

The Age of the Singularity – Mankind’s Fork in the Road

Mankind must rapidly come to terms with at least two major singularities – that of the development of artificial intelligence and that of pure nuclear fusion. Each of these will require that we embark on a fundamental revolution in our collective world-view.

In terms of artificial intelligence, it has been stated that many people alive today have to prepare to deal directly with entities which have a level of intelligence which we could only characterise as super-human. Eventually this will move on to become hyper-human, and then, *Godlike*:

*...Once upon a time, in some out of the way corner of that universe which is dispersed into numberless twinkling solar systems, there was a star upon which clever beasts invented **knowing**. That was the most arrogant and mendacious moment of "world history," but nevertheless, it was only a moment... [Humans regard their intellect] so solemnly — as though the world's axis turned within it. But if we could communicate with the gnat, we would learn that he likewise flies through the air with the same solemnity, that he feels the flying centre of the universe within himself...*

Über Wahrheit und Lüge im außermoralischen Sinn Friedrich Nietzsche

Will such Entities consider us in the same way we do that gnat? Could they decide that Mankind is a “pest” to be exterminated in the same way we might deal with a mosquito which is being a nuisance? If so, should we halt all progress in terms of the development of artificial intelligence? As put in the essay **Our Fear of Artificial Intelligence** by Paul Ford:

“...Because Google, Facebook, and other companies are actively looking to create an intelligent, “learning” machine, he reasons, “I would say that one of the things we ought not to do is to press full steam ahead on building superintelligence without giving thought to the potential risks. It just seems a bit daft.” Russell made an analogy: “It’s like fusion research. If you ask a fusion researcher what they do, they say they work on containment. If you want unlimited energy you’d better contain the fusion reaction.” Similarly, he says, if you want unlimited intelligence, you’d better figure out how to align computers with human needs.

*Bostrom’s book is a research proposal for doing so. A superintelligence would be godlike, but would it be animated by wrath or by love? It’s up to us (that is, the engineers). **Like any parent, we must give our child a set of values.** And not just any values, but those that are in the best interest of humanity. We’re basically telling a god how we’d like to be treated. How to proceed?..”*

It could be argued that the artificially intelligent Entity’s values should be programmed to include concern for the welfare of *all* beings, not just humans. But that then implies that our present values, as the incumbent ‘gods’ of planet Earth, should do so too.

In terms of nuclear fusion, if we develop the means of generating pure fusion energy in a compact mechanism such as that of a modification of the liquid pendulum principle, it is entirely plausible that it will be misused as a “weapon of mass destruction” by both nations and terrorist organisations. All countries will be vulnerable to attack, and the gradual “leakage” of nuclear weapon technology already taking place will become a “tsunami” should the fission element no longer be required. The reasons for this are obvious:

- Fissile materials can much more readily be detected and traced by means of the radiation emissions from plutonium 239 or uranium 235. With deuterium and possibly tritium as fuel, there will be a very much diminished possibility for monitoring the non-proliferation agreement.
- The production of plutonium and uranium 235 is relatively difficult in the first place, requiring a large number of high speed centrifuges (in the case of U235) or large nuclear reactors (in the case of Pu239).
- Plutonium and uranium can only be obtained from a few hundred sources worldwide, and can thus be monitored to an extent.
- Because the pure fusion weapons do not produce radioactive fallout, their use, which was formerly unthinkable, now becomes very thinkable. Obviously this would have profound ramifications for world peace and security.
- The “yield” of the warhead will be able to be easily adjusted from, say, 20 tonne to 200,000 tonne TNT equivalent. The smaller end yield bombs will be much more “usable” because of their lower collateral damage, but this is likely to lead to escalation.

On October 9, 2016, former Soviet President Mikhail Gorbachev addressed the participants in the International Conference devoted to the 30th anniversary of the Reykjavik nuclear disarmament meeting of leaders of the USSR and the US:

*"...I am concerned and alarmed by the current situation. **Right before our eyes, the window to a nuclear weapon-free world opened in Reykjavik is being shut and sealed.**"*

"New, more powerful types of nuclear weapons are being created. Their qualitative characteristics are being ramped up. Missile defense systems are being deployed. Prompt non-nuclear strike systems are being developed, comparable in their deadly impact to the weapons of mass destruction. The military doctrines of nuclear powers have changed for the worse, expanding the limits of "acceptable" use of nuclear weapons. It is mostly due to this that the risk of nuclear proliferation has increased."

"But the worst thing that has happened in recent years is the collapse of trust in relations between major powers which according to the United Nations Charter bear the primary responsibility for maintaining international peace and security and which still possess vast stockpiles of nuclear weapons and must reduce them until their complete elimination. This is still their binding commitment under the Non-Proliferation Treaty..."

<http://tass.com/world/905191>

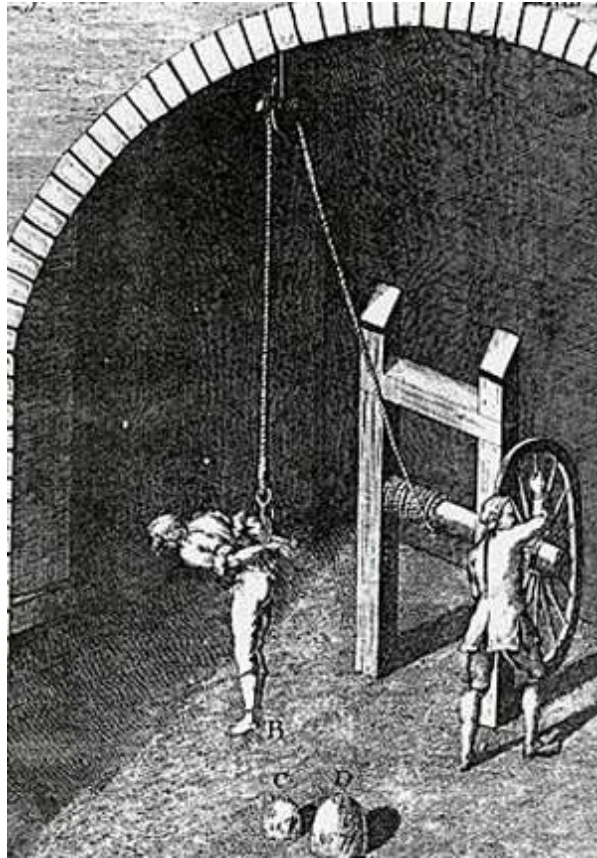
With the coming of the age of pure fusion energy, governments and the world community as a whole must realize that we have reached an "Axial Point." The new developments offer on the one hand the possibility of unlimited cheap energy, and on the other, very grave danger of nuclear war. We can incinerate ourselves or rise up to a golden age. We can live under a dictatorship or free:

"...Upon this, one has to remark that men ought either to be well treated or crushed, because they can avenge themselves of lighter injuries, of more serious ones they cannot; therefore the injury that is to be done to a man ought to be of such a kind that one does not stand in fear of revenge..."

Il Principe

Niccolo Machiavelli

Machiavelli the philosophical republican was the ultimate pragmatist. In his final book, ***The Prince***, addressed to the Medicis while in internal exile and after having been subjected by them to brutal torture (during which both his shoulders were dislocated) he warned that either the ruler must treat all individuals, minority groups or other countries with absolute justice, civility, humanity and equity, or he must crush them so that they are incapable of carrying out any further "mischief." The former strategy is an example of an ideal enlightenment, the latter of absolute totalitarianism. In a global context, this totalitarianism would have to be in the form of a gargantuan World Government. Alarmingly, the evidence so far is that the world is tending to slide towards totalitarianism under the guise of "national security." Just as it is not possible to be half pregnant, neither will it be possible to have a semi-totalitarian State.



In 1913, H.G Wells amazingly foresaw the atomic age. He was pessimistic in the short term, but in the long term an optimist:

“...Now all this phase of gigantic change in the contours and appearances of human life which is going on about us—a change as rapid and as wonderful as the swift ripening of adolescence to manhood after the barbaric boyish years, is correlated with moral and mental changes at least as unprecedented. It is not as if old things were going out of life and new things coming in; it is rather that the altered circumstances of men are making an appeal to elements in his nature that have hitherto been suppressed, and checking tendencies that have hitherto been overstimulated and overdeveloped. He has not so much grown and altered his essential being as turned new aspects to the light. Such turnings round into a new attitude the world has seen on a less extensive scale before. The Highlanders of the seventeenth century, for example, were cruel and bloodthirsty robbers; in the nineteenth their descendants were conspicuously trusty and honourable men. There was not a people in Western Europe in the early twentieth century that seemed capable of hideous massacres, and none that had not been guilty of them within the previous two centuries...”



“...The catastrophe of the atomic bombs which shook men out of cities and businesses and economic relations, shook them also out of their old established habits of thought, and out of the lightly held beliefs and prejudices that came down to them from the past.”



Unidentified corpse, Hiroshima. Deaths to the end of 1945 totalled 140,000.

Richard Rhodes. ***Making of the Atomic Bomb***. Simon & Schuster.

“The moral shock of the atomic bombs had been a profound one, and for a while the cunning side of the human animal was overpowered. Men thought twice before they sought mean advantages in the face of the unusual eagerness to realize new aspirations, and when at last the weeds revived again and "claims" began to sprout, they sprouted upon the stony soil of law-courts reformed, of laws that pointed to the future instead of the past, and under the blazing sunshine of a transforming world.”

“A new literature, a new interpretation of history, is springing into existence; a new teaching is already in the schools, a new faith in the hearts of the young. I see the crystal cup of human knowledge perpetually brimming. I see the fires of human thought rise from ten thousand altars of research, and flare out into the wilderness of space. I see the time when men will no longer be content with this little conquered planet.”



The sun blazing among the peaks...
will spin at our command.

"I know not by what devices, by what miracle of patience, the method will be won, but I know that they will go out into the deeps. I can see those first pioneers, the little craft dwindle up into the sky, glittering, twinkling, a speck swallowed up at last by the quivering blue. They may be lost, but other men will follow them in this eternal adventure of mankind."

"Look at the sun blazing there among the peaks, too blinding almost for our eyes. See how he touches the mountaintops and how they dissolve into fire at his touch. Some day, I tell you, he will burn as we please and spin at our command. He will be our servant, our convenience, our instrument. He will be the fire before our door, the light of our first home as we spread out our power and our blood farther and farther amidst the stars."

The World Set Free

H.G. Wells.

Lacrimosa

The Tree of Life

<https://www.youtube.com/watch?v=JmnYqKI1LzE>

Wells, like Nietzsche, tended to see Reality from the top down, rather than bottom up. As Nietzsche puts it:

...Our supreme insights must - and should! - sound like follies... The exoteric and the esoteric, as philosophers formerly distinguished them... differ one from another not so much in that the exoteric stands outside and sees, evaluates, measures, judges from the outside, not from the inside: what is more essential is that this class sees things from below - but the esoteric sees from above!...

Jenseits von Gut und Böse

Nietzsche

One thing which will be crucial in terms of whether we descend into the abyss of nuclear war or ascend to "this eternal adventure of mankind" will be our ability to tap into the sophisticated intelligence inherent in some of our ancient philosophical and religious traditions. In 2016 we are closer to nuclear war than any time in the last half century.

*...Turning and turning in the widening gyre
The falcon cannot hear the falconer;
Things fall apart; the centre cannot hold;
Mere anarchy is loosed upon the world,
The blood-dimmed tide is loosed, and everywhere
The ceremony of innocence is drowned;*

*The best lack all conviction, while the worst
 Are full of passionate intensity.
 Surely some revelation is at hand;
 Surely the Second Coming is at hand.
 The Second Coming! Hardly are those words out
 When a vast image of "Spiritus Mundi"
 Troubles my sight: somewhere in the sands of the desert
 A shape with a lion body and the head of a man,
 A gaze blank and pitiless as the sun,
 Is moving its slow thighs while all about it
 Reel shadows of the indignant desert birds.
 The darkness drops again; but now I know
 That twenty centuries of stony sleep
 Were vexed to nightmare by a rocking cradle,
 And what rough beast, its hour come round at last,
 Slouches towards Bethlehem to be born?*

The Second Coming

W.B. Yeats

In his book *Tao: The Watercourse Way*, Alan Watts discusses that philosophy's attitude to the use of force:

*...There is basic good sense in the Taoist view that we **must** make the desperate gamble of trusting ourselves and others. However, Lao Tzu makes the reservation, in describing his ideal community, that "though the people have weapons, they do not show them," since weapons are, up to a point, a natural extension of teeth, claws, and shells. The Taoist view of Nature was not sentimental. It recognised that violence had sometimes to be used, but always with regret, for*

*...The best soldier is not soldierly;
 The best fighter is not ferocious;
 The best conqueror does not take part in war;
 The best employer of men keeps himself below them.
 This is called the virtue of not contending;
 This is the ability of using men;
 This is called the supremacy of consorting with Heaven...*

Tao Te Ching

Lao Tzu

And the poets:

*...But human soul
 Must rise from Individual to the Whole.
 Self-love but serves the virtuous mind to wake,
 As the small pebble stirs the peaceful lake;
 The centre moved, a circle straight succeeds,
 Another still, and still another spreads;
 Friend, parent, neighbour, first it will embrace;
 His country next; and next all human race;
 Wide and more wide, the o'erflowings of the mind
 Take every creature in, of every kind;
 Earth smiles around, with boundless bounty blest,
 And Heaven beholds its image in his breast...*

An Essay on Man

Alexander Pope

What we're learning from the subtleties of quantum physics is reinforcing this intuitive wisdom:

"...I see science and mysticism as two complementary manifestations of the human mind; of its rational and its intuitive faculties. The modern physicist experiences the world through an extreme specialisation of the rational mind; the mystics through an extreme specialisation of the intuitive mind... To paraphrase an old Chinese saying,

mystics understand the roots of the Tao but not its branches; scientists understand its branches but not its roots. Science does not need mysticism and mysticism does not need science; but men and women need both... What we need... is not a synthesis but a dynamic interplay between mystical intuition and scientific analysis..."

"...So far this has not been achieved in our society. At present our attitude is too 'yang' - to use again Chinese phraseology - too rational, male and aggressive. Scientists themselves are typical ...although their theories are leading to a world view which is similar to the mystics, it is striking how little this has affected their attitudes... Many of them actively support a society which is still based on the mechanistic, fragmented world view, without seeing that science points beyond such a view, towards a oneness of the universe which includes not only our natural environment but also our fellow human beings. I believe that the world view implied by modern physics is inconsistent with our present society, which does not reflect the harmonious interrelatedness we observe in Nature. To achieve such a state of dynamic balance, a radically different social and economic structure will be needed: a cultural revolution in the true sense of the word. The survival of our whole civilisation may depend on whether we can bring about such a change. It will depend, ultimately, on our ability to adopt some of the 'yin' attitudes of Eastern mysticism; to experience the wholeness of Nature and the art of living with it in harmony..."

The Tao of Physics

Fritjof Capra

And other thinking scientists such as Fred Hoyle:

"...With understanding came power, the power to annihilate as well as the power to survive. Other animals were slaughtered, at first for necessity, later for "sport". Other subspecies of Man were totally annihilated, and then the power to destroy became directed inwards, against our own subspecies itself. But always arrayed against the desire to destroy was an opposing instinct, an urge to build that created the churches and temples around the world. Alfred Russell Wallace expressed the instinct in words, describing it as a mysterious sanctity whereby truth is invested as the highest of virtues. Others might find the same instinct in the vistas of Elysian Fields to which Beethoven transports us in the slow movements of his late quartets."

"The protective instinct in Man took a long step backwards from 1860 onwards. Whether Darwinism, with its philosophy that opportunism is all, was the cause of the Realpolitik that overwhelmed the world from 1860 ... or whether it was Realpolitik that spawned Darwinism, is hard to say, for the two went hand-in-hand, leading with mounting inevitability to two World Wars in the present century, and to a situation which looks increasingly like a one-way journey towards self-destruction for the whole of our species..."

"...Just as the Earth was at a transition point 570 million years ago, so it is today. The spectre of our self-destruction is not remote or visionary. It is ever-present with hands already on the trigger, every moment of the day. The issue will not go away, and it will not lie around forever, one way or another it will be resolved..."

*"...If the Earth is to emerge as a place of added consequence, with Man of some relevance in the cosmic scheme, we shall need to dispense entirely with the philosophy of opportunism. **While it would be no advantage I believe to return to older religious concepts, we shall need to understand why it is that the mysterious sanctity described by Wallace persists within us, beckoning us to the Elysian Fields, if only we will follow..."***

(emphasis added)

The Intelligent Universe

Fred Hoyle

"...There is only too much reason to fear that Western civilisation, if not the whole world, is likely in the near future to go through a period of immense sorrow and suffering and pain - a period during which, if we are not careful to remember them, the things that we are attempting to preserve may be forgotten in bitterness and poverty and disorder. Courage, hope, and unshakeable conviction will be necessary if we are to emerge from the dark time spiritually undamaged. It is worthwhile, before the actual danger is upon us, to collect our thoughts, to marshal our hopes, and to plant in our hearts a firm belief in our ideals..."

"...It is to the possible achievements of Man that our loyalty is due, and in that thought the brief troubles of our unquiet epoch become endurable. Much wisdom remains to be learned, and if it is only to be learned through adversity, we must endeavour to endure adversity with what fortitude we can command. But if we can acquire wisdom soon enough, adversity may not be necessary and the future of Man may be happier than any part of his past..."

If We Are To Survive This Dark Time

Bertrand Russell

"...Man is a rope, tied between beast and overman - a rope over an abyss. A dangerous across, a dangerous on-the-way, a dangerous looking back, a dangerous shuddering and stopping."

“What is great in Man is that he is a bridge and not an end: what can be loved in Man is that he is an overture and a going under...”

Also sprach Zarathustra Nietzsche

Nietzsche predicted that Mankind would pass through an age of materialism and nihilism to an *“Attempt at a Revaluation of All Values,”* or creation of values from first principles. Nietzsche considered himself a “strong pessimist,” someone who affirms life despite the fact that it involves struggle, sorrow and turmoil. In the process of revaluation, the Last Man, today’s *nihilistic materialist*, would have to be transcended. In this regard it has been said, only half in jest, that the triumph of present-day humanity has been to reach “the dictatorship of the Proletariat,” being the realisation of mediocrity and mindlessness. This is a state which is not sustainable:

“...What I relate is the history of the next two centuries. I describe what is coming, what can no longer come differently: the advent of nihilism. This history can be related even now; for necessity itself is at work here. This future speaks even now in a hundred signs, this destiny announces itself everywhere; for this music of the future all ears are cocked even now. For some time now, our whole European culture has been moving as toward a catastrophe, with a tortured tension that is growing from decade to decade: restlessly, violently, headlong, like a river that wants to reach the end, that no longer reflects, that is afraid to reflect...”

“...For one should make no mistake about the meaning of the title that this gospel of the future wants to bear. ‘The Will to Power: Attempt at a Revaluation of All Values’ — in this formulation a countermovement finds expression, regarding both principle and task; a movement that in some future will take the place of this perfect nihilism — but presupposes it, logically and psychologically, and certainly can come only after and out of it. For why has the advent of nihilism become necessary? Because the values we have had hitherto thus draw their final consequence; because nihilism represents the ultimate logical conclusion of our great values and ideals — because we must experience nihilism before we can find out what value these ‘values’ really had. — We require, sometime, new values...”

der Wille zur Macht Nietzsche

“...We have left the land and have taken to our ship! We have burned our bridges - more, we have burned our land behind us! Now, little ship, take care! The Ocean lies all around you; true, it is not always roaring, and sometimes it lies there as if it were silken and golden and a gentle favourable dream. But there will be times when you will know that it is infinite, and that there is nothing more terrible than Infinity... Alas, if homesickness for land should assail you, as if there were more freedom there - and there is no longer any “land”... “

Die fröhliche Wissenschaft Nietzsche

Arguably the two old nuclear “superpowers” will have most to lose from the coming of the age of pure fusion. The new era will require far more “soft power” than “hard power.” China and India potentially have the most to gain in this respect, as they have so far refrained from going down that track of massive nuclear overkill capacity, and have extremely sophisticated traditional cultures and philosophies to draw down from in order to generate soft power:

*“...Indian soft power is rooted in ancient Indian culture and tradition. With its vision of **Vasudhaiv Kutumbhkam** (the whole world is a family) and great soft power assets India could easily be an example for the whole planet in the twenty-first century...”*

http://uscpublicdiplomacy.org/blog/india_a_great_soft_power

And Chinese Confucianism, which was originally instituted to try to deal with the chaos of the Chinese *Warring States* period:

*“...viewing things from the point of view of Heaven gives us a sympathetic understanding of them. In the sphere where the self is transcended, sympathy towards things is also increasingly enlarged until the sphere of what [is] called “forming one body with all things” is reached. They call this sphere that of **jen**.”*

*“The word **jen** has two meanings. One is moral, the **jen** (humanity) in the (Five Constant Virtues) of humanity, righteousness, propriety, wisdom, and faithfulness... The other meaning refers to the sphere we are discussing. Ch’eng Ming-tao (Cheng Hao, 1032-1085) said, “The man of **jen** forms one body with all things without any differentiation. Righteousness, propriety, wisdom, and faithfulness are all [expressions of] **jen**”... In order to distinguish the two meanings, we shall call this **jen** “the Great **Jen**.” ”*

A Sourcebook in Chinese Philosophy Wing-Tsit Chan

And finally coming back again to glimpse H.G.Wells' qualified optimism regarding the vast challenges and opportunities lying ahead:

"...This - this is the dawn of a new day in human living. At the climax of that civilisation which had its beginning in the hammered flint and the fire-stick of the savage, just when it is becoming apparent that our ever-increasing needs cannot be borne indefinitely by our present sources of energy, we discover suddenly the possibility of an entirely new civilisation. The energy we need for our very existence, and with which Nature supplies us still so grudgingly, is in reality locked up in inconceivable quantities all about us..."

The World Set Free

H.G.Wells

The coming Age of Singularities will be both full of promise and full of danger. How we deal with it will decide our fate.

In the words of Milton's Satan in **Paradise Lost**:

*"The mind is its own place, and in it self
Can make a Heav'n of Hell, a Hell of Heav'n."*