before the horse. The assumption is made that a calculation based on Newtonian gravity theory has to be correct. This is completely missing the point that the theory may be in error, but science treats all such theories in this sacrosanct and decidedly odd manner.

"The site fails to note that the flight paths of the Apollo crafts were curved, not straight-line, so the neutral point within their flight paths would be significantly larger than the straight-line neutral point range of 22,000-25,000 miles (for illustration, see the bands of gravitational influence in the diagram accompanying Lagrangian point). The 'Time' article's statement would then be equally as true as the early 1960s 'Britannica'. The statement that the 1973 'Britannica' reported a different figure is currently unverified. The 1966 edition of The World Book Encyclopedia (volume 13, page 650) gives the Moon's surface gravity as one-sixth that of Earth's."

It would be pointless to position a NP on a curved flight path as this would be meaningless in terms of distance between planet and moon. Equally ridiculous is the idea that the measured distance Earth/Moon of a Lunar mission flight can be given when the craft makes several Lunar orbits after reaching the moon.

The Lagrangian points are totally different from the neutral point and irrelevant to the discussion. 53

STATUS: still confused, 43 years after the first manned Lunar landing mission and 53 years after the first Moon probe...

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R1. Smith, Carl R., et al; "Discrepancies between Radar Data and the Lunar Ephemeris, " Science, 160:876, 1968. (XI not shown)

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Something is under the bedrock
Earth Sciences Geology

"Loyalty to a petrified opinion never yet broke a chain or freed a human soul." -
Mark Twain

There is no new wisdom in science and any knowledge accrued in its presence is more by accident than design. Science consists of facts learned by rote and used as a means to perpetuate scientific political power and the economic status quo. All that we think we know is wrong, with titbits of truth interwoven to enhance the narrative.

The Earth Sciences are the Swiss cheese of science, having so many holes in their theories that it's hard to know where to begin. I was told apologetically by someone, that with all its faults "science is doing its best", while at the same time we have the sceptics telling us that science is a kind of ideal or in some extreme cases an absolute for the acquisition of knowledge. No one is quite sure.

Nothing is known about what lies more than a mile or two beneath our feet as will be seen, and yet the geologists claim to know about the structure of the Earth all the way down to its core, disregarding the fact that seismic reflection surveys could not be more wrong.

A series of super-deep boreholes demolished all the preconceived ideas of geology, but geology continues regardless, as if nothing had happened:

The Kola Superdeep Borehole

"Over forty years ago, researchers in the Soviet Union began an ambitious drilling project whose goal was to penetrate the Earth's upper crust and sample the warm, mysterious area where the crust and mantle intermingle the Mohorovic discontinuity, or Moho. So deep is this area that the Russian scientists had to invent new ways of drilling, and some of their new methods proved quite inventive. But despite the valiant effort which spanned several decades, the Russians never reached their goal, and many of the Earth's secrets were left undiscovered. The work done by the Soviets did, however, provide a plethora of information about what lies just beneath the surface, and it continues to be scientifically useful today. The project is known as the Kola Superdeep Borehole."

1

The seismic reflection surveys of the Kola site predicted discontinuities that failed to materialise in the expected transition from granite to basalt at 3-6 kilometres

beneath the surface. Seismic waves travel significantly faster below that depth and this was wrongly interpreted as being a change in the rock composition. This has also been the pattern for other deep hole projects with discontinuities not being present where geology predicted. It's almost 4,000 miles to the centre of the earth and seismology got the first seven miles wrong.

Discontinuity

en.wiki:

"Discontinuity in geotechnics is a plane or surface marking a change in physical or chemical properties in a soil or rock mass." 2

Anomalies and the Failure of Geology at Kola Superdeep Borehole

Temperature

The temperature predictions were proven wrong and the project had to be abandoned short of its goal for this reason. At maximum drill depth the rock responded to the drill more like a plastic than a rock, making the recovery of already drilled holes impossible.

Flowing Water at great depths

Water was flowing at depths totally unexpected, rationalised in terms of existing geology theory as having arrived from below in the form of out-gassing, the water then being trapped by impervious rocks above. If this is the case and the water is sealed, how do we explain the fossils?

Microscopic fossils were found at 6.7 kilometres below the surface. Twenty-four distinct species of plankton microfossils were found with carbon and nitrogen coverings rather than the limestone or silica. The heat and pressure seems not to have affected them as the microscopic remains were remarkably intact. 3

One would think that in the light of these discoveries a serious rethink of geological theory would ensue, but it's doubtful if it made any impression whatsoever... academic science is entrenched and fossilised in a geology of its own design.

everythingselectric.com:

Geogate - is geology a skyscraper built upon the sand?

Germany's KTB superdeep borehole

"Another hole drilled into the Earth's Crust was the KTB superdeep borehole (Kontinentales Tiefbohrprogramm de Bundesrepublik Deutschland or German Continental Deep Drilling Program). The results found here were even more

surprising. Firstly there is much more available data from the superdeep drilling and also it was carried out by Germans so you would expect everything to have been planned and modelled correctly. They had also reviewed the Russians attempt and results.” 4

Surprises - Some Welcome, Some Not
everythingselectric.com:

“...At a depth of about 7000 m (22,966 ft) they had expected to drill through the boundary between two tectonic plates that collided 320 millions years ago, forming the Eurasian plate. However, this boundary was never crossed, and the geologists have had to redraw most of the subsurface picture.

Other unexpected results include core and log evidence for a network of conductive pathways through highly resistive rock, and in rock devoid of matrix porosity, an ample supply of water.”

Where then is the Eurasian plate?

Germany's Superdeep Telescope into the Earth's Crust (pdf) 5

Fluids - “The scientists at KTB expected deep crystalline rock to be bone dry, but to their surprise, water influx occurred at several depths from open fractures.” 6

Thermal Studies - “...During the initial temperature mapping, KTB-VB held the unwelcome surprise that the formation temperature gradient was higher than anticipated. This disappointing result meant that 300C - the set limit of current technology - would be reached at about 10,000 m - much shallower than originally predicted.”

(page 18) The KTB Borehole - Germany's Superdeep Telescope into the Earth's Crust 7

The German borehole showed more or less the same pattern of misinterpretation of seismic reflections as did the Russian. One would expect an all-out effort to set the record straight, but this has not happened. Science is incapable of rectifying its own mistakes and usually ignores them or reasserts itself with self-justifying, blustering, hand waving exercises. But it is clear to all but the most hypnotised of the scientific true faithful that there is something seriously amiss within geology when all of its predictions are wrong.

The lecturer enters the room filled with students and bangs his lever arch notes onto his desk. His notes were probably given to him by his retired predecessor and the changes made by the two generations can be counted on one hand. Woe betide any student who dares to question what is contained within, words chiselled into the stone edifice that is geological theory for two or more hundred

years. Neither the contrary evidence from deep boreholes, nor Thomas Gold's petroleum theories that we will encounter below, will be discussed, as to do so would delay qualification, not to mention awkward questions for the lecturer. Geology unmindful, marches, oblivious to the stark realities of experiment and experience.

Coal and its Origins

Not too long ago, I found myself with a group of students in a coal mine. The somewhat uncomfortable tour had ended and we were waiting to ascend in the lift. A miner approached me and handed me a piece of coal. "Look at the pattern", he said. I nodded recognising regular undulations throughout the lump. "That pattern can be found in the coal throughout this mine and other mines have their own distinctive pattern." Taking the coal back he walked away, leaving me to wonder how coal, the result of buried plant matter, could have a uniform pattern throughout a whole seam? Such things do not appear in geology theory.

en.wiki explains:

"About 300 million years ago, the earth had dense forests in low-lying wetland areas. Due to natural processes such as flooding, these forests were buried under the soil. As more and more soil deposited over them, they were compressed. The temperature also rose as they sank deeper and deeper. For the process to continue, the plant matter was protected from biodegradation and oxidization, usually by mud or acidic water. This trapped the carbon in immense peat bogs that were eventually covered and deeply buried by sediments. Under high pressure and high temperature dead vegetation were slowly converted to coal. As coal contains mainly carbon, the conversion of dead vegetation into coal is called carbonization." 8

A theory dependent on soil and mud and sediments, but somehow the soil, mud and sediment disappears, leaving only coal as we will see shortly.

William Corliss

Coal.

"Two sorts of anomalies arise in the case of coal: (1) the large quantity of carbon locked up in coal deposits; and (2) the remarkable thickness of some coal deposits.

The carbon problem

"Our planet's immense inventory of coal, along with giant oil fields and, most important of all, carbonate rocks, constitute the so-called "carbon problem". Briefly, these minerals contain so much carbon that the earth's crust is anomalously enriched in this element with respect to the carbon inventory

expected in the primordial crust. The source of this "extra" carbon may be outgassing from deeply buried carbon. T. Gold's theories about the origins of methane, oil, and coal (See below) depend upon deep crustal sources of carbon. A less likely source of additional carbon, but one which must still be considered, is the influx of extraterrestrial debris in carbonaceous meteorites and comets."

Theories of coal and oil are at odds with the theory of carbon quantities.

The thickness problem.

Some coal beds are so thick (up to 800 feet in Australia) that it is difficult to imagine a succession of peat bogs, one atop the other, with no evidence of soil in between, that could account for such accumulations. This problem is made more acute by the great purity of many coals. When one finds very thick coal beds containing little ash, one has to wonder how the vegetation that supposedly ended up as coal ever grew in the first place. These thick coal strata challenge the in-situ theory of coal's origin."

Neglected Geological Anomalies, Large Sedimentary Deposits William R Corliss.

The sheer quantity of coal in the Earth's crust and the lack of soil do not auger well for geological theory.

Origin of Coal

Low mineral content of most coals.

"W. M. Williams, over a century ago, pointed out that true coal leaves only 0. 5-3% ash after complete combustion. He goes on to state:

"I state these figures because they have an important bearing on the interesting question of the origin or formation of coal. They demolish at once the prevailing theory that a coal seam is simply an ancient forest or a woodland marsh that has been submerged and buried where it stood.

No such forest, no such marshy woodland as we see so prettily displayed in the fancy pictures of the vegetation of the coal period could be formed without soil for the roots of the calamites, the sigilariae, the lepidodendra, the stigmariae, the ferns, &c. , to grow in. A single generation of such reeds and trees, if thus buried in-situ, would form but a few inches of coal; to produce a seam, many generations piled one above another are required, and each demands a soil. Conifera, such as described, cannot grow on the top of another, nor in the purely vegetable soil formed by the decay of their ancestors.

"The quantity of ash contained in our most abundant coals leaves absolutely nothing to represent the soil. The average amount of incombustible ash contained in the roots, stems, and leaves of forest trees, shrubs, and herbaceous plants is actually in excess of that found in ordinary coal. "

As we can see from the above, this problem was pointed-out a century ago, but such logical dilemmas have never presented any difficulty when a good theory is at stake.

"The above facts were not lost on T. Gold, who recently provided similar figures for the mineral content of the great coal measures: "Some coal seams are as much as 100 feet thick, and the mineral content may be as low as 4%. The bulk of the material is just carbon, with a little hydrogen, oxygen and sulphur mixed in various compounds. For a swamp to produce such a seam, it would need to have grown to a depth of 1000 feet, with a mineral content in that volume of less than 1 percent. No such swamps are recognized, and it seems unlikely that they could ever be created or that plants would grow in such circumstances. "

From: Anomalies in Geology, Physical, Chemical, Biological.

William R Corliss

The Ice Ages

en.wiki:

"An ice age, or more precisely, a glacial age, is a period of long-term reduction in the temperature of the Earth's surface and atmosphere, resulting in the presence or expansion of continental ice sheets, polar ice sheets and alpine glaciers. Within a long-term ice age, individual pulses of cold climate are termed "glacial periods" (or alternatively "glacials" or "glaciations" or colloquially as "ice age"), and intermittent warm periods are called "interglacial". Glaciologically, ice age implies the presence of extensive ice sheets in the northern and southern hemispheres. By this definition, we are still in the ice age that began 2.6 million years ago at the start of the Paleocene epoch, because the Greenland and Antarctic ice sheets still exist...

...There have been at least five major ice ages in the Earth's past (the Huronian, Cryogenian, Andean-Saharan, Karoo Ice Age and the Quaternary glaciation). Outside these ages, the Earth seems to have been ice-free even in high latitudes."

9

Although evidence of past glaciation cannot be denied, ice age theories assume the cause of extensive glaciation to be the result of low temperatures over an extended period. A major barrier arises in that the formation of such large quantities of ice requires energy and energy in the form of heat. The oceans must evaporate huge amounts of water that then needs to be transported to the northern regions - at a time of plummeting temperatures; a paradox.

This is not a recent flash of inspiration by the author but has been known by science for a hundred years or more; glaciation needs heat and the process is

hampered if not halted by cold. Temperatures may drop, but this only makes it cold and glaciation in the form of miles-thick ice sheets will not take place. It was pointed-out long ago, by someone who did the calculations, that the heat required to move the ice from the oceans to the polar regions is equal that of melting the same amount of iron. And to do this at a time of plummeting temperatures requires some serious rationalising on the part of science.

en.wiki:

Glacial period

"A glacial period (or alternatively glacial or glaciation) is an interval of time (thousands of years) within an ice age that is marked by colder temperatures and glacier advances. Interglacials, on the other hand, are periods of warmer climate within an ice age. The last glacial period ended about 15,000 years ago; The Holocene epoch is the current interglacial." 10

en.wiki:

"During the most recent North American glaciation, during the latter part of the Wisconsin Stage (26,000 to 13,300 years ago), ice sheets extended to about 45 degrees north latitude. These sheets were 3 to 4 km thick." 11

Science has not a clue as to what caused past ice ages but theories abound, all with their own problems. We can surely be excused when looking at such maps as the one on the next page, if we are tempted to think the unthinkable in scientific terms. The lack of glaciation in northern Asia and Alaska, within the present Arctic Circle during the previous ice ages would almost lead us to the conclusion that the present geographic pole itself had shifted from somewhere within the area indicated by the triangle or even further south.

Also, looking at the maps, it must be born in mind that the Atlantic around the previous polar area would also have been frozen and a line just south of Greenland will suffice for our purposes.

A shift in the position of the pole is not as fantastic as it sounds. I'm told by the astronomers that the poles of Mars have shifted and that past Martian polar regions now reside at the equator. Some have even suggested that our moon has swapped its pole position sometime in the past. They even have a name for this phenomenon - True Polar Wander or TPW or just plain Pole Shift.

This is not a shift of the entire globe, but a sliding of the crustal rock over the molten magma beneath, like the skin of an orange sliding around on the inner fruit, thereby maintaining the rotation axis of the bulk of the Earth's mass.

We are however, unlikely to see this theory introduced into the mainstream, as it has connotations of Velikovsky and several other catastrophists attached. Geology

having had few changes since the Victorian era and still very uniformitarian is loathe to consider such 'outlandish ideas' when applied to the Earth.

Record of several past Ice Ages

Extent of today's ice cover

If we follow the logic of polar shifting, we find that there is no real need to include theories of ice ages at all, as shifting the icecap around on the earth's surface will suffice.

Changes in ocean levels can then be explained by the difference in sea-level caused by moving the icecap off the land and into the ocean. The North American ice sheet is moved to the Arctic Ocean if the triangle (past polar position) is moved to the present pole, causing a rise in sea level by displacement.

Using various methods, Charles Hapgood in "The Path of the Pole" identified the locations of the paleopoles and their paths.

Position # 1 -- 63 degrees N, 135 degrees W (the Yukon area - 75,000 B.C.)

Position # 2 -- 72 degrees N, 10 degrees E (in the Greenland Sea - 50,000 B.C.)

Position # 3 -- 60 degrees N, 73 degrees W (the Hudson Bay area - 12,000 B.C.)

Position # 4 -- the current position 12

en.wiki:

"In 1958, (Charles Hutchins Hapgood (1904–1982) published 'The Earth's Shifting Crust' which denied the existence of continental drift and featured a foreword (an endorsement) by Albert Einstein.

(It is more than likely that Einstein was impressed by Hapgood's theory because a very similar historical scenario had been presented to him by Immanuel Velikovsky, a personal friend.)

In Maps of the Ancient Sea Kings (1966) and The Path of the Pole (1970), Hapgood proposed the hypothesis that the Earth's axis has shifted numerous times during geological history. In Maps of the Ancient Sea Kings he supported the suggestion made by Arlington Mallery that a part of the Piri Reis Map was a depiction of the area of Antarctica known as Queen Maud Land. He used this to propose that a 15 degree pole shift occurred around 9,600 BCE (approx. 11,600 years ago) and that a part of the Antarctic was ice-free at that time, and that an ice-age civilization could have mapped the coast. He concludes that "Antarctica was mapped when these parts were free of ice", taking that view that an Antarctic warm period coincided with the last ice age in the Northern hemisphere, and that the Piri Reis and other maps were based on "ancient" maps derived from ice-age originals. Later research concerning the palaeoclimatology and ice sheets of

Antarctica have completely discredited the interpretations by Hapgood that an Antarctic warm period coincided with the last ice age in the Northern hemisphere and any part of it had been ice-free at and prior to 9,600 BCE (approx. 11,600 years ago)." 13

I'm stunned at the complete misunderstanding of the Wiki writer, that a southern hemisphere warm period paleoclimate is required in order that Antarctica should become ice-free in the limited area shown on the Piri Reis Map. The basis of Hapgood's theory is a polar shift, that would not require an over-all climactic temperature-change. Part of the continent would have been in a warmer region leaving the rest still within the Antarctic Circle. The last southerly shift of the crust to the poles present position would have moved the area shown in the Piri Reis map towards the south pole and a more frigid climate.

It is also interesting that Albert Einstein was completely ignored in this respect.

Einstein and the Pole Shift 2012 Hoax

Albert Einstein did not support a rapid geographic pole shift

2012hoax.org:

I chose this web site as an example of the scientific opposition opinion and typical sceptical bias that says that the scientific version always gets priority. As we would expect, the argument is circular, using present dominant theory as if it were a sacred touchstone of truth:

The author of 2012hoax.org is trying, unsuccessfully, to debunk Hapgood for reasons inscrutable, because the mainstream which he supports has never given any credence, or even a second glance, at Hapgood's theories.

The author of 2012hoax tells us:

"In this (his second) letter to Hapgood, Einstein wrote that the idea of earth crust displacement should not be ruled out a priori, but also said that Hapgood needed solid "geological and palaeontological facts.""

He continues with Appeal to Authority

"Another problem for the Einstein 'endorsement' of the "Rapid Pole Shift" (RPS) idea is that it is essentially an appeal to authority: "Einstein was very smart, and he liked the "Rapid Pole Shift" theory, therefore the Rapid Pole Shift theory is correct."

Even if the second premise were correct (and we have shown that it is incorrect), and even if Einstein was a world-renowned authority on geology (which he wasn't) then the argument would still be a fallacious one, because, even as smart as he was, Einstein did not define the entire field of geology. Theories are not valid because they have big-name support, they are valid if (and only if) they

make testable predictions that are shown to be supported by evidence."

<http://www.2012hoax.org/einstein>

The geological facts (evidence) are hardly likely to be forthcoming in an academic scientific context, because pole shift is not an issue in plate tectonics and therefore will not be addressed. The writer knows this and he knows he is on safe ground.

He calls Einstein's endorsement 'an appeal to authority' when used by other authors supportive of Hapgood, when his own version is an appeal to geological science to prove something that obviously has not been proven for reasons of a seismic nature described above. The continental plates needed to support plate tectonics were not found at Kola, KTB or any other deep boring project. We therefore need an alternative explanation as to how the continents move.

He then admits, contrary to the point and the title of his article that: "In 1954 Einstein wrote a very favourable foreword for Hapgood's upcoming book (eventually published in 1958)".

Something that cannot be denied. He then uses the usual but tired 'qualification card', pulling out all the usual stops by telling us what we already know: That Einstein was not a geologist and that he had no right to pontificate on something for which he was not qualified, even though Alfred Wegener of Continental Drift theory fame was also not a geologist. The selective author of 2012hoax seems not to like multidisciplinary scientists.

Information via those who will support science come-what-may is loyal but it can be very unreliable.

The point of all of this is not a campaign in support of Charles Hapgood, but to point to the other protagonist who's record on prediction is without equal. It was Einstein's pal, Emmanuel Velikovsky, who originally suggested the idea to Einstein as a "rapid pole shift", something not mentioned at all by the writer at 2012hoax.

Alfred Wegener's Continental Drift

At the time when the theory of Continental Drift was being proposed, there was a second contender theory. Both were rejected by geologists of the day and it was some considerable time before it was agreed to embrace the idea of Continental Drift; even though the two theories were all but identical.

Alfred Wegener, an astronomer, became a meteorologist, earned his Ph.D. in astronomy in 1905. He addressed the Geological Association in Frankfurt with his paper, "The Formation of the Major Features of the Earth's Crust (Continents and Oceans)" in 1912. It was based on a theory by cartographer and geographer,

Abraham Ortelius¹⁴ dating back to the 1500's. Wegener published his theory of continental drift in "The Origin of Continents and Oceans" in 1915, the first of four books with the others following in 1920, 1922 and 1929. Wegener's theory was ignored or ridiculed until the 1950's, twenty years after his death. The objection to his idea was built around the lack of a force that could move the continents. 15

Expanding Earth

The 1950's parallel theory was that of an Expanding Earth, also not new, but championed by Samuel Warren Carey (1911-2002), Professor of Geology at the University of Tasmania from 1946 to 1976. This was also rejected because of the lack of a mechanism by which expansion could work. (Just like Continental Drift) It's interesting that the subduction element in Wegener's Continental Drift theory was also unexplained for many decades, but this theory eventually received acceptance.

Also of interest is the fact that a geologist was rejected by the geological community in favour of an astronomer/meteorologist; even more so considering the close affinity of the two theories.

All of the evidence supporting Continental Drift, now developed into Plate Tectonics, also supports the theory of Earth Expansion with subduction being the only deviation.

Although information about subduction is confidently offered, very little is known about this hypothesis, relying on seismic data that is often confused and uncertain as we see with the Kola and KTB superdeep boreholes above.

(Note: A persistent theme in these pages is that most of the major changes and revolutions in science are originally presented by scientists from other disciplines or even people from outside of academic science itself.)

Nature:

"Although never mentioned by most geologists these days, there is a plethora of evidence in favour of Earth Expansion. For example: one of the most compelling pieces of evidence is that the paleomagnetism of the continents seems to show that they have retained their relative positions over geological time-scales and had common polar wandering paths. In other words they are in the same relative position today as they were in the most remote geological times, something that is impossible if subduction occurs." 16 Stewart, AD, "The Expanding Earth" Nature

en.wiki:

"...Then during the early 1960s (Sir Edward "Teddy" Crisp Bullard FRS) (He was not a geophysicist) and his associates used a computer to try to fit all of the

continents together. Instead of using the shorelines, like other geophysicists had done, he used a depth of 2000 meters (6560 ft) below sea level. This depth corresponds to about halfway between the shoreline and the ocean basins and represents the true edge of the continents. By doing this he discovered a near perfect fit among the continents put together. With this discovery he helped further the idea of a supercontinent that earlier geophysicist, Alfred Wegener, had suggested calling (it) Pangaea." 17

"The name was coined during a 1927 symposium discussing (astronomer/meteorologist) Alfred Wegener's theory of continental drift. In his book *The Origin of Continents and Oceans* (Die Entstehung der Kontinente und Ozeane) first published in 1915, he postulated that all the continents had at one time formed a single supercontinent which he called the "Urkontinent", before later breaking up and drifting to their present locations." 18

The reader will note that the above supports the Earth Expansion every bit as much as it does Continental Drift, the Earth being smaller and thereby the continents closer together.

Science Frontiers

Geophysics: the sick man of science.

I just had to include this one and I hope that the late William Corliss will forgive me for copying it:

indiana.edu:

"In order to be a famed geo-scientist and belong to the inclusive club of fully accepted geophysicists in their unknown thousands, one must kneel on the hassock and swear allegiance to the following tenets regardless of any scientific considerations:

- * "Tenet 1. That the moment-of-inertia of the Earth has never changed.
- * "Tenet 2. That the Earth contains a large central core composed of iron.
- * "Tenet 3. That the continents are drifting as a result of unknown forces.

"These must be held with religious fervour, dissenters are just not to be tolerated, the devotees feeling it their right, and indeed duty, to defend the creed against all criticism by any means of chicanery and of sharp-practice within their power, however crude and improper, so long as they judge they can get away with it, but all the time representing themselves to the world as acting with judicial calm in the best interests of their science. It will be shown that all three of these tenets are wrong, and how their (naive) acceptance has hamstrung the believers from making progress in the deep waters of terrestrial science, though

not of course in the worldly world of 'modern science.' Shades of Sir Cyril Burt. 19

So begins a long technical article by R.A. Lyttleton, author of many scientific books and papers. (He may lose his union card after this paper!) Lyttleton proceeds to demonstrate the in-correctness of the first two tenets above. Lyttleton's reasoning is buttressed by many scientific observations and so much quantitative reasoning that it is impossible to encapsulate it all here. Suffice it to say that it all looks correct, serious, and above-board.

(Lyttleton, R.A.; "Geophysics: The Sick Man of Science," ISCDS Newsletter, 5:3, December 1984.)

Comment. Now this is interesting. The ISCDS is the International Stop Continental Drift Society, now defunct. The Society's Newsletter, if you don't already know, is usually a tongue-in-cheek publication. Not so here, Lyttleton is deadly serious. Either that or the joke is lost amid all the equations in the body of his paper!"

From Science Frontiers #38, MAR-APR 1985. 1985-2000 William R. Corliss 20

Petroleum, Origins and Thomas Gold

The basics of the dominant geological theory for the origin of (crude) oil (petroleum) are that it was originally derived from vast quantities of ancient fossilized organic materials, buried by sediment in ancient seas or lake bottoms. It is postulated that it then become subject to intense heat and pressure beneath layers of the earth's crust where a change in its chemistry took place. It became the liquid and gas used for energy and as such is classified as fossil fuel.

It's important to remember that this is only a theory and no such process has been found to occur within the modern Earth's crust. This gives rise to the notion that the oil reserves are finite which, in turn, leads to conclusions of future oil depletion, shortage and expensive fuel costs. 21

Abiogenic petroleum origin

Thomas Gold

en.wiki:

"Thomas Gold (May 22, 1920 – June 22, 2004) was an Austrian-born astrophysicist, a professor of astronomy at Cornell University, a member of the U.S. National Academy of Sciences, and a Fellow of the Royal Society (London). Gold was one of three young Cambridge scientists who in the 1950s proposed the now mostly abandoned 'steady state' hypothesis of the universe. Gold's work crossed academic and scientific boundaries, into biophysics, astronomy, aerospace engineering, and geophysics." 22

All of his non-standard work including that on oil origin has been rejected and

completely ignored by the mainstream. As we will see below, his ideas were vindicated but made no impact on geology. Even today, new ideas about about petroleum origins are vigorously opposed.

en.wiki:

"Supporters of the abiogenic hypothesis suggest that a great deal more petroleum exists on Earth than commonly thought, and that petroleum may originate from carbon-bearing fluids that migrate upward from the mantle." 23

rumormillnews.com:

"Gold maintains that these deposits are not fossil fuels in the normal sense, but the products of primordial hydrocarbons dating from the time of the Earth's formation. He claims that over the aeons the volatile gases migrate towards the surface through cracks in the crust, and either leak into the atmosphere as methane, become trapped in sub-surface gas fields, or are robbed of their hydrogen to become oil, tar or carbonaceous material like coal. In other words, these substances are formed from the bottom up, rather than the top down. It follows that there must be reserves of fuel vastly in excess of the quantities that the gas and petroleum industry estimates.

When Gold proposed this theory in the early 1980s, few scientists took him seriously. However, he did persuade the Swedish State Power Board to drill into a slab of granite fractured by an ancient meteor impact. Since oil is supposed to be found only in sedimentary rocks, it was a good test of Gold's theory. If gas is coming up from deep in the Earth, it might be expected to accumulate beneath the dense granite cap, and migrate slowly up through any fissures, perhaps turning into oil or tar. In the event, the prospectors did strike oil - about 12 tons of it. This was not enough to make the well commercially successful, but it did confirm that Gold was on to something.

It was not the Swedish oil that proved the most significant discovery though. Mixed in with the sludge at the bottom of the well, at a depth of over 6 km, was a large quantity of magnetite - a reduced form of iron oxide often associated with bacterial activity. After further investigation, Gold announced to the world that life exists not only on the surface of our planet but, in microbial form, deep inside the crust too.

The claim that the biosphere extends far underground was, if anything, even more heretical than the theory of upwelling hydrocarbons. At the time it was greeted with widespread scepticism. But I, for one, immediately found the basic idea plausible. As it happened, within a few years other researchers also obtained

evidence for deep-living microbes, not only beneath the land, but also under the sea bed. Soon, microbes were being extracted from deep bore holes and cultured in the laboratory. Today there is no doubt that the underworld teems with life, as Gold asserted all along, although the precise extent of this subterranean realm remains uncertain.” 24

The bottom line is that the source of oil is a mystery, but science cannot sanction mysteries, science prefers to work with mythological certainties.

Geology and education.

en.wiki:

"Geology is the science comprising the study of solid Earth, the rocks of which it is composed, and the processes by which it evolves. Geology gives insight into the history of the Earth, as it provides the primary evidence for plate tectonics, the evolutionary history of life, and past climates. In modern times, geology is commercially important for mineral and hydrocarbon exploration and for evaluating water resources; it is publicly important for the prediction and understanding of natural hazards, the remediation of environmental problems, and for providing insights into past climate change; plays a role in geotechnical engineering; and is a major academic discipline."

25

Geology is theorising. As we have seen, the discipline is based on outdated theory and refuses to evolve even with the benefit of direct experiment and experience.

The history of the Earth is based on a manufactured age that is convenient to geology and other branches of science and as we have also seen in a previous chapter, rocks are impossible to date.

The evidence for Earth's internal structure and plate tectonics are based on seismic data that is probably wrong, as is the evaluation of mineral resources like oil and coal.

The prediction of natural hazards, presumably referring in part to earthquakes, leaves much to be desired.

The lecturer closes his notes and the student achieves his qualification, elated, having become a scientist in a discipline that achieves very little.

Such is our science and education in which thinking for yourself is taboo.

Chapter 13

The Abominable Showmen of Evolution

"I am not very skeptical... a good deal of skepticism in a scientific man is advisable to avoid much loss of time, but I have met not a few men, who... have often thus been deterred from experiments or observations which would have proven servicable."

Charles Darwin

'I wish I were younger. What inclines me now to think you may be right in regarding it [evolution] as the central and radical lie in the whole web of falsehood that now governs our lives is not so much your arguments against it as the fanatical and twisted attitudes of its defenders.'

C.S Lewis.

The closed mind of the sceptic sees all criticism of evolution as being part of a religious conspiracy, a return to less enlightened days, a return to the dogma of medieval scholasticism. It never seems to occur to the universal doubter that the neo-Darwinist paradigm has become a dogma in itself. They need no religion because they already have one and its god is biology.

The Angry Evolutionist and the Abominable Coalman

newsweek.com:

A Newsweek headline declared: "More Americans believe in angels than in evolution and Richard Dawkins isn't going to take it any-more." 1

Richard Dawkins complains bitterly about those whom he calls Creationists (Creationists in this context being anyone who doubts, or encourages others to doubt the Theory of Biological Evolution, (ToE.)) and their largely correct observation that the fossil record has its most important evidence missing. This being the transition of creatures from one species to the next with a few intermediate fossils to prove the point. The bones just don't exist.

It is unfortunate that this is the basis of all of evolutionary theory, the rest of the so called proof is only proof if the missing evidence is taken for granted as Richard Dawkins obviously does.

It is necessary to believe that a gradual, random process of life's increasing complexity took place in order to support the extreme materialist, humanist, sceptical paradigm on which modern science is founded. Evolution is about the

need to not need a God and to a materialistic, deconstructive, atheist this is all that's needed; science or proven evidence are of secondary importance. But the evidence does not exist, and it is this that gives support to the concept that it's no more than an act of faith. No different from religious or 'creationist' ideals, the very ones to which the Dawkinsian camp is so opposed. In fact Dawkins states that "the evidence is unnecessary", it ought to be that way - totally at odds with accepted scientific method, but in agreement with all religious dogma. 2

Hume's is ought problem

It was Scottish philosopher and historian David Hume, who during eighteenth century, pointed-out the difference between is and ought to be,³ something that seems to be missing from Richard Dawkins education. There are numerous things that ought to be, but none is suitable as the basis for a science, if indeed evolution can be considered to be a science.

Dawkins continues: "What would be evidence against evolution, and very strong evidence at that, would be the discovery of even a single fossil in the wrong geological stratum. As J.B.S. Haldane famously retorted when asked to name an observation that would disprove the theory of evolution, "Fossil rabbits in the Precambrian!"... "But not a single solitary fossil has ever been found before it could have evolved." 4

Michael Cremo and Richard Thomson's book, 'Forbidden Archeology' runs to more than eight hundred pages, many of them detailing the very things that that Richard Dawkins claims do not exist. Hundreds, if not thousands of such out of place fossils, anomalous fossils, fossil footprints, and other out-of-place artefacts have been found. They have been quietly forgotten, lying in dusty museum basements, ignored or pseudo-debunked by the evolutionists who see them as a threat to scientific linearity and continuity, not to mention the threat to evolutionary theory itself. There is even a name for such artefacts, "OOPArt" or Out-of-place artefact, a term coined by Ivan T Sanderson many years ago.

Science, as a body, sanctions no input into OOPart's, just a blanket denial of anything that does not support its own version of history. This is a million miles from scientific approval or disapproval and in most cases it is just plain prejudice. OOPArts are regularly hand-waved away by using a meaningless, dictatorial, scientific, despotism that says that only the qualified and peer reviewed scientist can possibly be right. This assumes that everything about the historic and prehistoric is already known by academia and that the non academic amateur is incapable of assessing the validity of a find.

Again we see science knowing it all and rejecting the need for any outside input

when history clearly shows that there would be no modern science were it not for the input of amateurs.

It is never mentioned that acceptance of just some of the anomalous fossils would mean a radical reassessment of prehistory and evolution, something the academics will strive to avoid at all costs, something never considered in the field of an evolutionary science that is sacrosanct, inviolate.

A library of books have been written about anomalous archaeological finds like those of Cremona and Thompson already mentioned and the work of the late William R Corliss in his numerous catalogues and on his web site.^{5 6}

Dawkins obviously knows nothing of such books or alternatively he and other scientists are perpetrating a mammoth hoax based upon a desperate need to dominate our thinking.

Anomalous Palaeontology

Bones in Coal

Let us examine the realities of academic scholarship certainties:

Human bones in coal?

sciencefrontiers.com:

“Skulls and other human bones allegedly found in anthracite coal are on display in a museum in Pennsylvania. [Anthracite is a hard form of coal that burns with little flame and smoke.] Evolutionists believe this find is impossible because humans had not yet evolved when coal seams were formed. The display was reported in a newspaper in eastern Pennsylvania. The report said the Greater Hazelton Historical Society Museum had an elaborate display of petrified bones which were found between coal seams.” ⁷

The Abominable Coalman

britannica.com:

"One of the most famous of the Late Miocene fossils was the abominable coalman, so called because the best-preserved remains, a complete skeleton, were found during the 1950s in a lignite mine in northern Italy. *Oreopithecus* possessed a number of dental and bony characters that are typically hominid. The canines were relatively short and stout; the face was..." ⁸

The fossils above have been rationalised by claiming that the coal in which they were found is too old for hominid fossils which are geologically young, the oldest previously found being between 6 and 7 million years. A quote lower down these

pages gives a completely different scientific age for coal. 9

'Bad Archaeology' Website

badarchaeology.com:

"A jawbone, found at a depth of 183 m (600 feet) in a Tuscan coal mine, was identified by Dr Johannes Hürzeler of the Museum of Natural History in Basel (Switzerland) in 1958. It was badly distorted through its burial in the coal, but was sufficiently identifiable to enable it to be given an age at death of between five and seven. A number of biologists suggested that it belonged to a human ancestor, Hürzeler going so far as to claim it as "the world's oldest man", but this claim was not accepted by the overwhelming majority of palaeoanthropologist. It is now largely ignored as a potential ancestor. Creationists have taken this to mean that it was fully human, claiming it to be of modern morphology. This is nonsense: it belongs to a fossil primate, *Oreopithecus bamboli*, which flourished during the Miocene period, around twenty million years ago."

Bad Archaeology has a Miocene axe to grind:

"Bad Archaeology is the brainchild of a couple of archaeologists who are fed up with the distorted view of the past that passes for knowledge in popular culture. We are unhappy that books written by people with no knowledge of real archaeology dominate the shelves at respectable bookshops. We do not appreciate news programmes that talk about ley lines (for example) as if they are real.

In short, we are Angry Archaeologists." 10

They are, like Richard Dawkins, angry because there are so many people these days who have the temerity to question an unsatisfactory science. The Angry Archaeologists think that academic science should have the last word on everything and only their "real archaeology" be allowed in bookshops. They live in a Victorian world with schoolteachers who use the cane on dissenters. They throw-in ley lines to make it all a little woo woo and to discourage creationist credulity. Science becomes a secondary consideration in the face of a challenge to evolutionary linearity.

The Angry Archaeologists don't mention that the fossil *Oreopithecus bamboli* and many others like it are found in the fossil-rich lignite mine in the Baccinello Basin, Tuscany and in Sardinia. Lignite (coal) is said to have been laid-down during the Tertiary period some 65 million to 2.6 million years ago. The ape has been dated to about 8 million years ago. It would be interesting to know how it was dated since dating with coal is considered to be something of a lottery as we will see below - See Dr. Gove.

<http://www.ancient-wisdom.co.uk/ooparts.htm>

The Paluxy River tracks

Some of the most compelling fossil footprints of a human and a dinosaur were found at Paluxy River, Glen Rose TX, USA. We are spoiled for choice there are so many footprints in the area.

beg.utexas.edu:

“R. T. Bird, fossil collector for the American Museum of Natural History in New York, visited the track site and worked with E. H. Sellards (former director of the Bureau of Economic Geology and the Texas Memorial Museum) at The University of Texas at Austin to organize collection of the tracks. In 1940, three large areas of tracks were cut loose by workers employed by the Works Progress Administration (WPA), which provided employment to people who needed work during the Great Depression. One set of these tracks is conserved by the Texas Memorial Museum on The University of Texas at Austin campus. Other individual tracks went to Baylor University in Waco, Texas; Southern Methodist University in Dallas, Texas; the American Museum of Natural History in New York; the U.S. National Museum in Washington, D.C.; and Brooklyn College, New York. R. T. Bird carefully sketched the site and labeled the limestone blocks for reassembly.”

11

Compare:

forbiddenhistory.info:

“The following texts and pics are courtesy of the University of Vienna, on the Paluxy River (in Glen Rose, Texas) footprints: “

"The Paluxy River runs through Glen Rose, Texas. At the bottom of this river, there are thousands of layers of limestone. There was a bad flood in 1908 that ripped off 2 feet of solid rock. This rock was carried 20 miles downstream. This exposed thousands of dinosaur footprints. There were so many footprints that they decided to make the area into a State Park (Dinosaur Valley State Park). Many of the footprints were put into museums in order to be preserved, but there are still many there today.

Many human footprints were also found. Sometimes the human tracks were next to the dinosaur tracks. Several human footprints were found inside of the dinosaur footprints and some dinosaur footprints were found on top of the human footprints. The human strides were perfect.

Excavation of tracks show a compressed layer pattern underneath as one would

expect if they are genuine. A scientist who did not examine the evidence ruled out the possibility that the tracks were human. A professor of medicine from the University of Illinois examined the tracks and was convinced that they were genuine (CRSQ, 1970, 7:3, p.142; 1970, 7:4, p.246; Ryals, undated). Some years later at least some of the supposed human tracks were definitely shown to be dinosaur tracks. In the past 20 years many additional discoveries have been made to add to the controversy. Many books and articles treat these finds, both for and against their authenticity." 12

The Paluxy River tracks are a source of so much emotion and deliberate debunking that any unbiased evidence is virtually impossible to find. It is even claimed that the human footprints were sculpted out of the rock as a hoax to raise money. Many of the (claimed to be) scientific articles start with the words, 'Creationists claim that some of the Paluxy River footprints are human.'. This is part of the battle that goes on between science and religion, but is neither religious nor scientific.

It seems to be palaeontologist Roland T. Bird who was the first scientist involved in examining the tracks:

asa3.org:

"While working for the American Museum of Natural History in the late 1930's, Bird reported the presence of unusually elongated tracks among those of dinosaurs in the Paluxy River southwest of Ft. Worth (Bird, 1985). Primarily stated to keep high the interest of his benefactor Harry Sinclair (Bird, 1985; Godfrey & Cole, 1986; Farlow, 1987), Bird had no idea his words would be taken by creationist Clifford Burdick as a guarded admission that there were mantracks in addition to those of dinosaurs (Burdick, 1950). Bird saw all genuine fossilized tracks along the Paluxy as saurian, no matter how unusual, as he could account for the unusual ones through natural track distortion or through dinosaurs wading through deep water." 13

Bird would have been jobless had he even hinted at the possibility of the tracks being human... they can't be human if science is to stand, and this is the real problem. Academic science breaks-down when confronted with its own biases. The author has no idea if the human prints are genuine having not seen them or found any unbiased evidence one way or the other.

Smithsonian Acknowledges Problem? Well, kind of!

ancient-wisdom.co:

"In 1987, palaeontologist Jerry MacDonald discovered a wide variety of fossilized

tracks from several different species of animals and birds, located in a Permian strata. Among the various fossilized tracks were the clear prints of a human foot. However, the Permian strata has been dated from 290 to 248 million years ago—millions of years before animals, birds, dinosaurs, and yes, man, was supposed to exist. How then can these prints be explained?

In July 1992, the Smithsonian Magazine had an article on these tracks called "Petrified Footprints: A Puzzling Parade of Permian Beasts". The magazine acknowledged the mystery, acknowledging "what palaeontologists like to call, 'problematic.'" It described what appeared to be large mammal and bird tracks that, "evolved long after the Permian period, yet these tracks are clearly Permian."

While it is commendable that MacDonald and the Smithsonian clearly acknowledge the existence of these tracks in a strata that contradicts the current evolutionary theory, it is noteworthy that they highlight only the mammal and bird prints, and don't mention the human footprint found with them.

Interestingly enough, since these tracks been discovered, evolutionists have not tried to argue their authenticity or debunk them. Nor have they tried to argue that the footprint isn't human. (Often they claim that it's a print that just "looks like" a human footprint.) Their silence is deafening." 14

Out of place human footprints appear from all around the world and always debunked by academics. They are not alone, other types of artefact are plentiful, filling the pages of web sites and books.

The 'London' Hammer, Texas, USA:

ancient-wisdom.co.uk:

A find that is obviously a hammer has been found in Ordovician rock 488 to 443 million years old:

"It was soon pointed out by the geologist NCSE researcher John Cole that minerals dissolved from ancient strata can harden around a recent object, making it look impressive to someone unfamiliar with geological processes.

He said of it:

"The stone is real, and it looks impressive to someone unfamiliar with geological processes. How could a modern artefact be stuck in Ordovician rock? The answer is that the concretion itself is not Ordovician. Minerals in solution can harden around an intrusive object dropped in a crack or simply left on the ground if the source rock (in this case, reportedly Ordovician) is chemically soluble (Cole, 1985)." 15

"Intrusive object" is used regularly when out-of-place objects are found.

Some simple questions arise:

1. How can a "chemically soluble" (water soluble?) Ordovician rock persist for almost half a billion years without dissolving completely?
 2. What is the undisclosed secret that John Cole holds that tells him when a rock is genuine Ordovician or a concretion and why does he not tell us all, to prevent further mistakes?
 3. How many fossils, declared genuine by palaeontologists are petrified by this solution process?
 4. Supposing a concretion itself is millions of years old, how is it possible to tell?
 5. How were the Ordovician rocks or the fossils within them originally dated?
 6. If all fossils are contained within sedimentary rock that cannot be dated radiometrically, how can dates be assigned to fossils?
- It seems that the usual circular process is used, where guesses from the past are used as certainties of the present.

Get a Half Life

There are dates of a kind to be found in the study of radioactive decay with calculation of the half life of isotopes. (See the chapter on physics) This appears to be fine with pristine samples in the lab', but the samples taken from the sites of fossils are likely to be contaminated and the older they are the more likely the contamination. When we reach the four billion year mark the likelihood of total contamination is a certainty. Widely discordant dates are often obtained by these methods, but the final data presented by scientists often seems impressive. The reason for this is that only the dates deemed suitable to maintain the status quo are acceptable, all others are declared spurious, anomalous and discarded.

Contamination

The following little gem was found, in of all places, the Talk Origins Archive. The text was eventually changed to hide the original content. It speaks of C14 dating that makes coal appear to be older or younger, due to radioactive contamination:

talkorigins.org:

"Dr. Gove and his colleagues told me they think the evidence so far demonstrates that ^{14}C in coal and other fossil fuels is derived entirely from new production of ^{14}C by local radioactive decay of the uranium-thorium series. Many studies verify that coals vary widely in uranium-thorium content, and that this can result in inflated content of certain isotopes relevant to radiometric dating (such as ^{14}C). I now understand why fossil fuels are not routinely used in radiometric dating!"

Apparently it correlates best with the content of the natural radioactivity of the rocks surrounding the fossil fuels, particularly the neutron- and alpha-particle-emitting isotopes of the uranium-thorium series. I now understand why fossil fuels are not routinely used in radiometric dating!for the age of man?" 16

The above seems to be saying that coal may be quite young or it may even be old? It is certainly saying that C14 dating is unreliable in the case of coal, other fossil fuels and who knows what else. What does this mean for the age of the disputed bones above or any other bones? A young coal surrounded by an allegedly old strata is likely to cause problems that make palaeontologists angry.

I can only move-on, assuming that geological dates are not true or false in any normal usage of the words. They are true in as much as they are the convenient dates that scientists want and they are true in as much as they serve to bind together sciences such as geology, palaeontology and even solar system planetary dating. They do not however represent any kind of historical time, fact or reality.

17

The Stratigraphic Record

It must be remembered that coal is part of the geological record and the method of dating strata is by the fossils embedded in it. The fossils themselves are dated by the strata and so we have a completely circular system of dating, circularity being a common occurrence in science. Fossils cannot be dated by radiometric methods because they are found in sedimentary rock (which cannot be dated because it is made-up of various rocks of differing ages), and so there is no known method for dating fossils.

All the other more complex systems such as radiometric dating are calibrated by the circular method above with the exception of geologically recent datings that are checked by dendrochronology (tree-ring dating) and carbon14 dating where an actual artefact is used that already has an historical date for calibration. This is only good for two or three thousand years of recorded history. Calibration of, for example a 5 million year old sample is impossible because there is no sample known with anything like certainty to be 5 million years old.

Stratigraphy

Stratigraphy is the oldest method of dating:

en.wiki:

"One of stratigraphy's basic concepts is codified in the Law of Superposition, which simply states that, in an undeformed stratigraphic sequence, the oldest strata occur at the base of the sequence... (This is quite brilliant!)

...A gap or lacuna in the geological record may be caused by erosion, in which case it is called a vacuity, or by non-deposition, where (it) is known as a stratigraphic hiatus. It is called a hiatus because deposition was on hold for a period of time. A physical lacuna may represent both a period of non-deposition and a period of erosion. A fault may cause the appearance of a hiatus" 18

Thrust Fault

en.wiki:

"A thrust fault is a type of fault, or break in the Earth's crust across which there has been relative movement, in which rocks of lower stratigraphic position are pushed up and over higher strata. They are often recognized because they place older rocks above younger." 19 A thrust fault can turn the whole stratigraphic record upside-down.

Fossil Ages

en.wiki:

"Paleontology seeks to map out how living things have changed through time. A substantial hurdle to this aim is the difficulty of working out how old fossils are. Beds that preserve fossils typically lack the radioactive elements needed for radiometric dating. This technique is our only means of giving rocks greater than about 50 million years old an absolute age, and can be accurate to within 0.5% or better." 20

The paragraph above skips the serious problem of fossil age by mentioning the lack of radiometric elements in fossils and then jumping into the next sentence that tells us how accurate radiometric dating can be; a wonderful example of the 'circular method dating'.

The term "absolute age" is misleading as all radiometric dating is calibrated to fossil ages... that cannot be dated.

There is no entire or complete stratigraphic or fossil sequence in the world with which to compare or calibrate, and therefore no dates can be assigned. Even if there were such a perfect example it would not be possible to assign actual ages to the strata, just a sequence of events with the oldest at the bottom. Dates are guesses.

Scientific self-justification

nature.com:

"Science advances by testing hypotheses. The fossil record may be incomplete but it provides a valid independent test of phylogenetic hypotheses derived from character analysis. Surely even a poor test is better than no test at all?

Chris Paul, Department of Earth Sciences, University of Liverpool, UK" 21

Note: when science is in trouble, it invariably drops the 'know-it-all' and reverts to 'We are doing our best'. But, just like a number 62 bus, another know-it-all will be along soon.

All of the universe is changing and the earth is no exception. It is impossible to

use the 'scientific method' in such cases because reconstructions of the distant past are not possible on a changing Earth. There is no way to know what conditions were and so dates are guesses and not science.

Abiogenesis – first life on Earth.

Evolution has no start point. The date when the first cell arrived is totally unknown and 3.6 billion years for the emergence of the first life is a number thrown in just to make things neat and tidy, it being close to the conjectured 4.6 billion year theoretical age of the earth. Scientific dates for the age of the earth or the start of life have no more value than the 17th century Archbishop Ussher's chronology that puts the first day of creation at 4004 BC.

We need a temporary diversion at this point to examine how science arrived at the presently accepted age.

How it's done and why meteorites were used to date the Earth.

en.wiki:

"An age of $4.55 \pm 1.5\%$ billion years, very close to today's accepted age, was determined by C.C. Patterson using uranium-lead isotope dating (specifically lead-lead dating) on several meteorites including the Canyon Diablo meteorite and published in 1956.

The Canyon Diablo meteorite was used because it is a very large representative of a particularly rare type of meteorite that contains sulfide minerals... The quoted age of Earth is derived, in part, from the Canyon Diablo meteorite for several important reasons and is built upon a modern understanding of cosmochemistry built up over decades of research.

Most geological samples from Earth are unable to give a direct date of the formation of Earth from the solar nebula because Earth has undergone differentiation into the core, mantle, and crust, and this has then undergone a long history of mixing and unmixing of these sample reservoirs by plate tectonics, weathering and hydrothermal circulation.

The moon, as another extraterrestrial body that has not undergone plate tectonics and that has no atmosphere, provides quite precise age dates from the samples returned from the Apollo missions. Rocks returned from the moon have been dated at a maximum of around 4.4 and 4.5 billion years old. Martian meteorites that have landed upon Earth have also been dated to around 4.5 billion years old by lead-lead dating.²²

To arrive at this date several assumptions must be made:

1. That the Earth was formed from an accretion disk that circled the Sun: A theory that cannot be proved or disproved.

Examination of astronomical theories of the Solar System were shown to be wrong with the coming of the first NASA space probes. The accretion disk theory seems to have slipped through the net or is untestable, but probability says that it may also be wrong.

2. That the meteorite used for dating was in fact part of a Solar accretion disk.

3. That there was no lead in the meteorite when Earth formed: something impossible to prove.

4. See Lunar Anomalies, Moon rock ages are manipulated to fit-in with other preconceived ages.

5. That plate tectonics is a major cause of discordant dates for terrestrial samples: Plate tectonics theory depends upon seismic studies, shown to be unreliable. See the chapter on Geology.

6. The Moon: Theories regarding the origin of the moon change almost as quickly as the weather. The soil on which the moon-rocks stood was originally dated at over six billion years, but this has been rationalised to fit the plan.

7. That the rate of radioactive decay has been constant: We have seen in the chapter on physics that there is reason to believe that it has not, and that it varies according to the time of year and presumably with the age of the Sun.

The scientific age of the Earth is dependant on theory supporting theory and then assuming the outcome to be fact. In this case just about every conceivable theory is involved, but this is how science works and the reason there is so much doubt.

Selective dating

Science Against Evolution

scienceagainstevolution.org:

"Last month we saw that rubidium-strontium isochron dating of the Apollo 11 moon rocks showed that the moon is 4.3 to 4.56 billion years old. That method depends upon an unwarranted assumption about the initial concentrations of rubidium and strontium isotopes. This month we want to compare that age with ages other qualified scientists found using other techniques.

Scientists computed the age of the Apollo 11 moon rocks 116 times using methods other than rubidium-strontium isochron dating. Of those 116 dates, only 10 of them fall in the range of 4.3 to 4.56 billion years, and 106 don't. The non-isochron dates range from 40 million years to 8.2 billion years." 23

Selectively fishing for dates that fit.

Lists of the actual measurements made by scientists are shown on the web site.

Back to Abiogenesis

The supposed first cell having arrived, it is completely unknown how the first steps towards the cell developing into a multi-celled entity came about. Evolution requires additional new DNA although any changes to a first single cell, with just the basic genetic ability to feed and divide are likely to have proved fatal.

There is no known or acceptable conjectured method by which the first cellular life could have obtained the needed extra genetic material. This was pointed out in the work of Fred Hoyle and Susumu Ohno many years ago. There is no explanation as to how evolution started.

It is interesting that Fred Hoyle did suggest a possible method whereby a source of genetic material may have been available for use by the earliest life, but as with all logical suggested improvements to the basic evolutionary theory it was rejected by the evolutionists. A plentiful supply of genetic material in the form of viruses, which is what Hoyle offered, would mean changes to evolutionary theory and that is the last thing the faithful want. The sacred holy writ of evolutionary biology is written in letters of fire. 24

Panspermia

en.wiki:

"With Chandra Wickramasinghe, Hoyle promoted the theory that the first life on Earth began in space, spreading through the universe via panspermia, and that evolution on earth is influenced by a steady influx of viruses arriving via comets.

Published in his 1982/1984 books *Evolution from Space* (co-authored with Chandra Wickramasinghe), Hoyle calculated that the chance of obtaining the required set of enzymes for even the simplest living cell without panspermia was one in 10 to the 40,000. Since the number of atoms in the known universe is infinitesimally tiny by comparison (10 to the 80), he argued that Earth as life's place of origin could be ruled out.

He claimed:

The notion that not only the biopolymer but the operating program of a living cell could be arrived at by chance in a primordial organic soup here on the Earth is evidently nonsense of a high order.

Hoyle compared the random emergence of even the simplest cell without panspermia to the likelihood that "a tornado sweeping through a junk-yard might assemble a Boeing 747 from the materials therein." Hoyle also compared the chance of obtaining even a single functioning protein by chance combination of amino acids to a solar system full of blind men solving Rubik's Cubes simultaneously."

This is the same argument as the one at Wistar, with opposing mathematicians and biologists. Hoyle of course, was metaphorically burned at the stake by the evolutionists for having the audacity to encroach on their territory. But, they had no ideas of their own and Hoyle's is at least a logical theory. Logic is expelled with the usual academic hubris.

Spontaneous Generation of life

The idea, first championed by Louis Pasteur, that life cannot spontaneously arise from non-living matter contains a deep seated paradox for science, in that life must have spontaneously arisen at least once or there would be no life on Earth. And so we have a religious idea supporting a literalistic, materialist, atheist theory, that only on one occasion has life arisen on earth, all of the present biosphere originating from the first simple single cell in a muddy pool, or at a volcanic vent under the ocean, or maybe in a warm nutritious environment below the earth's surface. Wherever the event was staged it amounts to the same conclusion: that the original religious creationist Genesis has been usurped by materialist science and presented as a literal fact to an all too-willing, but atheist audience. Let there be light.

Spontaneous generation of life was rejected by science. The panspermia theory (life from space) was also rejected by science with the claim that it puts the problem of life's origin elsewhere and therefore does not answer the question of life's genesis. 25 But at the same time the spontaneous generation is supported by abiogenesis that makes the same claim that life was generated spontaneously on earth in a remote era billions of years ago.

The origin of life on Earth is a problem that has no scientific answers. 26

How Evolution Stays Alive

by Richard Milton

Scientific Censorship and Evolution

"The article below was commissioned in February 1995 by the British weekly newspaper, Times Higher Education Supplement to appear in March 1995. It has been censored because it challenges, scientifically, the empirical foundations of the neo-Darwinist theory of evolution.

The article was "spiked" by the THES Following a campaign against it by Richard Dawkins, (then) of Oxford University.

In the interests of freedom of speech, and so that such attempts at censorship cannot succeed, I am placing the article in the public domain without copyright restriction and am posting it as widely as possible on the Internet. I also attach a

copy of my letter to the editor of the Times Higher Education Supplement saying why I believe this article should be published.

I believe there is an issue of scientific censorship involved here that affects us all equally -- even if you disagree with the conclusions in my article.”

Auriol Stevens
Editor
Times Higher Education Supplement
Admiral House
66-68 East Smithfield
London E1 9XY

16 March 1995

Dear Ms Stevens,

I know that my article on the decline of the neo-Darwinist theory of evolution has caused some controversy and is bound, if published, to cause even more. May I draw your attention to two points that I believe are important?”

The first is that it has been said, by some scientists, that I am a secret creationist opposed to neo-Darwinism for religious reasons. I am not a creationist and my criticisms of the neo- Darwinist mechanism are purely scientific objections -- as any reading of the article itself clearly shows.

The second point is far more important. I believe that the great strength of science and the scientific method is its openness to debate. Science is strong because errors are exposed through the process of open argument and counter-argument. Science does not need vigilante scientists to guard the gates against heretics. If the heresy is true it will become accepted. If false, it will be shown to be false, by rational discourse.

In his "The Open Society and its Enemies" Sir Karl Popper says that the great value of the scientific method is that it saves us from "The tyranny of opinion". If neo-Darwinists can counter the evidence I present, let them do so. If they seek to prevent my writing being published because they don't like it, then it is not just I that fall victim to the "tyranny of opinion", it is all of us.

If this article were about any other subject -- finance, politics, the economy -- I know it would be welcomed as well- written and thought-provoking even if its claims were controversial. It is only because it is about neo-Darwinism, a subject on which some biologists feel insecure and ultra- sensitive, that doubts have been

raised about it.

Best wishes

Yours sincerely

Richard Milton”

(Note: All of science is called consensus opinion)

Neo-Darwinism: time to reconsider

By Richard Milton

“It was the dazzling gains made by science and technology in the nineteenth century through the application of rational analysis that led people to think of applying reason to other fields.

Following the brilliant success of reason and method in physics and chemistry -- especially in medicine -- it was natural for science to seek to apply the same analytical tool to the most intractable and complex problems: human society and economic affairs; human psychology; and even the origin and development of life itself. The result was the great mechanistic philosophies of the last century: Marxism, Freudianism and Darwinism.

The simplicities and certainties of these systems mirrored the intellectually well-ordered life of Victorian society with its authoritarian values and institutionalised prejudices. Now, a century later, all three systems have run their course, have been measured by history, and have been ultimately found to be inadequate tools of explanation.

Unlike Marx and Freud, Darwin himself remains esteemed both as a highly original thinker and as a careful researcher (his study of fossil barnacles remains a text book example for palaeontologists). But the theory that bears his name was transformed in the early years of this century into the mechanistic, reductionist theory of neo-Darwinism: the theory that living creatures are machines whose only goal is genetic replication -- a matter of chemistry and statistics; or, in the words of professor Jacques Monod, director of the Pasteur Institute, a matter only of "chance and necessity". [1]

And while the evidence for evolution itself remains persuasive -- especially the homologies that are found in comparative anatomy and molecular biology of many different species -- much of the empirical evidence that was formerly believed to support the neo-Darwinian mechanism of chance mutation coupled

with natural selection has melted away like snow on a spring morning, through better observation and more careful analysis.

Marxist, Freudian and neo-Darwinist systems of thought ultimately failed for the same reason; that they sought to use mechanistic reductionism to explain and predict systems that we now know are complexity-related, and cannot be explained as the sum of the parts.

In the case of neo-Darwinism, it was not the mysteries of the mind or of the economy that were explained. It was the origin of the first single-celled organism in the primeval oceans, and its development into the plant and animal kingdoms of today by a strictly blind process of chance genetic mutation working with natural selection.

In the first five decades of this century -- the heyday of the theory -- zoologists, palaeontologists and comparative anatomists assembled the impressive exhibits that generations of school children have seen in Natural History Museums the world over: the evolution of the horse family; the fossils that illustrate the transition from fish to amphibian to reptile to mammal; and the discovery of astonishing extinct species such as "Archaeopteryx", apparently half-reptile, half-bird.

Over successive decades, these exhibits have been first disputed, then downgraded, and finally shunted off to obscure museum basements, as further research has shown them to be flawed or misconceived.

Anyone educated in a western country in the last forty years will recall being shown a chart of the evolution of the horse from "Eohippus", a small dog-like creature in the Eocene period 50 million years ago, to "Mesohippus", a sheep-sized animal of 30 million years ago, eventually to "Dinohippus", the size of a Shetland pony. This chart was drawn in 1950 by Harvard's professor of palaeontology George Simpson, to accompany his standard text book, "Horses", which encapsulated all the research done by the American Museum of Natural History in the previous half century.

Simpson plainly believed that his evidence was incontrovertible because he wrote, 'The history of the horse family is still one of the clearest and most convincing for showing that organisms really have evolved. . . There really is no point nowadays in continuing to collect and to study fossils simply to determine whether or not evolution is a fact. The question has been decisively answered in the affirmative.'

[2]

Yet shortly after this affirmation, Simpson admits in passing that the chart he has drawn contains major gaps that he has not included: a gap before "Eohippus" and its unknown ancestors, for example, and another gap after "Eohippus" and before its supposed descendant "Mesohippus". [3] What is it, scientifically, that connects these isolated species on the famous chart if it is not fossil remains? And how could such unconnected examples demonstrate either genetic mutation or natural selection? Even though, today, the bones themselves have been relegated to the basement, the famous chart with its unproven continuity still appears in museum displays and handbooks, text books, encyclopaedias and lectures.

The remarkable "Archaeopteryx" also seems at first glance to bear out the neo-Darwinian concept of birds having evolved from small reptiles (the candidate most favoured by neo-Darwinists is a small agile dinosaur called a Coelosaur, and this is the explanation offered by most text books and museums.) Actually, such a descent is impossible because coelosaur, in common with most other dinosaurs, did not possess collar bones while "Archaeopteryx", like all birds, has a modified collar bone to support its pectoral muscles. [4] Again, how can an isolated fossil, however remarkable, provide evidence of beneficial mutation or natural selection?

Neo-Darwinists were quick to claim that modern discoveries of molecular biology supported their theory. They said, for example, that if you analyse the DNA, the genetic blueprint, of plants and animals you find how closely or distantly they are related. That studying DNA sequences enables you to draw up the precise family tree of all living things and show how they are related by common ancestry.

This is a very important claim and central to the theory. If true, it would mean that animals neo-Darwinists say are closely related, such as two reptiles, would have greater similarity in their DNA than animals that are not so closely related, such as a reptile and a bird.

In 1981, molecular biologists working under Dr Morris Goodman at Ann Arbor University decided to test this hypothesis. They took the alpha haemoglobin DNA of two reptiles -- a snake and a crocodile -- which are said by Darwinists to be closely related, and the haemoglobin DNA of a bird, in this case a farmyard chicken.

They found that the two animals who had least DNA sequences in common were the two reptiles, the snake and the crocodile. They had only around 5% of DNA sequences in common -- only one twentieth of their haemoglobin DNA. The

two creatures whose DNA was closest were the crocodile and the chicken, where there were 17.5% of sequences in common -- nearly one fifth. The actual DNA similarities were the reverse of that predicted by neo- Darwinism. [5]

Even more baffling is the fact that radically different genetic coding can give rise to animals that look outwardly very similar and exhibit similar behaviour, while creatures that look and behave completely differently can have much in common genetically. There are, for instance, more than 3,000 species of frogs, all of which look superficially the same. But there is a greater variation of DNA between them than there is between the bat and the blue whale.

Further, if neo-Darwinist evolutionary ideas of gradual genetic change were true, then one would expect to find that simple organisms have simple DNA and complex organisms have complex DNA. In some cases, this is true. The simple nematode worm is a favourite subject of laboratory study because its DNA contains a mere 1,000 nucleotide bases. At the other end of the complexity scale, humans have 23 chromosomes which in total contain 3,000 million nucleotide bases.

Unfortunately, this promisingly Darwinian progression is contradicted by many counter examples. While human DNA is contained in 23 pairs of chromosomes, the humble goldfish has more than twice as many, at 47. The even humbler garden snail -- not much more than a glob of slime in a shell -- has 27 chromosomes. Some species of rose bush have 56 chromosomes. So the simple fact is that DNA analysis does not confirm neo- Darwinist theory. In the laboratory, DNA analysis falsifies neo- Darwinist theory.

An even more damaging blow to the theory was the discovery that the very centrepiece of neo-Darwinism, Darwin's original conception of natural selection, or the survival of the fittest, is fatally flawed. The problem is: how can biologists (or anyone else) tell what characteristics constitute the animal or plant's 'fitness' to survive? How can you tell which are the fit animals and plants? The answer is that the only way to define the fit is by means of a post-hoc rationalization -- the fit must be "those who survived". While the only way to characterize uniquely those who survive is as "the fit". The central proposition of the Darwinian argument turns out to be an empty tautology. C.H. Waddington, professor of biology at Edinburgh University wrote; "Natural selection, which was at first considered as though it were a hypothesis that was in need of experimental or observational confirmation, turns out on closer inspection to be a tautology, a statement of an inevitable although previously unrecognised relation. It states that the fittest individuals in a population (defined as those who leave the most

offspring) will leave most offspring. Once the statement is made, its truth is apparent." [6]

George Simpson, professor of palaeontology at Harvard, sought to restore content to the idea of natural selection by saying; "If genetically red-haired parents have, on average, a large(r) proportion of children than blondes or brunettes, then evolution will be in the direction of red hair. If genetically left-handed people have more children, evolution will be towards left-handedness. The characteristics themselves do not directly matter at all. All that matters is who leaves more descendants over the generations. Natural selection favours fitness only if you define fitness as leaving more descendants. In fact geneticists do define it that way, which maybe confusing to others. To a geneticist, fitness has nothing to do with health, strength, good looks, or anything but effectiveness in breeding."

Notice the words; "The characteristics themselves do not directly matter at all." This innocent phrase fatally undermines Darwin's original key conception: that each animal's special physical characteristics are what makes it fit to survive: the giraffe's long neck, the eagle's keen eye, or the cheetah's 60 mile-an-hour sprint.

Simpson's reformulation means all this must be dropped: it is not the characteristics that directly matter -- it is the animals' capacity to reproduce themselves. The race is not to the swift, after all, but merely to the prolific. So how can neo-Darwinism explain the enormous diversity of characteristics? Not only are neo-Darwinist ideas falsified by empirical research, but other puzzling and extraordinary findings have come to light in recent decades, suggesting that evolution is not blind but rather is in some unknown way directed. The experiments of Cairns at Harvard and Hall at Rochester University suggest that micro-organisms can mutate in a way that is beneficial. [8]

Experiments with tobacco plants and flax demonstrate genetic change through the effects of fertilizers alone. [9] Experiments with sea squirts and salamanders as long ago as the 1920s appeared to demonstrate the inheritance of acquired characteristics. [10] Moreover, as Sir Fred Hoyle has pointed out, Fossil micro-organisms have been found in meteorites, indicating that life is universal -- not a lucky break in the primeval soup. This view is shared by Sir Francis Crick, co-discoverer of the function of DNA [11]

In the light of discoveries of this kind, the received wisdom of neo-Darwinism is no longer received so uncritically. A new generation of biologists is subjecting the theory to the cold light of empirical investigation and finding it inadequate;

scientists like Dr Rupert Sheldrake, Dr Brian Goodwin, professor of biology at the Open University and Dr Peter Saunders, professor of mathematics at King's College London.

Not surprisingly, the work of this new generation is heresy to the old. When Rupert Sheldrake's book "A New Science of Life" with its revolutionary theory of morphic resonance was published in 1981, the editor of "Nature" magazine, John Maddox, ran an editorial calling for the book to be burned -- a sure sign that Sheldrake is onto something important, many will think. [12, 13] The current mood in biology was summed up recently by Sheldrake as, 'Rather like working in Russia under Brezhnev. Many biologists have one set of beliefs at work, their official beliefs, and another set, their real beliefs, which they can speak openly about only among friends. They may treat living things as mechanical in the laboratory but when they go home they don't treat their families as inanimate machines.' It is a strange aspect of science in the twentieth century that while physics has had to submit to the indignity of a principle of uncertainty and physicists have become accustomed to such strange entities as matter-waves and virtual particles, many of their colleagues down the corridor in biology seem not to have noticed the revolution of quantum electrodynamics. As far as many biologists are concerned, matter is made of billiard balls which collide with Newtonian certainty, and they carry on building molecular models out of coloured table-tennis balls. One of the twentieth century's most distinguished scientists and Nobel laureates, physicist Max Planck, observed that; 'A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it.'

It may be another decade or more before such a new generation grows up and restores intellectual rigour to the study of evolutionary biology." 27

Richard Milton is a science writer and journalist. He is the author of "The Facts of Life" (Transworld/Corgi, London, 1993) a critical review of neo-Darwinism and "Forbidden Science" (Fourth Estate, London, 1994) a critical analysis of censorship and intolerance in science.

Human Evolution

The tens of millions and even billions of years appropriated by science for bio-evolution runs into a serious problem when confronted with that of human evolution:

en.wiki:

"The earliest known remains of Cro-Magnon-like humans are dated to 30,000 radiocarbon years." 28

historyworld.net:

"The first traces of modern humans are now dated tentatively as far back as 90,000 years ago in the Middle East. (But no bones, and similar finds in the New World are denied simply because they contradict the preconceived plan.)

In Europe, where they first appear about 35,000 years ago, they are known as Cro-Magnon from the place in the Dordogne, in France, where remains of them are first discovered in a cave in 1868." 29

Cro-Magnon is a word used by science to describe modern humans who had a bone structure just like ours. We just appeared, all of our ancestors being apes, a complete restructure of bones, soft tissue, hair and brain took place. No trail of bones for Darwinian detectives to follow as the scent disappears at about 30,000 years ago. After another 25,000 years, we find that cities were being built with all-mod-cons.

Modern humans just appear on earth fully formed and begin the process of civilisation almost immediately in geological terms. Without the need for the huge time-scales attributed to other mammalian evolution and no sign of even one similar predecessor with a human bone structure. This should be a problem for science, but it's ignored because we had to evolve in the way that all other mammals evolved - it has to be...because science says so, even when faced with zero evidence. Most astonishingly, only one theory is dominant - that we evolved in a very short time from an ape that was completely different to a human being. There is no (scientific consensus) theory for abrupt radical change in biological evolution.

Hume's Guillotine again

From Wikipedia, the 'Is-ought problem' of David Hume (1711-1776) Scottish philosopher and historian:

"Hume calls for caution against such inferences in the absence of any explanation of how the ought-statements follow from the is-statements. But how exactly can an "ought" be derived from an "is"? In other words, given knowledge of the way the world is, how can one know the way the world ought to be? The question, prompted by Hume's small paragraph, has become one of the central questions of ethical theory and Hume is usually assigned the position that such a derivation is impossible. This complete severing of "is" from "ought" has been given the graphic designation of "Hume's Guillotine".

30

And yet the evolutionists regularly tell us that this unseen evidence that Richard Dawkins says is unimportant "ought to be", because evolution 'is'.

Wistar
pathlights.com:

A series of symposia were held at the Wistar Centre at the University of Pennsylvania starting in the 1960's where a large group of scientists gathered to debate the mathematics of evolution, or not. Pathlights is unashamedly a creationist site and it seems that someone clandestinely tape-recorded the proceedings. Creationists do their homework at times even though their work is declared worthless by neo-Darwinists. What is presented here is what happened at the symposium. None of the attendees, as far as I know, has ever denied the authenticity of what was said to be discussed. It seems however that all have recanted and they now keep their doubts to themselves. The text is extensive and readers are encouraged to read it for themselves. 31 Ted Holden gives a good insight into the proceedings:

Ted Holden and Wistar
bearfabrique.org:

Ted is a hero, having used the Internet medium from its inception to voice his doubts about the dubious science to which we are all subjected.

Wistar

"Most people assume that a dialectic exists between the paradigm of evolution and deep time on one side, and religion on the other. That is basically wrong. The dialectic is between evolution(ism) and other branches of science, particularly mathematics and probability theory. In the mid 1960s when computers capable of analyzing the math and probabilities involved in evolution became available a series of symposia were held at the Wistar center at the University of Pennsylvania and a non-meeting of the minds ensued involving evolutionary biologists on one side and mathematicians on the other, and both sides left with the feeling that the other was in some sort of denial.

The biggest group of people who do not believe in evolution is probably mathematicians, and not Christians." 32

Evolutionary Rationale

The theory of evolution is presented by evolutionists as if it were an undisputed scientific fact. Alternate theories are not even considered, all being downgraded to what evolutionists call 'creationism' - 'if you don't swallow evolution hook-line-and-sinker you must be a creationist.' This is evolutionist logic at its finest; scientifically based objections are rejected, which in effect disqualifies the ToE as a theory.

In the UK, not one TV program has ever been screened that presents objections, of which there are many. This is in the face of TV guidelines that insist the programming be balanced. Programmers are scared of the backlash from scientists and so, no one gets the opportunity to look at any facts that are not supportive of the theory. Non-supportive facts are unacceptable and are rejected as unscientific, this is the way that the ToE maintains its credibility. Not with scientifically verified research and experiment, but with dogma, just like the creationist religiosity that evolutionists so vehemently reject. The evolutionary credo is something that every scientist is required to chant as a kind of self-hypnosis to evoke Hoyle's "sick minds".

The hypnosis of evolutionary science is not even restricted to science and has become acceptable to many of the major western Christian religious groups. A ridiculous situation where the freely admitted materialistic and atheistic views of science have come to be embraced by Christians, as if the secrets of God's natural world are only divulged by Him to those who clearly don't believe in Him. Christianity has become as institutionalised as the science to which it submits. Once again logic is sacrificed on the funeral pyre of scientific rationality.

Everything that science does has to correspond with everything it has done and so an erroneous link in the chain affects every other link. The rationale is that new ideas come from the sum total of recorded scientific knowledge. It's like asking someone to invent a new word by searching in a dictionary.

Medical science is no exception and evolutionary theory plays a large role in the treatment received from the doctor. If he or she fails to find a cure for your complaint, it's probably because the doctor sees you as a 'trousered ape' and the result of several million years of evolutionary development, rather than a human being. The idea of a doctor being a healer has long since passed into the realms of alternative medicine and New Age treatment. Scientific medicine sees us all as some kind of biological machines, a left-over from Victorian times minus the cogs in the head and this as a direct result of ToE reductionism.

All of this is very confusing to those who have gone through any kind of scientific education, but there is supposedly a bottom line:

The bottom line says that we can be smart and believe what science tells us; after all, there are mythical, super-intelligent professors who have figured everything out. Or, we can be ignorant and believe what the Bible tells us. It is very old, and science says that old things are unreliable because they were not written according to scientific method or peer reviewed.

Not much of a choice there, some would say.

The trouble with this reasoning is that it's not the bottom line at all. The real bottom line is to reject the mythical counterintuitive of both science and religion and start thinking for yourself. It's at this point that you start to get some real answers. 33

"The Missing Link"

"A "missing link" between humans and their apelike ancestors has been discovered."

By Richard Gray, Science Correspondent

9:00PM BST 03 Apr 2010

The Telegraph

telegraph.co.uk:

"The new species of hominid, the evolutionary branch of primates that includes humans, is to be revealed when the two-million-year-old skeleton of a child is unveiled this week.

Scientists believe the almost-complete fossilised skeleton belonged to a previously-unknown type of early human ancestor that may have been an intermediate stage as ape-men evolved into the first species of advanced humans, *Homo habilis*.

Experts who have seen the skeleton say it shares characteristics with *Homo habilis*, whose emergence 2.5 million years ago is seen as a key stage in the evolution of our species.

The new discovery could help to rewrite the history of human evolution by filling in crucial gaps in the scientific knowledge.

Most fossilised hominid remains are little more than scattered fragments of bone, so the discovery of an almost-complete skeleton will allow scientists to answer key questions about what our early ancestors looked like and when they began walking upright on two legs." 34

Homo Habilis

Wiki:

"*Homo habilis* (or possibly *H. rudolfensis*) is the earliest known species of the genus *Homo*. In its appearance and morphology, *H. habilis* is thus the least similar to modern humans of all species in the genus (except possibly *H. rudolfensis*). *H. habilis* was short and had disproportionately long arms compared to modern humans;" 35

Support given to inappropriate evidence, by the press who seem to assume that it

is their duty to mislead the public with announcements that support the evolution paradigm. This is not a link between man and ape, but an extinct species of ape that looks much like any other extinct species of ape. We need to ask ourselves if the press is totally ignorant of such things? If the answer is no, then we must ask why a theory that has been in place for so long needs to be supported by bogus emotional evidence?

talkorigins.org:

Richard Milton again:

"Show me a fossil that has feet, teeth and skull posture halfway between an ape's and a human's and I'll be very interested to see it. Show me a sequence of fossils with progressive development of these three criteria from a sequence of securely dated rock strata and I'll be willing to accept that there is evidence for an ape-human transition. So far no-one has found a single such fossil. Of course, I accept that doesn't mean that such fossils will not one day be found, but that is not the point I am making. The point I am making is that some Darwinists are so mesmerised by their ideological beliefs that they were willing to make scientific claims that are not borne out by observation and measurement and this makes their 'missing link' claims nothing more than scientific urban myths."

Regards

Richard Milton. 36

I hope that the reader is starting to get the picture at this stage. What must be noted in the exchange above is the use of fossil evidence, by evolutionists as if it were cut and dried fact, which it certainly is not and no scientist worth the title has ever claimed it to be so. These 'assumptions' are then incorporated into intellectualisations and take on a life of their own, a life unconnected to the reality of the argument but giving the impression of being a solid, literal, scholarly fact. It is therefore necessary to have a prior belief in evolution as a fact, in order to accept the non-evidence that supports it. This is of course totally illogical, but far from unusual in a science that claims evidence to be paramount.

Darwin was wrong

Evolution is not just offensive to fundamental Christians, mathematicians and those who think it unscientific:

narth.com:

seedmagazine.com:

Joan Roughgarden, a transsexual male biology professor says Darwin was wrong about sexual selection.

"I was just stunned by the sheer magnitude of the LGBT [Lesbian, Gay, Bisexual,

Transgender] population. Because I'm a biologist, I started asking myself some difficult questions.

My discipline teaches that homosexuality is some sort of anomaly. But if the purpose of sexual contact is just reproduction, as Darwin believed, then why do all these gay people exist? A lot of biologists assume that they are somehow defective, that some developmental error or environmental influence has misdirected their sexual orientation. If so, gay and lesbian people are a mistake that should have been corrected a long time ago. But this hasn't happened. That's when I had my epiphany. When scientific theory says some-thing's wrong with so many people, perhaps the theory is wrong, not the people." 37

Posted on: April 5, 2010 8:58 AM, by Jonah Lehrer.

scienceblogs.com:

"Jon Mooallem had a really interesting article in the Times Magazine yesterday. It reviewed some recent research on animal "homosexuality," with an emphasis on scientists who argue that same-sex behavior is not a single adaptation or mutation, but rather reflects a panoply of different instincts, spandrels, and evolutionary accidents...

My favorite line in the piece: "One primatologist speculated that the real reason two male orangutans were fellating each other was nutritional." We're so good at explaining away what we don't want to believe." 38

Smithsonian "discriminated" against scientist

By:Ted Agres | December 22, 2006

the-scientist.com:

"A recently released Congressional report accuses senior officials at the Smithsonian Institution's National Museum of Natural History (NMNH) of having harassed, discriminated against, and retaliated against research associate and journal editor Richard Sternberg for allowing publication of a scientific paper supporting intelligent design (ID) in 2004. According to the report, NMNH officials sought to discredit Sternberg and force him out of his unpaid RA position after he allowed an article by Stephen C. Meyer, director of the Discovery Institute's Center for Science and Culture, to be published in the August 2004 Proceedings of the Biological Society of Washington, a peer-reviewed journal of which he was managing editor at the time. While legally separate from the NMNH, Proceedings is governed by a council that includes NMNH scientists and receives public funds from the museum. Meyer's article, which used information theory to support the argument for intelligent design in biological complexity, sparked controversy. It was the first pro-ID article to be published in a refereed publication, raising concern among some scientists that it might be used to

enhance the academic argument for intelligent design." 39

There are many scientists who think this kind of behaviour is perfectly kosher.

Raking the Primordial Muck

csmonitor.com:

When sociology students visit Creation Museum:

"A professor of sociology led a field trip through Kentucky's Creation Museum, a fundamentalist Christian facility. The professor found that non-fundamentalists felt uncomfortable there. Museum officials say they've received death threats and the site sometimes draws anti-Creationist protesters." 40

We find all manner of weird and wonderful polarities revolving around creationism, fundamentalism, scientism, homosexuality, discrimination, birth control, abortion, divorce, and death threats, all due to the heinous crime of refusing to believe that the earth was created in six days or the opposing view that neo-Darwinist dogma is an absolute truth.

The professor's visit it seems, was part of an ongoing project to "understand fundamentalism".

The perceived right of Christians to remove the free will of those who prefer to avoid religion, often for understandable reasons, is countered by an equal and opposite pole in the form of a scientism that also sees evolution as an absolute article of faith. It's the old story of faith versus faith, the cause of countless wars and much of man's inhumanity to man, just as we encounter above.

What is interesting is that all of this is no different to what Richard Dawkins is proposing at the start of this chapter - just a reversal and equally bizarre - a war against those who don't agree with his views.

Time after time in these pages, we see science and its handmaiden scepticism (it may be the other way around) rejecting sense and reason, rejecting logic and sound judgement for the sake of supporting their own crypto-religious agendas. Mysteriously, this is often done with no comment from those who one would expect to know better, like a professor of sociology. It's fine to defend science on the grounds that it can only study things that it can "test in the lab", but that rules out commenting on the things it can't – something to which science has become addicted. Pontificating on all and sundry is what science wants to do, and to do so with nothing more than an appeal to its own authority.

I read a very strange thing not so long ago, to do with doubts and confidence in the ToE. The forum-writer having lost most of his arguments in favour of biological evolution to a determined opposition, said: 'Evolution is 'anything' that

could have brought the biosphere from its primitive origins to what we see today'. He was of course referring to and supporting neo-Darwinian evolution; clinging to the word with a religious zeal that makes all things right and true. His faith tells him that the answers are there, somewhere, whatever the opposition, and he is just one of the faithful.

And here we have the crux of it all: that the idea of yielding to the story of Genesis was so intellectually alien that he will claim anything is possible in order to retain what he sees as the only alternative, ToE.

Amazingly, this was someone who claimed to be a practising Anglican.

Confusing eh?

He was so indoctrinated with the prevailing ideal and felt himself to be so inferior alongside the collected works of science that he thought had superseded his Bible, that he had collapsed mentally in the face of both religion and science. But, the idea that both had failed was inconceivable, unthinkable.

Human failure is not new, and to witness it in oneself is to acknowledge millennia of human failure as the norm. But science teaches us that this is not the case, even in the face of untold disasters, science will lead us to a 'New Utopian Tomorrow', or the day after: or maybe not in our lifetime... but sometime in the future. The things it does today 'may' someday help it to overcome the human problem of failure....or not... if science fails to do so.

Hiding behind science or even religion is not a good idea if ones sanity is at stake. There is a remedy and a path to sanity, in thinking things out for yourself, applying critical thinking to all things, rooting out appeals to authority and circular arguments, including those educational, scientific and religious.

The Primordial Soup

Scientific fundamentalism will befuddle your brain.

Fred Hoyle:

""Because the old believers said that God came out of the sky, thereby connecting the Earth with events outside it, the new believers were obliged to say the opposite and to do so, as always, with intense conviction. Although the new believers had not a particle of evidence to support their statements on the matter, they asserted that the rabbit producing sludge (called soup to make it sound more palatable) was terrestrially located and that all chemical and biochemical transmogrifications of the sludge were terrestrially inspired. Because there was not a particle of evidence to support this view, new believers had to swallow it as an article of faith, otherwise they could not pass their examinations or secure a job or avoid the ridicule of their colleagues. So it came about from 1860 onward that new believers became in a sense mentally ill, or, more precisely, either you

became mentally ill or you quitted the subject of biology, as I had done in my early teens. The trouble for young biologists was that, with everyone around them ill, it became impossible for them to think they were well unless they were ill, which again is a situation you can read all about in the columns of Nature.'" 41

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Chapter 1

Figure 1

Figure 2 Jansky's antenna. Compare with the Reber telescope below

Figure 3 Reber's first radio telescope

Figure 4

Figure 5

Appendix

Critical Thinking

grammar.about.com:

Richard Nordquist tells us that critical thinking is: "The process of independently analyzing, synthesizing, and evaluating information as a guide to behavior and beliefs. "

The American Philosophical Association has defined critical thinking as "the process of purposeful, self-regulatory judgment. The process gives reasoned consideration to evidence, contexts, conceptualizations, methods, and criteria" (1990). Critical thinking is sometimes broadly defined as "thinking about thinking."

Critical thinking skills include the ability to interpret, verify, and reason, all of which involve applying the principles of logic. (By way of contrast, read a physicist's evaluation of logic in chapter one).

The process of using critical thinking to guide writing is called critical writing." 4

Much of the information presented to us throughout our lives is taken as true because it's what we have been told by those whose job it is to inform and educate. For example, what we read in textbooks is almost never questioned and at the opposite end of the spectrum what is printed in newspapers or spoken on TV is certainly taken seriously by many.

The secret of a successful critical investigation into such material is to find the historical basis of a subject and decide if it is possible to derive the given information from the source. Often we find that the most imposing intellectual edifices are built on very unstable footings, counterfeit belief systems and unmerited faith in authorities. If the foundation is unsound the subject is likely to be untrue whoever presents it and whatever their qualifications.

Critical thinking is, above all, about thinking for yourself. Very few of the web sites devoted to this subject seem to understand that critical thinking involves constructively criticising the basis of the education system that teaches this very subject. This is crucial to the freedom of thinking required for success.

Education is totally controlled by academic science. Every educational subject, with the possible exception of the visual arts is reliant to a greater or lesser extent upon academic science and each is therefore supportive of science, encouraging the student to also support the scientific paradigm; this is true even of religious studies. The whole education meritocracy is, as a result, biased in favour of an academic scientific belief system that has a tendency to reject the concept of logic when confronted with problems within its own system.

All qualification derives from a materialist, sceptically-biased, belief system based

on faith in academic science. It is therefore itself biased and is a form of indoctrination no different to that of cults and religions where the initiate asks no questions about the basis of doctrine for fear of excommunication.

(The writer is not opposed to using the system as long as the reader understands that it IS a belief system, not an absolute and is not to be taken too seriously.)

"Belief Systems:dictionary.reference.com:

Definition: faith based on a series of beliefs but not formalized into a religion;" 5

en.wiki:

"A belief system is a set of mutually supportive beliefs. The beliefs may be religious, philosophical, ideological or a combination of these." 6

Below we have someone with a scientific, sceptically biased belief system, describing non-scientific belief systems as "claptrap". Although it cannot be denied that science is a belief system, the writer propagates it as if he holds an elite, privileged position, beyond any categorisation such as 'belief system'. Such extreme bias is common among fundamental sceptics who may or may not be scientists. Scientism is not science and fundamentalism is not confined to religions. Caveat emptor.

en.wiki:

"The British philosopher Stephen Law has described some belief systems (including belief in homeopathy, psychic powers and alien abduction) as "claptrap" and said that they "draw people in and hold them captive so they become willing slaves ... if you get sucked in, it can be extremely difficult to think your way clear again".7

But don't worry, it can be done by someone with a sceptical bias who feels insecure when confronted with unscientific ideas.

The book, by Stephen Law. Believing Bullshit: How Not to Get Sucked into an Intellectual Black Hole.

Such books, and there are many, (see for example Richard Dawkins) have an agenda that supports, to the exclusion of all else, the extreme materialist paradigm that claims to be scientific, but is in fact a biased, pseudo-scientific parody of a true science. Close scrutiny of such a philosophy leaves much to be desired not least because, as we will see, many of the revered scientific names of the past were involved with paranormal pursuits. 8 Science and scepticism have a habit of conveniently forgetting history.

Opposing systems are invariably presented in overly simplistic terms, for example:

*That fundamentalist Christians are the only group who object to the neo-

Darwinist biological evolution theory.

*That Christianity can be easily debunked by referring to the Archbishop Ussher creation date of 4004 BC. See: Wiki, 'Straw Man'.

Science is presented as the benchmark for the notion of absolute truth when no good, honest scientist would make such a claim, and is invariably considered by sceptical writers to be above critical examination, just like medieval dogma.

Richard Dawkins quote: "Let us try to teach generosity and altruism, because we are born selfish." There is no direct evidence in support of this emotive statement, and others like it depend on an accumulation of further unproven but mutually supportive beliefs and assumptions. 9 Dawkins attempts to talk us all into a belief in evolution by using it as a substitute for religion. His work would be scientific if there were any facts, but he tells us that such things as empirical facts are unnecessary in the face of the obvious. We will return to this subject in a later chapter.

One cannot consider oneself a critical thinker (or even a sceptic) if the thinking is restricted to a box with its parameters defined by academic science (thinking from inside the box). Critical thinking must include an examination and evaluation of the basis, the bias, and the motivation behind the modern academic science that provides the subject content for education. The use of the word "claptrap" is illogical in the context of subjects that often have large libraries of supporting evidence, on the pretext that they do not lend themselves to scientific repetition and rationale on demand.

The rationale usually takes the circular form: If a subject is not sanctioned by science it does not exist, or it is an illusion. Totally failing to acknowledge that often such subjects are not studied by science and therefore are beyond the scope of the average scientist's qualification.

Three types of phenomena can be used as an example:

1. The kind that will reliably repeat on a regular basis - like turning on a tap and water flows, an object dropped will fall downward, the constant positions of the stars or the movements of the planets.
2. Things that happen randomly and/or infrequently, but are often reported - like fish, frogs, ice and other objects falling from the sky. Other type-two phenomena are human footprints in rock, ball lightning, apparitions and UFO sightings.
3. Things that happen only once or only rarely, or infrequent personal experiences - like near death experiences, a limestone meteorite or spontaneous human combustion.

Science limits itself to number 1. in the list and regularly denies or mundanely rationalises the other two, even when there is a large body of supporting

evidence, and often the rationalisation is even more fantastic than the phenomenon itself.

For this reason alone, it is relatively easy to criticise science if the critic has the self-confidence to attempt something denied by his/her education.

Some scientists are well aware of this failing:

todayinsci.com:

"The strength and weakness of physicists is that we believe in what we can measure. And if we can't measure it, then we say it probably doesn't exist. And that closes us off to an enormous amount of phenomena that we may not be able to measure because they only happened once." Michio Kaku

Quoted in Nina L. Diamond, *Voices of Truth* (2000).¹⁰

One has also, in the context of the above, to question the typical physicist's grasp on reality.

The authority of any person making a statement can be ignored if the statement can be shown to be false by logic, history, prejudice, bias, or some other form of evidence. ¹¹

'Argument from Authority', an article with its own logical/critical thinking problems:

en.wiki:

"Argument from authority (also known as appeal to authority or argumentum ad verecundiam) is a special type of inductive argument which often takes the form of a statistical syllogism.

"Although certain classes of argument from authority do on occasion constitute strong inductive arguments, arguments from authority are commonly used in a fallacious manner..."

(Consider the following as it may constitute a fallacy in itself:)

en.wiki:

"...The appeal to authority may take several forms. As a statistical syllogism, it will have the following basic structure:

Most of what authority 'a' has to say on subject matter S is correct.

a says p about S.

Therefore, p is correct.

The strength of this argument depends upon two factors:

The authority is a legitimate expert on the subject.

A consensus exists among legitimate experts on the matter under discussion."

(This is a fallacy) ¹²

The Wiki writer has fallen into a trap by assuming that only true information can originate from consensus authorities.

It does not always follow that consulting an expert (authority) guarantees that an argument is true. If a fallacious consensus exists among the peers of the expert then the expert will agree with the consensus, even when strong evidence shows it to be false. For examples see various chapters where critical thinking on various subjects invalidates expert opinion.

Experts do not enjoy the luxury of being able to think critically, they have to toe the party line or lose the support of their peers or even lose their jobs. Argument from authority can be false whoever or whatever the authority happens to be.

Scepticism

Critical thinking is not to be confused with scepticism (skepticism US), which over the years has acquired a new meaning. Scepticism has become a narrow minded outlook that rejects on principle even though the principle itself may be ill-defined. The assumed but circular argument is that science uses scepticism and therefore scepticism is scientific, is a fallacy with no basis in logic. Bad scepticism can be based on a misunderstanding of science or even bad science. Bad science can also be based on an extreme sceptical bias.

Today's version of scepticism is more concerned with emotional than critical or even scientific thinking. Using the word science or claiming scientific credentials in support of an argument is 'argument from authority' and not a true logical progression. The same applies to rationalisation.

To Understand The Definition Of Critical Thinking - First Understand The Use

By Xander Hamilton-Reeves

articleflame.com:

"Critical thinking can be used to make value deductions against the information provided. By using the skills involved in critical thinking correctly, you are able to view all data, statistics, values and figures, then you can make the absolute best analysis humanly possible.

This places you at the top of the intellectual spectrum. Not for the purposes of intellectual snobbery, but for the ability of seeing what is real and what is not. This is underrated at best.

To make the most accurate interpretation you must put the information you receive through the critical thinking filter...By overcoming your learned, emotional and environmental bias you can produce the most accurate intellectual judgments possible." 13 14

Abandon the insecurity that says, "the expert always knows best" and start using the gift of logic...Think for yourself.

Don't forget to look for circular reasoning and appeal to authority.