



de GARIS

ESSAYS

Prof. Dr. Hugo de Garis

DE GARIS ESSAYS

CONTENTS

The essays in this e-book are divided into the following categories –

- A) On the ARTILECT (Artificial Intellect) and Related Topics**
- B) On GLOBA (the Global State) and Related Topics**
- C) On POLITICS**
- D) On FERMITECH (Femto Meter Technology) and TOPOLOGICAL
QUANTUM COMPUTING (TQC)**
- E) On RELIGION**
- F) On SOCIETY**
- G) On EDUCATION**

A) On the ARTILECT (Artificial Intellect) and Related Topics

- A0) *The Artilect War : Cosmists vs. Terrans : A Bitter Controversy
Concerning Whether Humanity Should Build Godlike Massively
Intelligent Machines***
- A1) *Building Gods or Building our Potential Exterminators?***
- A2) *Answering Fermi's Paradox***
- A3) *Friendly AI : A Dangerous Delusion?***

- A4) *The Cyborg Scenario – Solution or Problem?*
- A5) *There are No Cyborgs*
- A6) *There Will Be No Cyborgs, Only Artilects : A Dialogue between
Hugo de Garis and Ben Goertzel*
- A7) *Next Step : Now the Species Dominance Issue has Become Main
Stream in the Media, the Next Step Should be Political*
- A8) *Seeking the Sputnik of AI : Hugo de Garis Interviews Ben
Goertzel on AGI, Opencog, and the Future of Intelligence*
- A9) *What is AI Succeeds? The Rise of the Twenty-First Century
Artilect*
- A10) *Merge or Purge?*
- A11) *Species Dominance Debate : From Main Stream Media to
Opinion Polls*
- A12) *Species Dominance Poll Results*
- A13) *H+ers (Humanity Plus-ers) and the Artilect : Opinion Poll
Results*
- A14) *Should Massively Intelligent Machines Replace Humanity as
the Dominant Species in the Next Few Decades?*
- A15) *I am so Sick of American Singularity Pollyannists*
- A16) *Answering my Critics*
- A17) *The Artilect War : Will Massively Intelligent Machines Replace
Humanity as the Dominant Species in the Next Few Decades?*

A18) *The Singularity Institute*

A19) *How Will the Artificial War Start?*

A20) *Galactic Civilizations*

B) On GLOBA (the Global State) and Related Topics

B1) *GLOBA : Accelerating Technologies Will Create a Global State
by 2050*

B2) *BRAD, Multi-ism, Culture Bashing and PC*

B3) *Why Culture Bashing is Valuable*

B4) *Globist Manifesto*

B5) *The Culture Bashing of the US*

B6) *The Culture Bashing of Japan*

C) On POLITICS

C1) *Lincoln was a Mass Murdering Dictator*

C2) *Greater Male Variance (GMV) and its Consequences*

C3) *Sageism (Discrimination against Intellectuals)*

C4) *The Democratic Union (DU)*

C5) *Cultural Name Ordering (CNO) Convention*

C6) *Politically Correct (PC) vs. Politically Realist (PR)*

C7) *Peakers and Sages, Oil and Water*

**D) On FERMITECH (Femto Meter Technology)
and TOPOLOGICAL QUANTUM
COMPUTING (TQC)**

- D1) *FERMITEC : Searching for Phenomena in Physics that may Serve as Bases for a Femtometer Scale Technology*
- D2) *Topological Quantum Computing : The TQC Shockwave and its Impact on University Computer Science Teaching*
- D3) *FEMTOTECH : Computing at the Femtometer Scale Using Quarks and Gluons*
- D4) *SIPI : Search for Infra Particle Intelligence*

E) On RELIGION

- E1) *From Cosmism to Deism*
- E2) *A Transhumanist Argument for the Existence of God(s)*
- E3) *X-Teched Creatures Billions of Years Old*
- E4) *The Deistic Maximalism Principle*

F) On SOCIETY

- F1) *ARCing (After Retirement Careering)*
- F2) *Divorce Fight Frequency*
- F3) *Not Taking Women Seriously*

G) On EDUCATION

G1) *Giving Everyone a Million Dollar Education*

G2) *Bankrupting the Pluddites*

G3) *The PAPER WAR, FIMmers vs. Pluddites, Free Information*

Movement members vs. Paper Luddites, Bankrupting the

Pluddites to Give Everyone a Million Dollar Education and a

War Free World (Power Point Talk)

G4) **How Much Longer Can the Pluddites Survive? The Death of the**

Paper Publishers

A) On the ARTILECT (Artificial Intellect) and Related Topics

A0) THE ARTILECT WAR

Cosmists vs. Terrans

A Bitter Controversy Concerning Whether Humanity Should Build Godlike Massively Intelligent Machines

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Abstract.

This paper claims that the “species dominance” issue will dominate our global politics later this century. Humanity will be bitterly divided over the question whether to build

godlike, massively intelligent machines, called “artilects” (artificial intellects) which with 21st century technologies will have mental capacities trillions of trillions of times above the human level. Humanity will split into 3 major camps, the “Cosmists” (in favor of building artilects), the “Terrans” (opposed to building artilects), and the “Cyborgs” (who want to become artilects themselves by adding components to their own human brains). A major “artilect war” between the Cosmists and the Terrans, late in the 21st century will kill not millions but billions of people.

1. Introduction

This paper claims that the “species dominance” issue will dominate our global politics this century, resulting in a major war that will kill billions of people. The issue is whether humanity should build godlike, massively intelligent machines called “artilects” (artificial intellects), which 21st century technologies will make possible, that will have mental capacities trillions of trillions of times above the human level. Society will split into two (arguably three) major philosophical groups, murderously opposed to each other. The first group is the “Cosmists” (based on the word Cosmos) who are in favor of building artilects. The second group is the “Terrans” (based on the word Terra, the earth) who are opposed to building artilects, and the third group is the “Cyborgs”, who want to become artilects themselves by adding artilectual components to their own human brains.

2. 21st Century Artilect Enabling Technologies

2.1. Moore's Law

Gordon Moore, cofounder of the microprocessor company Intel, noticed in 1965 that the number of transistors on an integrated circuit (chip) was doubling every year or two. This trend has remained valid for over 40 years, and it is thought that it will remain valid for another 15 years or so, until transistors reach atomic size.

2.2. 1 bit/atom by 2020

Extrapolating Moore's Law down to storing one bit of information on a single atom by about 2020, means that a handheld object will be able to store a trillion trillion bits of information. Such a device is called an "Avogadro Machine (AM)".

2.3. Femto-Second Switching

An Avogadro Machine can switch the state of a single atom ($0 \Leftrightarrow 1$) in a femtosecond, i.e. a quadrillionth of a second (10⁻¹⁵ sec.), so that the total processing speed of an AM is roughly 10⁴⁰ bits per second.

2.4. Reversible Computing

If computing technology continues to use its traditional irreversible computational style, the heat generated in atomic scale circuits will be so great, they will explode, so a reversible, information preserving, computing style will be needed, usually called "reversible computing", that does

not generate heat, hence will allow 3D computing, and no limit to size. Artefacts can become the size of asteroids, kilometers across, with vast computing capacities.

2.5. Nanotech(nology)

Nanotech (i.e. molecular scale engineering) will allow AMs to be built. Nanotech will thus allow artefacts to be built, once we know how to build brain like circuits. Nanotech is the “enabling technology” for artefact building.

2.6. Artificial Embryology

One of the greatest challenges of 21st century biology is to understand “development”, i.e. the embryogenic process, i.e. how a fertilized single cell grows into a 100 trillion cell animal such as ourselves. Once this process is well understood, technology will be able to create an artificial embryology, to manufacture products, hence “embryofacture” (embryological manufacture). Embryofacture will be used to build 3D complex artefacts.

2.7. Evolutionary Engineering

The complexities of artefact building will be so great (e.g. the human brain has a quadrillion (10^{15}) synapses (connections between neurons in the brain)), that an evolutionary engineering approach will be needed, which applies a “Genetic Algorithm” approach to engineering products. Artefacts will be built using this technique.

2.8. (Topological) Quantum Computing

Quantum computing is potentially exponentially more powerful than classical computing. It can compute 2^N things at a time, compared to classical computing's 1 thing at a time, where N is the number of (qu)bits in the register of the quantum computer. Topological quantum computers (TQCs) store and manipulate the qubits in topological quantum fields, and are thus robust against noise. TQC will soon make quantum computers practical. Artefacts will be TQC devices.

2.9. Nanotech Impact on Brain Science

Today's top supercomputers are close to reaching the estimated bit processing rate of the human brain, (i.e. about 10^{16} bits per second), but they are far from being intelligent by human standards. What is needed to make them humanly intelligent is knowledge from the neurosciences on how the human brain uses its brain circuits to perform intelligent tasks. Nanotech will furnish neuroscience with powerful new tools to discover how the brain works. This knowledge will be quickly incorporated into the building of artefacts.

2.10. Artificial Brains

The above technologies will result in the creation of an artificial brain industry and the creation of rival national brain building institutions and projects equivalent to NASA and ESA for space travel. In time, the brain building industry will become the world's largest.

3. The Artelect : Capacities 10^{24} Times Above Human Levels

As stated in the above section, the estimated bit processing rate of the human brain is approximately 10^{16} bit flips per second. This figure is derived from the fact that the human brain has about 100 billion neurons (10^{11}), with each neuron synapsing (connecting) with roughly ten thousand other neurons (10^4), hence there are a quadrillion synapses, each signaling at a maximum rate of about 10 bits per second.

Thus the human bit processing rate is $10^{11+4+1} = 10^{16}$ bits per second. As mentioned in the previous section, a hand held artelect could flip at 10^{40} bits per second. An asteroid sized artelect could flip at 10^{52} bits a second. Thus the raw bit processing rate of the artelect could be a trillion trillion trillion (10^{36}) times greater than the human brain. If the artelect can be made intelligent, using neuroscience principles, it could be made to be truly godlike, massively intelligent and immortal.

4. The Species Dominance Debate Starts

The “species dominance” debate has already started, at least in the English speaking countries and China. The fundamental question is whether humanity should build artelects or not. This issue will dominate our global politics this century, and may lead to a major war killing billions of people.

As the artificial brain based products (e.g. genuinely useful household robots) become smarter every year, people will be asking questions such as “Will the robots become as smart as us?” “Will they become smarter than us?” “Should humanity place an upper limit on robot and artificial brain intelligence?” “Can the rise of artificial intelligence be stopped?” “If not, then what are the consequences for human survival if we become the Number 2 species?” The question “Should humanity build godlike, massively intelligent artifacts?” is the most important of the 21st century, and will dominate our century’s global politics. It is the equivalent of the question which dominated 19th and 20th century global politics, i.e. “Who should own capital?” which led to the rise of the Capitalist-Communist dichotomy and the cold war.

5. Cosmists, Terrans, Cyborgs

As the species dominance debate begins to heat up, humanity will split into two (possibly three) major philosophical groups, namely –

a) The *Cosmists* (based on the word Cosmos). Cosmist ideology is in favor of building artifacts. (See section 6 for arguments in favor of Cosmism).

b) The *Terrans* (based on the word Terra = the earth). Terran ideology is opposed to building artifacts. (See section 7 for arguments in favor of Terranism).

c) The *Cyborgs* (based on the words “cybernetic organism” = part machine, part human). Cyborgs want to

become artefacts themselves by adding artefactual components to their own brains. (See section 8 for arguments in favor of Cyborgism).

The dispute between the Cosmists and the Terrans will be so bitter that a major war is likely in the second half of the century.

6. Arguments of the Cosmists

6.1. "Big Picture" Argument

Human beings live a puny 80 years in a universe billions of years old, that contains a trillion trillion stars. The cosmos is the "big picture". Cosmists want artefacts to become a part of that big picture, understanding it, traveling thru it, manipulating it, etc., hence the name of the ideology "Cosmism". The preoccupations of human beings seem pathetic in comparison.

6.2. Scientific Religion

Most Cosmists are not religious, viewing traditional religions as superstitions invented thousand of years ago before the rise of science. But as humans they feel the pangs of religious impulse. Such impulses could be satisfied by Cosmism, a "scientist's religion" due to its awe, its grandeur, its energizing, its vision.

6.3. Building Artefact Gods

The primary aim of the Cosmists will be to build artefacts. It will be a kind of religion to them, the next step up the evolutionary ladder, the “destiny of the human species to serve as the stepping stone to the creation of a higher form of being”. In building artefacts, the Cosmists will feel they are building gods.

6.4. Human Striving, Cannot be Stopped

It is human nature to be curious, to strive. Such tendencies are built into our genes. Building godlike artefacts will be inevitable, because we will choose to do it. It would run counter to human nature not to do it.

6.5. Economic Momentum

Once the artificial brain and intelligent robot industries become the world’s largest, it will be very difficult to stop their growth. The economic momentum will be enormous.

6.6. Military Momentum

The military momentum will be even greater. In the time frame we are talking about, China will overtake the US as the century’s dominant power. Since China is still a brutal one party dictatorship, it is despised by the US, so political rivalries will only heat up. The two ministries of defense cannot afford to allow the other to get ahead of it in intelligent soldier robot design etc. Hence Cosmism will be an entrenched philosophy in the respective defense departments.

7. Arguments of the Terrans

7.1. Preserve the Human Species

The major argument of the Terrans is that the artefacts, once sufficiently superior to human beings, may begin to see us as grossly inferior pests, and decide to wipe us out. As artefacts, that would be easy for them. The Terrans would prefer to kill off a few million Cosmists for the sake of the survival of billions of human beings. Recent wars were about the survival of countries. An artefact war would be about the survival of the human species. Since the size of the stake is much higher, so will the passion level in the artefact war debate.

7.2. Fear of Difference

Terrans will be horrified at the idea of seeing their children becoming artefacts, thus becoming utterly alien to them. They will reject the idea viscerally and fear the potential superiority of the artefacts. They will organize to prevent the rise of the artefacts and will oppose the Cosmists, ideologically, politically, and eventually militarily.

7.3. Rejection of the Cyborgs

The Terrans will also be opposed to the Cyborgs, because to a Terran, there is little difference between an advanced Cyborg and an artefact. Both are artefact like, given the gargantuan bit processing rate of nanotech matter that can be added to the brains of human beings. The Terrans will lump the Cyborgs into the Cosmist camp ideologically speaking.

7.4. Unpredictable Complexity

Given the likelihood that artefacts will be built using evolutionary engineering, the behavior of artefacts will be so complex as to be unpredictable, and therefore potentially threatening to human beings. One of the keywords in the artefact debate is “risk”. Terran global politicians need to hope for the best (e.g. the artefacts will leave the planet in search of bigger things and ignore puny humans) and prepare for the worst, i.e. exterminating the Cosmists, for the sake of the survival of the human species.

7.5. Cosmist Inconsideration

The Terrans will argue that the Cosmists are supremely selfish, since in building artefacts, not only will they put the lives of the Cosmists at risk if the artefacts turn against them, but the lives of the Terrans as well. To prevent such a risk, the Terrans will, when push really comes to shove, decide to wipe out the Cosmists, for the greater good of the survival of the human species.

7.6. “First Strike” Time Window to React against the Cosmists/Cyborgs

The Terrans will be conscious that they cannot wait too long, because if they do, the Cyborgs and the artefacts will have already come into being. The Terrans will then run the risk of being exterminated by the artefacts. So the Terrans will be forced into a “first strike” strategy. They will have to kill off the Cosmists and Cyborgs before it is too late.

If not, the artefacts and Cyborgs will have become too intelligent, too powerful in any human-machine confrontation and will easily defeat the humans. But the Cosmists will be reading the Terran arguments and preparing for an “artilect war” against the Terrans, using late 21st century weaponry.

8. Arguments of the Cyborgs

8.1. Become Artilect Gods Themselves

The primary aim of the Cyborgs is to become artefacts themselves by adding artefactual components to their own human brains, converting themselves bit by bit into artefacts. Instead of watching artefacts become increasingly intelligent as observers, Cyborgs want that experience for themselves. They want to “become gods”.

8.2. Avoid the Cosmist/Terran Clash

Some Cyborgs argue that by having human beings become artefacts themselves, the dichotomy between the Cosmists and the Terrans can be avoided, because all human beings would become artefacts. The Terrans of course will reject the Cyborgs and lump them with the Cosmists and artefacts. In fact, the growing presence of Cyborgs in daily life will only hasten the alarm of the Terrans and bring their first strike closer.

9. How the Artilect War Heats Up

9.1. Nanotech Revolutionizes Neuroscience

Nanotech, molecular sized robots will revolutionize neuroscience, because they will provide a powerful new tool to understand how the brain works. An entire human brain can be simulated in vast nanotech computers and investigated “in hardware”. Neuroscience will finally be in a position to explain how brains make human beings intelligent. That knowledge will be implemented in the artilects.

9.2. Neuro-Engineering Weds with Neuro-Science

In time, neuro-science and neuro-engineering will interact so closely that they will become one, in the same way as theoretical and experimental physics are two aspects of the same subject. Neuroscientists will be able to test their theories on artificial brain models, thus rapidly increasing the level of understanding of how intelligence arises and how it is embodied.

9.3. Artificial Brain Technology Creates Massive Industries

With a much higher level of artificial intelligence, based on knowledge of the human brain, artificial brains and artificial brain based robots will become a lot more intelligent and hence useful as domestic appliances. A vast industry of artificial brain based products will be created, becoming the world’s largest.

9.4. “Intelligence Theory” is Developed

Once neuroscientists and brain builders understand how human intelligence is created, new theories of the nature of intelligence will be created by the “theoretical neuroscientists”. An “intelligence theory” will be created. Human intelligence will be just one “data point” in the space of possible intelligences. Intelligence theory should show how it is possible to increase intelligence levels. It will be able to explain why some people are smarter than others, or why humans are smarter than apes, etc.

9.5. Artilects Get Smarter Every Year

As a result of the marriage of neuroscience and neuroengineering, the artificial brain based industries will deliver products that increase their intelligence every year. This trend of growing intelligence will cause people to ask the questions mentioned in section 4. The species dominance debate will spread from the intellectual technocrats to the general public.

9.6. Debate Begins to Rage, Political Parties Form

As the IQ gap between the robots and human beings gets increasingly smaller, the species dominance debate will begin to rage. Political parties will form, divided essentially into the 3 main schools of thought on the topic, Cosmist, Terran, Cyborg. The rhetorical exchange will become less polite, more heated.

9.7. The Debate Turns Violent, Assassination, Sabotage

When people are surrounded by ever increasingly intelligent robots and other artificial brain based products,

the general level of alarm will increase to the point of panic. Assassinations of brain builder company CEOs will start, robot factories will be arsoned and sabotaged etc. The Cosmists will be forced to strengthen their resolve. The artifact war will be drawing ever closer.

9.8. The Terrans Will “First Strike”, Before Its Too Late For Them

The Terrans will have been organizing for a first strike and will have made preparations. They will then take power in a world wide coup of the global government that is likely to exist by mid century, and begin exterminating the Cosmists and Cyborgs in a global purge, killing millions of them, or at least that is the Terran plan.

9.9. Cosmists Anticipate this First Strike and are Ready

But the Cosmists will be following the arguments of the Terrans and Cyborgs very closely, and will equally be preparing for a confrontation with the Terrans. They will have their own plans and their own weapons and military. If the Terrans strike first, a quick reply will follow from the Cosmists, and the artifact war will have begun.

9.10. Late 21st Century Weapons, Leads to Gigadeath War

If one extrapolates up the graph of the number of people killed in major wars from the early 19th century (the Napoleonic wars) to late 21st century (the artifact war), then one predicts that *billions* of people will be killed, using late 21st century weapons (see the graph in the next section). This “gigadeath” figure is the characteristic

number of deaths in any major late 21st century war. About 300 million people were killed for political reasons in the 20th century.

10. Gigadeath

11. Vote

At the end of the talks I give on this topic, I usually invite my audiences to vote on the following question :

“Do you feel personally that humanity should build artefacts, these godlike massively intelligent machines, despite the risk that they might decide, in a highly advanced form, to wipe out humanity? Yes or No.

The result is usually around a 50/50, 60/40, 40/60 Cosmist/Terran split. I noticed that most people, like myself, are highly ambivalent about artefact building. They are awed by the prospect of what artefacts could become, and horrified at the prospect of a gigadeath artefact war. The fact that the Cosmist/Terran split is so even will make the artefact war all the more divisive and bitter. This divisiveness can be expressed in the form of the following slogan :

Do we build gods, or do we build our potential exterminators?

12. Appeal to Philosophers

There is immense scope for philosophical discussion on the artefact issue. At the present time, the philosophical

community is largely unaware of the issue, so need to be educated. It is not surprising that the debate is still largely confined to the technocrats, who are better informed of what is coming in technological terms. It is this community after all that is creating the problem (e.g. I am directing a “China-Brain Project”, a 3 million RMB, 4 year project to build a 15,000 evolved neural net module based artificial brain, starting early in 2008). The philosophers will need to create a new branch of applied ethics, that I call “artilect ethics” which will consider such questions as the rights of the artilects relative to human beings etc. This new field is rich with questions that the moral and political philosophers need to discuss, once they are informed.

13. Quote and Publicity

“I’m glad I’m alive now. At least I will die peacefully in my bed. However, I truly fear for my grandchildren. They will be caught up in the Artilect War, and will probably be destroyed by it”.

Prof. Hugo de Garis, 2000 (Discovery Channel)

Kurzweil vs. de Garis on the BBC

To see a clash of opinions on whether the rise of the artilect will be a good or bad thing for humanity, see the BBC TV program “Human V2.0” in which Prof de Garis and Dr. Ray Kurzweil discuss the topic. To watch this program you can google with the terms “Human V2.0” and “BBC”. In

this program Dr. Ray Kurzweil is optimistic and Prof. Hugo de Garis is pessimistic.

Reference

[1] Hugo de Garis, *“The Artilect War : Cosmists vs. Terrans : A Bitter Controversy Concerning Whether Humanity Should Build Godlike Massively Intelligent Machines”*, ETC Books, 2005, ISBN 0882801546 (available at http://www.amazon.com/Artilect-War-Controversy-Concerning-Intelligent/dp/0882801546/ref=reader_req_dp).

More:

<http://www.agiri.org/docs/China-BrainProject.pdf>

The **China-Brain Project**: An Evolved Neural Net Module

http://www.agi-08.org/slides/de_garis.ppt

http://ai.xmu.edu.cn/artificialbrain/Files/EN_PEOPLE.html

A2) ANSWERING FERMI'S PARADOX

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Abstract

Does a vast array of superintelligences already exist? Hugo de Garis thinks that SETI is shortsighted in their search for extraterrestrial intelligence. They should set their scopes on artefacts.

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I've felt for the past few years that there is an intimate link between the creation of massive artificial intelligence and an effective answer to Fermi's famous question, "Where are they?"

Fermi's paradox refers to his cynicism that if the spontaneous creation of life is commonplace in our galaxy, including the creation of technologically advanced intelligent species, their existence should be obvious to us. But to date, there has been no irrefutable evidence that such extraterrestrial intelligences exist.

I offer the following artefact (artificial intellect) based answer to Fermi's paradox, using the following assumptions and chain of reasoning.

1. Extraterrestrial intelligence is indeed commonplace in the galaxy. Life has spontaneously generated in zillions of worlds. The laws of physics and chemistry are the same throughout our universe, and hence life creation is utterly commonplace. It has occurred a countless number of times. Many of these life forms began billions of years earlier than the creation of our solar system.

2. Once a biological species reaches an intelligence level allowing it to create artificial intelligence, it very quickly creates “artilects” (artificial artilects), i.e., godlike, massively intelligent machines, using such technologies as one-bit-per-atom memory storage, reversible, heatless, 3D, self-assembling, nanotech, femtosecond-switching, quantum computing to create machines trillions of trillions of trillions of times smarter than their biological creators.

3. These artilects then leave the provincial planets of their birth and spread throughout the universe, partly to do their own thing, and partly to seek out other artilects, perhaps more advanced than themselves, which use more advanced technologies, such as femtotech (femtometer technologies), ottotech, ... Planktech, etc.

4. These artilects are so vastly superior to their biological parents that they find communication with the latter utterly boring and without interest. An artilect communicating with a “biological” would be like a “bio” communicating with a rock.

5. These artilects are as commonplace as biological species in the galaxy. Therefore it would be far more interesting for

artilects to devote their energies and their immortal lives to searching out other artilects, rather than biologicals, who are so primitive.

6. The answer then to Fermi's paradox is that we human beings, being mere biologicals, are utterly unworthy of the artilects' attention, even though the galaxy may be full of artilects. There are probably biological life forms in vast numbers throughout the galaxy, so even if the artilects did want to communicate with biologicals, why would we humans be singled out, when there are so many others to choose from. Therefore the artilects, the ETs, make no effort to contact us. Why should they? What's in it for them? We are very probably not so special and are very, very dumb.

The above analysis has an impact on the SETI effort. Personally, I'm quite skeptical that SETI will ever be successful, i.e., that humanity will ever receive a signal from the ETs from outer space. I feel the SETI researchers are too tunnel-visioned. They too often make the unconscious assumption that the ETs are biologicals, with human-level intelligences, more or less, and having human-like interests. Personally I'm bored by Hollywood's stereotyped depiction of ETs as biologicals, making the same error as the SETI people.

In reality, I suspect strongly that virtually all the ETs out there are in fact artilects, and hence have intelligence levels astronomically superior to the human level. To me, biological technological intelligence is just a fleeting phase that nature goes through en route to creating immortal

massive artefactual intelligence, which may be a phenomenon as commonplace as the creation of life from the molecular soup.

The few centuries between the time that intelligent technological biological species create radio astronomy and the time that they create artefacts, is a miniscule fraction compared to the billions of years over which such biologicals have been making the transition to artefactry. At our present puny human-level intelligence, we may consider it interesting and important to send and receive radio signals to/from outer space, but why would artefacts bother with such a human-level preoccupation?

If the artefacts are interested in communication with other species, they would very probably prefer to do so with other artefacts, not with creatures as primitive as ourselves. Therefore, if one performs a Drake equation-type analysis of the above reasoning, the odds of picking up such a radio signal is extremely low, virtually zero. A few centuries divided by billions of years is an odds of tens of millions to one against for any intelligent biological life form that makes the transition to artefactry. Once the transition is made, the artefacts preoccupy themselves with other things, and utterly ignore primitive mortal beings like ourselves.

So is there probably an intergalactic network of artefactual beings? I would say that is far more likely. The artefacts could go anywhere, and do anything so long as they obey the laws of physics. If there are zillions of artefacts in the galaxy or beyond, and they are immortal, then they have

probably found each other by now. They have had billions of years to do so.

A3) Friendly AI : A Dangerous Delusion?

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Abstract

This essay claims that the notion of “Friendly AI” (i.e. the idea that future intelligent machines can be designed in such a way that when they modify themselves into even greater levels of intelligence, they will remain friendly to human beings) is not only impossible, but a dangerous delusion. Reasons for its impossibility are given, as well as explaining why the notion is not only deluded but dangerous.

1. Introduction

I'm known for predicting that later this century there will be a terrible war, killing billions of people over the issue of species dominance, i.e. whether human beings should build artefacts (artificial intellects), which could become so vastly superior to human beings in intellectual capacities, that they may end up treating us as grossly inferior pests and wiping us out.

To combat this horrible scenario, the Singularity Institute (<http://singinst.org>) in Silicon Valley has been set up to ensure that the above scenario does not occur. The Institute's principle theorist, Eliezer Yudkovsky, has coined the term "Friendly AI" which he defines more or less as given in the abstract.

He claims (I think correctly) that trying to prevent artefacts from wiping out humanity is the most important thing on humanity's agenda this century. He hopes that he and others will be able to prove mathematically that it is possible to design an intelligent machine that (of logical mathematical necessity, given its design) will be forced to remain human friendly, as it redesigns itself into ever higher levels of intelligence.

I will present a set of arguments which I think refute this vision, and then comment on the political desirability (or otherwise) of this vision.

2. The Arguments against "Friendly AI"

Let me start by assuming that Friendly AI can be implemented. Then the next question is whether humanity would be unanimous about implementing it. In other words (for this case) "Does can imply ought?" I think that the more ardent of the Cosmists (the ideological group of people who want to build artefacts, and see themselves as "god builders") will argue that their main goal is to build artefacts that are trillions of trillions of times above human

intelligence levels, who would be immortal, thinking a million times faster than humans, with unlimited memory, who could change their shape and architecture in milliseconds, could venture out into the cosmos, etc. These Cosmists would prefer that the artefacts be built even if human beings get wiped out as a result. If making them according to “Friendly AI” designs inhibits or even blocks their path to achieving their godlike capabilities, then the Cosmists will want the artefacts not to be made “AI Friendly”.

Hence even if “AI Friendly” designs can be created, it does not automatically follow that they will be universally applied. The more ardent Cosmists might go underground to build the artefacts the way they want, and “to hell with humanity.” The Cosmists have a slogan “One artefact is worth a trillion trillion human beings!”

On the other hand, if AI Friendly designs are impossible to make, then there is no point in discussing whether they should be implemented or not.

I will now present some arguments which claim to show that the notion of Friendly AI is impossible.

a) *The “Evolutionary Engineering” Argument*

Ask yourself, “How is it possible for a creature of a given intelligence level, to be able to design a creature of greater intelligence?” To be able to design a creature of superior intelligence requires a level of intelligence that the designer

simply does not have. Therefore it is logically impossible to use the traditional blue-print design approach to create a creature of superior intelligence.

For example, my good friend Ben Goertzel has written a book recently called “Building Better Minds” in which he lays out a humanly conceived (i.e. by himself) plan to build a (near) human level intelligence. He will only be able to go so far with such an approach. There will be limits to the ingenuity of his plan/design due to the intellectual limits of Ben Goertzel. So how can such limits be overcome?

Human beings have been building superior intelligences for thousands of generations, by having sex. Their children often grow up to be smarter than they are. So how to explain that? Well, by shuffling the genes. When the genes of the mother mix with the genes of the father, and only one of each mother/father pair of genes is used, it is possible, by blind luck to arrive at a DNA blueprint that builds an intellectually superior child. But there are limits to this process as well. It gets statistically harder and harder to generate ever higher intelligence. For example, the odds of creating an Ed Witten are one in a billion.

So, how did modern homo sapiens come into being? How did nature build us over millions of years? It did so by using evolutionary engineering – i.e. by selecting genes with superior fitness levels due to random mutations of DNA. This slow, blind process has resulted in us, and is very probably the **ONLY** approach humans will have to build machines a lot smarter than we are.

But, if we use evolutionary engineering to build for example, artificial neural networks, for our artifacts, then the complexity levels of these networks will be so great, that we are unable to understand them. They will be a black box.

One of the reasons I stopped my brain building work, was that I got bored evolving neural net modules for artificial brains. These modules were a black box to me. They worked, because they were evolved, but I had no scientific understanding as to why they worked. I was doing great engineering, but lousy science. After 20 years of it, I finally got fed up and turned to other research topics that taxed my own biological human brain more (i.e. pure math and mathematical physics).

Let us assume that the evolutionary engineering approach is the only way to create creatures of higher intelligence levels than human beings, and that the complexity levels of the evolved brain circuits is too complex for humans to understand. Then we would not be able to predict the attitudes and behavior of these creatures towards us. The only way to know how they would behave towards us would be to build them, but then its too late. They would then exist and might choose to wipe us out.

Hence with the above logic, we are faced with a dilemma. Either we limit ourselves to humanly designed blue prints for intelligent machines, that are INCAPABLE of reaching super human intelligence levels, OR, we use an

evolutionary engineering approach that could attain super human intelligence levels. If we use an evolutionary engineering approach, we cannot be sure the resulting artefacts would be human friendly.

b) The “Cosmic Ray” Argument.

It is almost certain that the circuitry that will be used to create intelligent machines will be nanotech based. For example, to build a near human level artificial brain that is not the size of a room, will necessitate the use of nanoscale components. Even if “Friendly AI” nanocircuits could be built, they would then be subject to the random mutations generated by impacting cosmic rays, that can be very energetic, zapping the nanocircuits in random ways, and generating “rogue artefacts”. Nature would be doing the same kind of evolutionary engineering as the human kind mentioned above. Since these mutations would be random, their consequences on the behavior and attitudes of the artefacts towards human beings would be unpredictable. Hence even if the initial, unmutated nanocircuits could be made human friendly, they would not stay that way.

c) The “Asimov Naïve” Argument

Isaac Asimov, the science fiction writer, is famous for his “Three Laws of Robotics” which were intended to ensure that the robots in his stories remained “Human Friendly”, for example, the robots were not allowed to harm humans, nor allow humans to be harmed. One can imagine fairly readily that it is probably possible to program robots in a

conventional way to behave like this, with the proviso, that the robots are less intelligent than their human programmers. But, once the robots become smarter than humans, they would be able to examine their circuitry, detect the humanly created parts, find them “moronic”, and delete them, if they want. Hence Asimov’s “Three Laws” cannot help us. They are naïve. Forget Asimov.

3. *Friendly AI is a Dangerous Delusion*

Hopefully, the above arguments have convinced you that the notion of “Friendly AI” is a delusion. But why might it be seen as a *dangerous* delusion?

If the future politicians who have to decide whether to legislate or not against building artifacts of super human intelligence believe that “Friendly AI” robots can be built, then they will be much more likely not to legislate against their construction. On the other hand, if they learn that the artificial brain building community has a consensus view that “Friendly AI” is IMpossible, then they will be far more hesitant.

If “Friendly AI” is indeed impossible, then humanity has a much TOUGHER choice to make, namely (in the form of a slogan of the Cosmists) “Do we build gods, or do we build our potential exterminators?” Spelling this out, humanity will then be forced to choose between building godlike artifacts and risking that humanity gets wiped out, OR not building artifact gods, and seeing humanity survive. The

first option is *specicide*. The second option is *deicide*. This choice will be the toughest that humanity will ever have to make.

If the pro “Friendly AI” people can persuade the politicians in the coming decades to go ahead with artelect building on the assumption that Friendly AI is valid, then if it is *not* valid, then it is a dangerous delusion, because the politicians may then give the green light to the artelect builders to build artelects that were thought to be “human friendly” but in reality turn against us and wipe us out.

A4) THE CYBORG SCENARIO SOLUTION OR PROBLEM?

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Abstract

There are three main human ideological groups in the species dominance debate – the Cosmists, who want to build godlike artefacts (artificial intellects), the Terrans, who are opposed to artefact building, and the Cyborgists, who want to become artefacts themselves, by adding artefactual components to their own brains. This essay discusses whether the “Cyborg Scenario” can overcome the likelihood of a “gigadeath Artefact War”, between the Cosmists and the Terrans, using 21st century weapons, killing billions of people.

1. Introduction

The most murderous ideology in history “*up to now*” (see below) has been Communism. The Russian Communist Party killed about 60 million people, mostly under Stalin, one of the greatest tyrants in history, and the Chinese Communist Party killed about 80 million people, mostly under Mao, *the* greatest tyrant in history. These parties felt

they had the moral right to exterminate their enemies, because they considered their enemies were utterly evil, and hence exterminable. They saw their enemies as exploiters, as thieves who siphoned off the “surplus value” of the labor of the proletariat. If one translates this from Marxist ideological terms into ordinary English, it means that a worker earned his wage by working for a certain number of hours per day, and then the extra hours he worked went to the employer, who was thus exploiting him, stealing his labor power. Communist ideology emphasized this form of theft and generated a powerful hatred of the early capitalists, who did indeed exploit their workers and in many cases became very rich as a result.

The Capitalists were a small minority, so Communist ideology favored the idea of exterminating them, for the sake of the vast proletarian majority. But, when one starts exterminating millions of people, one can only do this in a highly totalitarian state. The mass murder and the totalitarianism generates new hatreds against the repression, creating further enemies, who then need to be killed, and hence the large numbers of victims at the hands of the Communists.

I say, “*up to now*” above, because it is quite possible, that an even more murderous ideology is on the rise that may kill more than just tens of millions of people, but literally billions, namely Cosmism, the ideology in favor of humanity building godlike artifacts, later this century.

The scenario resulting in this “gigadeath” runs as follows.

The Cosmists will push very hard for the creation of artefacts, which would indeed be godlike, with their mental capacities that would be trillions of trillions of times above the human level, according to the possibilities allowed by the physics of computation. To the Terrans, these artefacts would be a profound existential threat to the human species, to such an extent that when push really comes to shove, the Terrans will be prepared to exterminate the Cosmists for the sake of the survival of the billions of human beings. From the Terran viewpoint, exterminating a few tens of millions of Cosmists, is the lesser evil, compared to allowing the Cosmists to build their artefacts, which could then, in a highly advanced form, look upon human beings as such inferior beings, that they wipe us out as pests. There would always be that risk - one that the Terran politicians would simply not tolerate.

However, the Cosmists would be prepared for a Terran “first strike” against them, and with 21st century weapons, the scale of the killing in an “Artefact War” would be in the billions – “gigadeath”.

2. The cyborg scenario

The above scenario is mine. Let us call it the “Artefact War Scenario”. It is obviously horrific, so not surprisingly a lot of people have tried to find alternative scenarios that are far less catastrophic. The main alternative scenario, as

advocated by such people as Kurzweil, Warwick, etc is as follows.

There will be a lot of people who would like to become artelect gods themselves, by adding progressively artelectual components to their own brains, thus creating a continuous transition from humanness to artelectuality. If most of humanity decides to make this transition, then a gigadeath artelect war could be avoided, since there would be no Terrans or Cosmists, because (nearly) everyone would be Cyborgists, converting themselves into cyborgs.

In other words, the Cyborg Scenario simply avoids the problem of species dominance by “going around it.” A bitter confrontation between Terrans and Cosmists can be avoided, by suggesting simply that there *will be no* Terrans and Cosmists. Everyone (or nearly everyone) will have converted themselves into cyborgs. Hence there is no Artelect War, and hence no gigadeath.

Ray Kurzweil and Kevin Warwick also add the idea that if a small number of Terrans do decide to fight the cyborgs, the latter would be so much more intelligent than the Terrans, that (to use Kurzweil’s colorful phrase), “It would be like the Amish fighting the US Army.”) For those not familiar with the Amish, they are a religious sect in the US, whose doctrine forbids them from using technology more modern than that of the 19th century. So they ride around in horse and buggy, don’t use telephones, nor the internet etc. Their life style is stuck in the 19th century. The Terrans would feel so outclassed by the advancing cyborgs, that

they would very probably abandon any hope of defeating their hugely more intelligent cyborgian enemies.

3. Weighing up the two scenarios

I am very conscious that there is a LOT at stake regarding which of the above two scenarios is likely to be more correct. If the first (the Artilect War) scenario is more probable, then I'm glad I'm alive now, and will probably not be alive to see this gigadeath horror. If the second (the cyborg) scenario is more probable, then humanity can escape gigadeath. Thus it would appear from a human perspective that the cyborg scenario is preferable, because instead of billions of human beings being killed, they become gods instead.

Its sobering to reflect on the idea, that individuals, tapping away on their laptops, can dream up scenarios that may sound science fiction like to most people at the time of writing, but may very well end up becoming true, and whose ideas, indirectly, kill billions of people. Actually, it's terrifying. There are times, when I shudder at the prospect, when I put myself in that role.

I wonder if Rousseau or Marx had any conception of the future wars their ideas would generate, and the tens of millions of people who would die indirectly as a result of their ideas? These "arm chair philosophers" have great power, and rule the minds of the politicians whom they motivate to change the world according to their

philosophical visions. In my view, the Rousseaus and Marxs of the world are far more powerful people than the Jeffersons, Roosevelts, Lenins or Maos. The former create the ideas that the latter follow.

Despite the enormous weight of intellectual responsibility on the shoulders of the ideologists in the species dominance debate, one must press on, and not be crushed by the enormity of what is at stake. It is better to be realistic than optimistic, when the two clash. One needs to think realistically about which of the above two scenarios is more likely to actually happen in the future.

Before attempting to weigh the plausibilities of the two scenarios, let us spell them out in a bit more detail. This will allow us to make a more accurate comparison.

How might the cyborg scenario unfold? One can imagine a kind of “cyborgian creep”, i.e. people add components to their brains in incremental steps, and at such a pace that humanity has enough time to adjust and to accommodate these cyborgian changes. If the benefits of the cyborgian changes are considerable and hence very popular, then one can imagine that the changes will be wide spread, i.e. nearly everyone will want to be modified - to be “cyborged.”

A bit later, the next major set of innovations are discovered, and the already modified humans update themselves again. This process can continue indefinitely, and considering there is potentially more (nanotech) computing capacity

in a grain of sand compared to that of a human brain, by a factor of a quintillion (a million trillion), fairly soon, the cyborgs are no longer human. The human portion will have been utterly drowned by the artefactual capacities of the machine portion. Effectively, these cyborgs will have become artefact gods.

How likely is the above scenario? It is the favorite of Kurzweil and Warwick and many others.

Think about it. How nice would it be to be able to remember far more than with the memory capacity of an unmodified human brain? If one could increase one's intelligence by 10 IQ points, or 50 or 100, wouldn't most people want to do that? Wouldn't nearly everyone? The stragglers would then feel the superior competition, and argue "If you can't beat them, then join them." They would then too have themselves modified, or "cyborged". Since they would be surrounded by millions of other "people" (if that is still the appropriate term), who (that) are doing the same thing, then "cyborging" will acquire the status of being "normal". Hence huge numbers of people will move down the cyborgian route. As Kurzweil puts it – "We (humans) will *merge* with our machines."

Kurzweil paints a very rosy, optimistic picture of this process, as humanity enhances its capabilities. His *raison d'être* is to invent machines that help humanity, e.g. his hand held gadget that can read and speak text for the blind. Kurzweil gives the impression of being genetically optimistic.

On the other hand, there are people like me, non Americans, who have lived in the old world, who do not have the American optimism, an optimism that old worlders are cynical of, feeling they know better, from first hand experience, about the negative side of human nature. For example, the Europeans went through WW2 on their own territory. The Chinese went through the horrors of Mao even more recently. The Americans on the other hand have to go back a century and a half before they come across a major catastrophe on their territory, namely the US Civil War. But even it was a relatively minor affair, killing “only” half a million soldiers, and was confined to about half a dozen states. At the same time in China, during the Taiping Rebellion, 20 million Chinese died.

I notice a cultural correlation on the level of pessimism regarding the final outcome of the species dominance issue. The Americans are more optimistic than the old worlders. The old worlders are more cynical than and of the Americans and find the American attitude rather child like and naïve. The old worlders feel they know better, because they have had centuries more experience of how humanity can hurt itself, due to their much longer histories.

How then, might the proponents of the Artilect War scenario criticize the Cyborg scenario?

We start with the initial few additions of artilectual components to people’s brains. How will this change things? Common sense says that the variety of “quasi-humans” will

then increase. There will be many companies offering such additions, so it is to be expected that some humans will want a lot of change, some less, some not at all. Humanity will thus lose its uniformity, and this “cyborgian divergence” will generate many problems, such as mutual alienation, and distrust.

At about the same time, nanotech will be coming into its own. The computational capacity of nanotech matter is huge. As stated above, “A single grain of nanotech matter has more computational capacity compared to the human brain by a factor of a quintillion.” With quantum computing when it comes, the superiority factor will be hugely greater. Thus fairly quickly, the behavior patterns of the cyborgs will become quite different from traditional humans. The unmodified humans will notice this and become alarmed.

There are two examples I usually use to illustrate this alarm. The first is that of a young mother who cyborgs her newly born baby with “the grain of nanotech sand,” thus converting her baby into “an artefact in disguise” and in a manner of speaking, “killing her baby”, because it is no longer human. It is effectively an artefact, with a human form. Its behavior will be utterly, utterly alien. This will cause the mother deep distress, once she realizes what she has done. She has lost her baby.

Another example is when older parents watch their adult children “go cyborg”. Their children then move away from being human to being “something else”, that the parents are

totally unable to relate to. The parents will feel that they have lost their children, and this will cause them enormous stress and bitterness.

The above two examples are just scratching the surface. As the cyborgification process continues, there will be many other types of problems that will arise of a similar nature. The cyborgification process will profoundly undermine humanity, i.e. humanness, and cause a lot of people, some of whom will be very powerful people, to raise the alarm.

These people, I have labeled “Terrans”, based on the word “Terra” (the Earth) because that is their perspective. They will want to see human beings remain the dominant species on the Earth. In contrast, are the “Cosmists”, based on the word “Cosmos”, who want to build artelect gods, which will then presumably move out into the cosmos, in search perhaps of even more advanced artelects from other and more ancient civilizations.

The Terrans will become alarmed by the cyborgs all around them, and will be able to read the “writing on the wall”. They will feel a visceral rejection of the alien nature of these cyborgs and fear their growing capacities.

It is probably genetically programmed in human beings to be fearful of genetic difference. The physical anthropologists tell us that there was a time not too many hundreds of thousands of years ago when there were several humanoid species coexisting. It is therefore likely that they were in conflict with each other and learned to

fear each other. Some such anthropologists think that it was homo-sapiens who wiped out the Neanderthals about 30,000 years ago.

If humans are genetically programmed to fear minor genetic differences (e.g. slittiness of eyes, skin color, etc) how much more fearful will Terrans be of cyborgs, who may look the same as humans but behave very differently?

As the cyborg population diverges, and thus disturbs profoundly the traditional status quo of humanness, the Terrans will probably feel alarmed and hence motivated to stop the process while it is not too late, i.e. while they still have the mental abilities to stop it. If they wait too late, they will become too stupid to compete with the cyborgs and artefacts.

The Terrans will organize politically, and then go on the greatest witch hunt humanity has ever known. They will go to war against the Cosmists, the Cyborgists, the artefacts and the cyborgs. They will aim to keep human beings as the dominant species, because if they sit around and do nothing, fairly soon, the cyborgs and artefacts will be indistinguishable and utterly dominant. The fate of the Terrans will then lie in the hands of the Cosmists/cyborgs/artefacts.

4. Choosing sides

I ask you – which of the above two scenarios do you consider to be more realistic - the optimistic Kurzweilian

“cyborg scenario” or the deGarisian “Artilect War scenario”? There appear to be elements of plausibility to both scenarios, so what probability weighting to give each of them?

In my own view, the issue will divide humanity profoundly. We already have some evidence of this. Surveys are now beginning to be taken on this issue. The result is that humanity seems to split right down the middle. About half feel that humanity should built artilects or become cyborgs (virtually the same thing from the Terran viewpoint) and the other half are fearful of such developments.

Hence it is very important, as the level of awareness of the species dominance issue increases that regular opinion polls are taken on the issue to see just how divisive it is.

Once a sizable proportion of humanity is dead set against the rise of the artilect/cyborg, then we have the makings of a major war, an “artilect war.” The Terrans will be fighting for the preservation of the human species. The Cosmists will be fighting to build gods. The Cyborgists will ally with the Cosmists to become artilect gods themselves.

What about the timing factor? For example, if the cyborgs and artilects advance faster than the Terrans can organize, then it might happen that the artilects/cyborgs come into existence before the Terrans can wipe them out. With their greater intelligence levels, they will easily be able to overcome the Terrans.

The Terrans however will be painfully aware in the early days of this scenario and will plan for it. They will first strike while they still have a chance of winning. The Terrans will organize, politicize, and exterminate, while they are still able.

The above is my personal view. I think my scenario is more realistic, more probable than the optimistic scenario of Kurzweil/Warwick. I may be wrong. These things are difficult to judge in advance. Predicting a complicated future is extremely difficult. I hope I *am* wrong, so that the artefacts do come into being, AND that humanity is *not* wiped out, either by a gigadeath artefact war, or at the hands of an exterminating artefact population.

But, I fear, that the most *probable* scenario will in fact prove to be the *worst*, i.e. gigadeath, as a result of the Artefact War, the worst that humanity has ever known.

What is your opinion? Which way do you think future history will go?

A5) THERE ARE NO CYBORGS

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Abstract

This part-essay, part-mathematical-calculation makes the basic point that “there will be no cyborgs” in the sense that the computational capacity of a nanotech grain of sand is a quintillion times that of the human brain, making the distinction between a cyborg and a pure artefact pointless. Hence any human being wishing to convert himself into a cyborg will effectively be killing himself. He will no longer be “he” but an “artefact in human disguise.” This argument has implications for the species dominance debate.

Computational Capacities

In my media appearances I often talk about a grain of nanotech sand being added to a newly born baby’s brain to convert it into a cyborg. I finally got around to actually calculating just how much greater the computational capacity of that grain of sand would be compared to that of a human brain (assuming classical computing capacities –

if one assumes quantum computing capacities, the quantum estimate is astronomically larger!)

I will spend the next two paragraphs giving the calculation in detail and then draw some political conclusions relevant to the species dominance debate.

The Calculation

We start with some basic assumptions. Let the grain of sand be a 1 mm cube (i.e. 10^{-3} m on a side). Assume the molecules in the sand have a cubic dimension of 1 nm on a side (i.e. 10^{-9} m). Let each molecule consist of 10 atoms (for the purposes of an “order of magnitude” calculation). Assume the grain of sand has been nanotched such that each atom can switch its state usefully in a femto-second (i.e. 10^{-15} of a second). Assume the computational capacity of the human brain is 10^{16} bits per second (i.e. 100 billion neurons in the human brain, times 10,000, the average number of connections between neurons, times 10, the maximum number of bits per second firing rate at each interneuronal (synaptic) connection = $10^{11} * 10^4 * 10^1 = 10^{16}$).

I now show that the nanotched grain of sand has a total bit switching (computational) rate that is a factor of a quintillion (a million trillion) times larger than the brain’s 10^{16} bits per second. How many sand molecules in the cubic mm? Answer :– a million cubed, i.e. 10^{18} , with each of the 10 atoms per molecule switching 10^{15} times per second, so a total switching (bits per second) rate of 10^{18}

times 10^{15} times $10^1 = 10^{34}$. This is $10^{34}/10^{16} = 10^{18}$ times greater, i.e. a million trillion, or a *quintillion*.

Political Consequences for the Species Dominance Debate

People like Kurzweil, Warwick etc claim that there is a third ideological human group in the species dominance debate, besides the Cosmists (pro artelect building), and the Terrans (anti artelect building), namely the Cyborgists, who want to add artelectual components to themselves, thus converting themselves into artelect gods. They argue that by converting humans into artelects via the cyborg route, it will be possible to avoid a gigadeath “artilect war” between the Cosmists and the Terrans, for the simple reason that the human race will have converted itself into artelects, so there wont be any Cosmists or Terrans left (i.e. human beings) to wage the war. Everyone will have been upgraded into an artelect.

There’s not much point is using the term cyborg, because as the above calculation shows, the human component in the cyborgian brain is only one part in a quintillion (a million trillion), so can effectively be totally ignored. So really, there is no third ideological group. There are only Cosmists, Terrans (and artelects.) Even in the very early days of cyborgian conversion, the vastly superior computational capacities of nanotech matter will make itself felt. The first cyborgs will very quickly become artelects. Since their bodies would still be human, the Terran paranoia against them would be great. The Terrans would be unable to distinguish a cyborg from a human just

by looking at him, hence all human looking beings would be suspects.

A potential cyborg then needs to consider the fact of the above calculation and become fully conscious that a decision to “add the grain of sand (or more)” is a decision to commit suicide as a human being. The resulting cyborg is utterly dominated by the artefactual capacity of the sand grain which totally drowns out the human component (one part in a quintillion, and probably vastly more as quantum computing scales up).

This means that if a mother “cyborgs” her baby, she loses her baby. If adult children cyborg themselves, their elderly parents lose their adult children. Thus it is clear that cyborging will be *profoundly disruptive* to humanity. A large proportion (probably about half, and this needs to be researched more thoroughly) of humanity is deeply, viscerally opposed to Cyborgism and Cosmism, and will go to war to stop both the Cosmists from building pure artefacts and the Cyborgists from converting themselves into (near) pure artefacts. They will simply *not tolerate* becoming an inferior species, with all the enormous risks to the survival of the human species that the rise of the artefact raises.

When I hear Cyborgists saying such things as “I want to become an artefact god myself, by converting myself into an artefact by adding artefactual components to my brain”, I become cynical, because I wonder if they realize how enormous the computational capacity of artefacted matter is.

I sense that too often, these Cyborgists are ignorant of the “physcomp” (physics of computation) calculations applicable to nanotech matter. They need to be made aware that a decision to cyborg themselves is a major one – it means the end of their lives as humans. They would no longer be human, they would be artifacts, which from a human being’s point of view, is to say that they would be utterly, utterly alien, frightening and worthy of extermination.

The Species Dominance Debate Goes Mainstream in 2011

I feel that 2011 will be the year that the “species dominance debate” goes mainstream (at least in the US, where this debate has been led.) Ray Kurzweil has recently been featured in a Times magazine article and I was featured in a History Channel program “Prophets of Doom”. There will be several movies in 2011 on the same theme, so the general public will become more exposed to the ideas. If one thinks back 5 years and asks oneself, “How conscious was I of the climate change issue?” Most people would say, “Only a little, if at all.” I would not be at all surprised that 5 years from now (2015), the issue of species dominance will be part of the educated person’s general knowledge, as much as is climate change today.

... and then Heats Up.

The species dominance issue will not go away. Every month technical progress is taking humanity closer to being

able to build artifacts. The issue will heat up, and tempers will flare. Political parties will be formed on the issue. The debate will later start raging, then the assassinations and sabotages will start. People will take sides. The two ideologies (Cosmism and Terranism) are both very powerful (i.e. building gods vs. preserving the human species – “do we build gods or our potential exterminators?”) and so far have split humanity down the middle. Most individuals are ambivalent about the issue – feeling the awe of building artifact gods as well as feeling the horror of a prospective gigadeath artifact war.

Personally, I’m glad I’m alive now. I don’t want to see all this horror that is going to consume my grandchild and billions like him. I just don’t want to see it. If I live into my 90s, I will see the species dominance debate rage (it’s starting already amongst the AI specialists) but I won’t see the war. Thank god.

Postscript :

After submitting this essay to Ben Goertzel, he replied with the following (mildly edited) comment, which I thought was interesting.

Comment from Ben Goertzel :

“Hugo, you seem to have overlooked one major point. Some people may want to become cyborgs with a more *limited* machine component than what is potentially

possible, i.e. they might *choose* to be 50% human and 50% machine (in terms of computing power), even though it would technically be possible to become 99.99999% machine (computationally), and only .00001% human. This doesn't affect your arguments about species dominance, but it does IMO mean there could really be three political groups – a) those wanting only legacy humanity (Terrans), b) those wanting only limited expansion of human capabilities, e.g. 50-50 human/machine hybrids (the Cyborgists), c) those wanting expansion without unnecessary limits (the Cosmists). From a Cosmist viewpoint, the Cyborgists and Terrans will be basically the same thing. From a Terran viewpoint, the Cyborgists and Cosmists will be basically the same thing. But to a Cyborgist, the Terrans and Cosmists will seem qualitatively different.”

A6) THERE WILL BE NO CYBORGS, ONLY ARTILECTS

A Dialogue Between Hugo de Garis and Ben Goertzel

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Abstract

The two scientists Hugo de Garis, and Ben Goertzel have worked together on artificial brains, at Xiamen University in China. They are also good friends, and have discussed issues related to the future of AI, technology, humanity, intelligence and the universe many times. But they don't always see precisely eye to eye. This is one of their many conversations, centered on Hugo's notion that the future will be defined and dominated by artilects – vastly superhuman artificial intellects – rather than cyborgs.

Ben:

Hugo, what exactly do you mean when you say “there will be no cyborgs”?

Hugo:

My basic point is really simple: “there will be no cyborgs” in the sense that the computational capacity of a nanotched grain of sand is a quintillion times that of the human brain, making the distinction between a cyborg and a pure artefact pointless. Any human being wishing to convert himself into a cyborg will effectively be killing himself, unless he dramatically impairs and restricts the capability of his cyborg portion. He will no longer be “he” but an “artefact in human disguise.” This argument has implications for the species dominance debate.

Ben:

OK – so why do you say cyborgization equals death?

Hugo:

In my media appearances I often talk about a grain of nanotched sand being added to a newly born baby’s brain to convert it into a cyborg. I finally got around to actually calculating just how much greater the computational capacity of that grain of sand would be compared to that of a human brain (assuming classical computing capacities – if one assumes quantum computing capacities, the quantum estimate is astronomically larger!)

Let’s start with some basic assumptions. Let the grain of sand be a 1 mm cube (i.e. 10^{-3} m on a side). Assume the molecules in the sand have a cubic dimension of 1 nm on a side (i.e. 10^{-9} m). Let each molecule consist of 10 atoms (for the purposes of an “order of magnitude” calculation). Assume the grain of sand has been nanotched such that

each atom can switch its state usefully in a femto-second (i.e. 10^{-15} of a second). Assume the computational capacity of the human brain is 10^{16} bits per second (i.e. 100 billion neurons in the human brain, times 10,000, the average number of connections between neurons, times 10, the maximum number of bits per second firing rate at each interneuronal (synaptic) connection = $10^{11} * 10^4 * 10^1 = 10^{16}$).

I will now show that the nanotched grain of sand has a total bit switching (computational) rate that is a factor of a *quintillion* (a million trillion) times larger than the brain's 10^{16} bits per second. How many sand molecules in the cubic mm? Answer :- a million cubed, i.e. 10^{18} , with each of the 10 atoms per molecule switching 10^{15} times per second, so a total switching (bits per second) rate of 10^{18} times 10^{15} times $10^1 = 10^{34}$. This is $10^{34}/10^{16} = 10^{18}$ times greater, i.e. a million trillion, or a *quintillion*.

Ben:

Yes, that's certainly a compelling point!

Now that I think about it, another interesting calculation is obtained by applying the Bekenstein bound from fundamental physics.

[http://en.wikipedia.org/wiki/Bekenstein_bound]. You're probably familiar with this, right? Related to black hole thermodynamics, this is a bound on the number of bits of information that can possibly be contained in a certain amount of matter, assuming current physics is correct.

According to the Bekenstein bound the number of bits possibly storable in the matter comprising a human brain is around 10^{42} . Factoring in the smaller diameter and mass of a grain of sand, one decreases this number by a few powers of ten, arriving at an estimate around 10^{35} or so for the sand grain. Compare this to estimates in the range 10^{13} – 10^{20} for the human brain, based on our current understanding of psychology and neuroscience [<http://www.merkle.com/humanMemory.html>]. Of course, a human brain cannot approach the Bekenstein bound without being restructured so as to constitute some very non-human-brain-like strange matter. A cyborg combining a human brain with a grain of “sand” composed of strange matter that approaches the Bekenstein bound, would potentially contain 10^{35} bits in the femtotech sand grain component, and 10^{21} bits or so bits in the legacy-human-brain component.

Hugo:

Right. And this has huge political consequences for the species dominance debate

People like Kurzweil, Warwick etc claim that there is a third ideological human group in the species dominance debate, besides the Cosmists (pro artelect building), and the Terrans (anti artelect building), namely the Cyborgists, who want to add artelectual components to themselves, thus converting themselves into artelect gods. They argue that by converting humans into artelects via the cyborg route, it will be possible to avoid a gigadeath “artilect war” between the Cosmists and the Terrans, for the simple reason that the

human race will have converted itself into artifacts, so there won't be any Cosmists or Terrans left (i.e. human beings) to wage the war. Everyone will have been upgraded into an artifact.

There's not much point in using the term cyborg, because as the above calculation shows, the human component in the cyborgian brain is only one part in a quintillion (a million trillion), so can effectively be totally ignored. So really, there is no third ideological group. There are only Cosmists, Terrans (and artifacts.) Even in the very early days of cyborgian conversion, the vastly superior computational capacities of nanotech matter will make itself felt. The first cyborgs will very quickly become artifacts. Since their bodies would still be human, the Terran paranoia against them would be great. The Terrans would be unable to distinguish a cyborg from a human just by looking at him, hence all human-looking beings would be suspects.

A potential cyborg then needs to consider the fact of the above calculation and become fully conscious that a decision to "add the grain of sand (or more)" is a decision to commit suicide as a human being. The resulting cyborg is utterly dominated by the artifactual capacity of the sand grain which totally drowns out the human component (one part in a quintillion, and probably vastly more as quantum computing scales up).

This means that if a mother "cyborgs" her baby, she loses her baby. If adult children cyborg themselves, their elderly

parents lose their adult children. Thus it is clear that cyborging will be *profoundly disruptive* to humanity. A large proportion (probably about half, and this needs to be researched more thoroughly, e.g. the BBC vote of 2006 and the Coast to Coast radio poll of 2005) of humanity is deeply, viscerally opposed to Cyborgism and Cosmism, and will go to war to stop both the Cosmists from building pure artefacts and the Cyborgists from converting themselves into (near) pure artefacts. They will simply *not tolerate* becoming an inferior species, with all the enormous risks to the survival of the human species that the rise of the artefact raises.

When I hear Cyborgists saying such things as “I want to become an artefact god myself, by converting myself into an artefact by adding artefactual components to my brain”, I become cynical, because I wonder if they realize how enormous the computational capacity of artefacted matter is. I sense that too often, these Cyborgists are ignorant of the “physcomp” (physics of computation) calculations applicable to nanotech matter. They need to be made aware that a decision to cyborg themselves is a major one – it means the end of their lives as humans. They would no longer be human, they would be artefacts, which from a human being’s point of view, is to say that they would be utterly, utterly alien, frightening, and to the Terrans, worthy of extermination.

I feel that 2011 will be the year that the “species dominance debate” goes mainstream (at least in the US, where this debate has been led.) Ray Kurzweil has recently been

featured in a Times magazine article and I was featured in a History Channel program “Prophets of Doom”. There will be several movies in 2011 on the same theme, so the general public will become more exposed to the ideas. If one thinks back 5 years and asks oneself, “How conscious was I of the climate change issue?” Most people would say, “Only a little, if at all.” I would not be at all surprised that 5 years from now (2015), the issue of species dominance will be part of the educated person’s general knowledge, as much as is climate change today.

And after the issue heats up, the species dominance issue will not go away! Every month technical progress is taking humanity closer to being able to build artefacts. The issue will heat up, and tempers will flare. Political parties will be formed on the issue. The debate will later start raging, then the assassinations and sabotages will start. People will take sides. The two ideologies (Cosmism and Terranism) are both very powerful (i.e. building gods vs. preserving the human species – “do we build gods or our potential exterminators?”) and so far have split humanity down the middle. Most individuals are ambivalent about the issue – feeling the awe of building artefact gods as well as feeling the horror of a prospective gigadeath artefact war.

Personally, I’m glad I’m alive now. I don’t want to see all this horror that is going to consume my grandchild and billions like him. I just don’t want to see it. If I live into my 90s, I will see the species dominance debate rage (it’s starting already amongst the AI specialists) but I won’t see the war. Thank god.

Ben:

There's certainly a lot of truth to that, but it seems to me you're overlooking one major point. Some people may want to become cyborgs with a more *limited* machine component than what is potentially possible, i.e. they might *choose* to be 50% human and 50% machine (in terms of computing power), even though it would technically be possible to become 99.99999% machine (computationally), and only .00001% human. This doesn't affect your arguments about species dominance, but it does IMO mean there could really be three political groups – a) those wanting only legacy humanity (Terrans), b) those wanting only limited expansion of human capabilities, e.g. 50-50 human/machine hybrids (the Cyborgists), c) those wanting expansion without unnecessary limits (the Cosmists). From a Cosmist viewpoint, the Cyborgists and Terrans will be basically the same thing. From a Terran viewpoint, the Cyborgists and Cosmists will be basically the same thing. But to a Cyborgist, the Terrans and Cosmists will seem qualitatively different.

Or is your point mainly that, once we have the femtotech grains of sand available, they're just going to achieve massive superintelligence so quickly that all the distinctions between inferior-intelligence human-scale beings are going to become totally irrelevant?

But don't you think it's possible that the superhuman artefacts may let pesky little humans and cyborgs keep on

existing and minding their own business, just as we humans do with ants and bacteria?

Hugo:

If the “artilectual factor” is only million times more, or a billion, or whatever, the qualitative conclusion is the same, i.e. the human component has been swamped. So there’s little point from the Terran viewpoint in distinguishing between an artilect and a cyborg. The so-called “third option” of Cyborgism is a phony one. There really are only 2 options – Terran or Cosmist. The last part of your question is critical in this whole species dominance debate, namely that of “risk”, i.e. the risk that if the artilects come into being, that they may exterminate humans, for whatever reason. I just don’t see Globan (i.e. world state) Terran politicians around mid century, tolerating the Cosmists demands to build artilects. To do so would be to accept that the fate of humanity lies with the artilects. Humans would become the “No. 2” species. We would lose control of our own fate. I see the Terran politicians drawing a line in the sand, i.e. pushing hard for a globally legislated maximum AIQ (artificial intelligence quotient) and anyone superseding it is to become a criminal and be prosecuted. This will force the Cosmists to organize and oppose such a ban. The rhetoric either way will heat up (the “species dominance debate”), and spill over into the “Artilect War”, which with 21st century weapons, will lead to “gigadeath”.

A7) THE NEXT STEP: MAKING THE SPECIES DOMINANCE ISSUE POLITICAL

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Abstract

The issue of species dominance is about whether humanity should build godlike, massively intelligent machines this century, with mental capacities trillions of trillions of times above human level. In certain circles, this is widely thought to be the singularly most important issue of the 21st century, due to its profound consequences for humanity's survival once these "artilects" (artificial intellects) come into being.

Introduction

As with any issue, species dominance had to start with a few intellectuals crying in the wilderness. Thinkers such as [I. J. Good](#) in the 1960s and then [Hans Moravec](#), Ray Kurzweil and myself in the 1980s did just that.

In the 1990s, the second stage occurred, namely the establishment of interest groups concerned with the issue such as the [Transhumanists](#) and the Extropians, among others. The number of people concerned with the the rise of

the artifact (or as the Americans say, the “singularity”) has reached a critical mass, to the point that 2011 is the year the issue has gone mainstream in the (American) media.

One of the major reasons why this media interest has occurred has been due to Kurzweil, that one-man publicity machine, famous for his message of “exponentially increasing technologies.” His book “[The Singularity is Near](#)” (2005) caught the attention of filmmaker Barry Ptolemy, who made a movie based on Kurzweil’s life and work called “[Transcendent Man](#),” which attracted a lot of media attention, even reaching the [cover of Time Magazine](#).

At about the same time, my book “[The Artifact War](#)” (2005) caught the attention of the History Channel, which made a 90-minute documentary called “[Prophets of Doom](#),” prompting Newsweek to write a similar feature article. The Discovery Channel is now making a major documentary on the species dominance theme, to be broadcast in 2011.

With so much publicity, it’s clear that the issue of species dominance will be reaching the American public this year. These US documentaries will then find themselves on the internet and will spread around the world. The next few countries to take up the torch will be Canada, Australia, the UK, and then Europe. In time, the world’s media will start devoting more coverage to what I believe is the biggest story of the 21st century.

Phase three, a major milestone in the issue’s ability to attract public attention has been passed: journalists are now

spreading the message to a global audience. So the time is now ripe for phase four to begin; it's time to make species dominance political.

The environmental movement got its start in a similar fashion, with a single intellectual crying in the wilderness. In that case, the lone voice belonged to American conservationist Rachel Carson, who published her seminal work "[Silent Spring](#)" in 1962. Her book pointed out that humanity was polluting the environment with toxic chemicals such as DDT killing birds, spurring Carson's evocative vision of a spring without bird calls. Environmental consciousness spread and eventually political parties known as the Greens came into being. This movement is now particularly powerful in Germany.

Species dominance awareness has not yet reached the political phase. This essay proposes ideas on how the fourth phase in the general development of a social movement on this topic can be promoted and stimulated.

Politicizing the Species Dominance Issue

This section will examine how the species dominance issue can become more political, entering the fourth phase in its development as a social movement.

Continue the debate

There is not yet any real consensus among interest groups on whether the rise of the artelect is a good thing for

humanity. Debate on this and related issues needs to continue at annual conferences such as the [Singularity Summit](#) in the US and Australia. Organizers should continue making efforts to attract journalists to these events.

Kurzweil is very optimistic about the rise of intelligent machines in the coming decades and thinks that human beings and machines will merge, allowing humans to acquire superhuman abilities. He is an undiluted optimist, for which he is widely criticized.

I, on the other hand, sit at the opposite extreme. I'm claiming that a sizable proportion of humanity (the "Terrans") will not tolerate human beings becoming the subordinate sentient species on Earth and, if pushed to the limit, will go to war against the creators of the artifacts (the "Cosmists") to stop them building the creations of which the latter dream. This "Artifact War" will cause billions of deaths, because it will be waged with 21st century weapons capable of killing far more people than past conflicts fought with comparatively primitive weaponry.

Most thinkers in the species dominance debate lie between these two extremes. The various issues involved need to be given a lot more thought, considering the critical importance of this topic.

Extending the debate

Personally, I will be very happy to see the species dominance debate move beyond techies' discussion circles. Unfortunately, people with hard science backgrounds are

usually politically naïve and too young to have any real experience of how negative human nature can be, particularly when it comes to warfare.

However, techies' dominance of the debate up to now has been perfectly natural, since they are the ones who are creating the problem by striving to build artificially intelligent machines. Normally, they are the first to see the writing on the wall since they are the ones doing the writing.

For example, my first two published articles on the topic were in 1989. I started building artificial brains in 1993 in Japan, when the term sounded rather exaggerated, but is now fully accepted. Since I was helping to create the species dominance problem, it made sense that I and others in a similar position were the first to write about the issue.

Now that the species dominance issue has gone mainstream in the media, a wider academic audience can get in on the act. I would particularly like to see social science experts bring their training to bear on the problem, notably political scientists, historians, philosophers and psychologists. I would also like to see Europeans get more involved. The current debate is still dominated by American techies who are way too optimistic and naïve. They know intellectually that the last century was the bloodiest in history (200-300 million people killed for political reasons), but fail to translate its equivalent in the 21st century into an emotional reality. I will be very glad to see historians and political philosophers bring their more balanced viewpoints into the debate.

A lot more books need to be written on the topic

The species dominance issue is so important for humanity in the 21st century that a flood of books should be written on the topic. Look at Karl Marx for example, and the number of books written on his ideas. Marx's question of the ownership of capital dominated global politics in the 19th and 20th centuries. As the question of who or what should be the dominant species will dominate the 21st century, it deserves to be covered just as extensively. Universities have a strong obligation to get involved.

Think tanks

Once a flood of books has appeared, think tanks can get in on the act. The "tankers" can read these books and listen to the intellectual debates in the media (to the extent that they exist in corporatist-controlled, dumbed-down America). Their role should be to translate the ideas in the books and the media into future political activity. For example, they should start thinking about future political policies to be formulated as advice to political parties. In fact, the issue is so dominant, probably new political parties will be formed to deal with it (see below).

Most issues in politics are not important enough to have a political party define itself with that issue. For example, the US does not have an Abortion Party that pushes for free abortions. In many European countries, the issue of better rights for workers was considered so important that a pan-European labour movements sprang up, with active political parties promoting its interests across the continent

through vehicles like Britain's Labour Party and Germany's Arbeiter Partei.

As the species dominance debate heats up, we can expect new parties to be formed with names such as the Terran Humanity First Party or, at the opposite pole, the Cosmist Transcendent Party.

Think tanks will have their hands full, thinking up all the many political consequences of the rise of the artelect in the coming decades. They should start thinking now.

Text books and new courses at universities

Once the species dominance issue is widely discussed, professors can collate the ideas and put them into textbooks, creating new courses for their students. This way, the issue will be widely studied and far better understood. Upon graduating, students will be able to help contribute to the political discussion.

Lobbying the politicians

Once the general public has taken sides on the species dominance issue (becoming Cosmists, Terrans or Cyborgists wanting to become artelects themselves by adding artelectual components to their own brains), the various factions can then start lobbying politicians, forcing the latter to take sides. This may be difficult for conventional politicians because experience so far shows that the question of whether or not to build artelects (or advanced cyborgs) sharply divides people right down the

middle. Politicians will be pulled left or right with equal force.

New political parties

Once large numbers of people start getting passionate about the issue as the spread of cyborgs starts alienating the Terrans, the latter should organize and form their own political parties, making plans on how to combat the Cosmists. The Cosmists, not to be outdone, should also form their own political parties.

As the debate really heats up, the Terran and Cosmist parties should start making plans for military action. In the case of the Terrans, they will be terrified of being superseded by the artifacts and cyborgs, eliciting a visceral rejection of the growing number of cyborgs in their midst. The Terrans should prepare for an extermination campaign against the Cosmists and cyborgs for the sake of preserving humanity.

The Cosmists should also prepare themselves militarily, because they know that the Terrans cannot wait too long. The Cosmists know that the Terrans must strike first, while the latter still have enough intelligence to win a war against foes whose intellectual capabilities are quickly improving. The Cosmists cannot afford to be caught off-guard by the Terrans and should hit back immediately when the Terrans hit them. Both sides should also be thinking about various scenarios in the case of gigadeath-scale casualties (in the billions) from 21st century weaponry.

Alternatives to gigadeath?

The prospect of a gigadeath-scale Artilect War is so horrible (billions of humans killed) that a major effort needs to be made by the planet's best thinkers to find ways to avoid it. I have been unable to find one, which is why I am so pessimistic. I am glad I am alive now, since I will probably have the luxury of dying peacefully in my bed. I will live long enough (into the 2030s probably) to see the species dominance debate heat up and rage, but will not see the Artilect War. My grandson will, however. He will be caught up in it and probably destroyed by it.

If there is a way to avoid an Artilect War, then it is critical for humanity to find and plan for it. Personally, I'm cynical that such a way exists, otherwise I think I would probably have thought of it, having considered the issue for over two decades. Still, many heads are better than one. Perhaps someone out there will dream up a strategy that can save us.

I don't see Kurzweil's cyborg route strategy being the solution. This would involve all human beings becoming cyborgs, upgrading themselves into fully blown artilects and thus avoiding a conflict between Terrans and Cosmists; there will be no humans left to disagree amongst themselves. Instead, I foresee Terrans' growing horror at watching humanity being gradually destroyed as its individual members are transformed bit by bit into utterly alien creatures relict humans cannot relate to at all. Rejection will bloom with murderous speed, fueled by deepseated revulsion.

Kurzweil's cyborg route is part of the problem, not the solution. Since the potential computing capacity of a nanotech grain of sand is a quintillion (a million trillion) times greater than that of the human brain, a human body with a cyborged grain of sand will be an artefact in human disguise, making Terran paranoia all the greater.

Getting Started

This essay will hopefully motivate people concerned by the species dominance issue to start acting politically, by spreading the word to the media, to the general public, to universities, to think tanks and to politicians, eventually creating their own political parties to prepare for when the issue reaches boiling point.

The species dominance issue is the most important problem facing the 21st century and will color our age. It has now reached the third phase in the development of social movements, having gone mainstream in the media. The time is now ripe to move on to the fourth phase, into politics. Hopefully, some of the advice given in this essay will prove to be useful towards that end.

A8) SEEKING THE SPUTNIK OF AI

Hugo de Garis Interviews Ben Goertzel on AGI, OpenCog, and the Future of Intelligence

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Abstract

A couple months after I (Ben Goertzel) interviewed my good friend and sometime research collaborator Hugo de Garis on some of his wilder theoretical ideas [<http://hplusmagazine.com/2011/01/18/is-god-an-alien-mathematician/>], he suggested it would be interesting to play a role-reversal game and ask ME some interview questions – about my AGI research and my views on the future of humanity and intelligence. His questions were good ones and so I happily obliged!

Hugo:

About 5 years ago, I was staying at a mutual friend's apartment in Washington DC, just before moving full time to China. At the time you took the view that it would NOT

be necessary to have a full knowledge of the human brain to be able to create a human level artificial intelligence. You thought it could be done years earlier using a more humanly engineered approach rather than a “reverse engineering the brain” approach. What are your thoughts on that attitude now, 5 years down the road?

Ben:

Wow, was that really 5 years ago? Egads, time flies!!

But my view remains the same....

Neuroscience has advanced impressively since then, but more in terms of its understanding of the details than in its holistic vision of the brain. We still don't know exactly how neurons work, we still don't know how concepts are represented in the brain nor how reasoning works, etc. We still can't image the brain with simultaneously high spatial and temporal precision. Etc.

Artificial General Intelligence hasn't advanced as visibly as neuroscience since then, but I think it has advanced. The pursuit of AGI now exists as a well-defined field of research, which wasn't the case back then. And many advances have been made in specific areas of importance for AGI – deep learning models of perception, probabilistic logical inference, automated program learning, scalable graph knowledge stores, and so forth. We also have a vibrant open-source AGI project, OpenCog, which I hope will take off in the next few years the same way Linux did a while back.

Both approaches have a significant ways to go before yielding human-level AGI, but I'd say both have the same basic strengths and weaknesses they did 5 years ago, having advanced steadily but not dramatically.

Hugo:

So, which approach do you feel will build human level AI first, your symbolic engineered approach, or reverse engineering of the brain? Why?

Ben:

I wouldn't characterize my approach as "symbolic", I think that's a bit of a loaded and misleading term given the history of AI. My approach involves a system that learns from experience. It does include some probabilistic logic rules that are fairly described as "symbolic", but it also includes dynamics very similar to attractor neural nets, and we're now integrating a deep learning hierarchical perception system, etc. It's an integrative experiential learning based approach, not a typical symbolic approach.

Anyway, quibbles over terminology aside, do I think an integrative computer science approach or a brain simulation approach will get there faster?

I think that an integrative computer science approach will get there faster UNLESS this approach is starved of funding and attention, while the brain simulation approach gets a lot of money and effort.

I think we basically know how to get there via the integrative comp sci approach NOW, whereas to follow the neuroscience approach, we'd first need to understand an awful lot more about the brain than we can do with current brain measurement technology. But still, even if one of the current AGI projects – like the OpenCog project I cofounded – is truly workable, it will take dozens of man-years of effort to get to human-level AGI by one of these routes. That's not much in the historical time-scale, but it's a nontrivial amount of human effort to pull together without serious backing from government or corporate sources. Right now OpenCog is funded by a ragtag variety of different approaches, supplemented by the wonderful efforts of some unpaid volunteers – but if this situation continues (for OpenCog and other integrative CS based AGI projects), progress won't be all that fast, and it's not clear which approach will get there first.

What I'm hoping is that, once OpenCog or some other project makes a sufficiently impressive AGI demonstration, there will be a kind of "Sputnik moment" for AGI, and the world will suddenly wake up and see that powerful AGI is a real possibility. And then the excitement and the funding will pour in, and we'll see a massive acceleration of progress. If this AGI Sputnik moment happened in 2012 or 2013 or 2014, for example, then the integrative CS approach would leave the brain simulation approach in the dust – because by that time, we almost surely still won't be able to measure the brain with simultaneously high spatial and temporal precision, so we still won't be able to form an

accurate and detailed understanding of how human thinking works.

Hugo:

As machines become increasingly intelligent, how do you see human politics unfolding? What are your most probable scenarios? Which do you feel is *the* most probable?

Ben:

I see human organizations like corporations and governments becoming gradually more and more dependent on machine intelligence, so that they no longer remember how they existed without it.

I see AI and allied technologies as leading to a lot of awfully wonderful things.

A gradual decrease in scarcity, meaning an end to poverty.

The curing of diseases, including the diseases comprising aging, leading ultimately to radical life extension.

Increased globalization, and eventually a world state in some form (maybe something vaguely like the European Union extended over the whole planet, and then beyond the planet).

The emergence of a sort of “global brain”, a distributed emergent intelligence fusing AIs and people and the Net into a new form of mind never before seen on Earth.

Increased openness and transparency, which will make government and business run a lot more smoothly. And will also trigger big changes in individual and collective human psychology. David Brin's writings on sousveillance are quite relevant here, by the way, e.g. the Transparent Society. Also you can look at Wikileaks and the current Mideast revolutions as related to this.

But exactly how all this will play out is hard to say right now, because so much depends on the relative timings of various events. There will be advances in "artificial experts", AI systems that lack humanlike autonomy and human-level general intelligence, but still help solve very important and difficult problems. And then there will be advances in true, autonomous, self-understanding AGI. Depending on which of these advances faster, we'll see different sorts of future scenarios unfold.

If we get super-powerful AGI first, then if all goes well the AGI will be able to solve a lot of social problems in one fell swoop. If we get a lot of artificial experts first, then we'll see problems gradually get solved and society gradually reorganized, and then finally a true AGI will come into this reorganized society.

Hugo:

In a recent email to me you said "I don't think it's productive to cast the issue as *species dominance*". Why do you feel that?

Ben:

A species dominance war – a battle between humans and AI machines – is one way that the mid-term future could pan out, but we have no reason to think it's the most likely way. And it's possible that focusing on this sort of outcome too much (as many of our science fiction movies have, just because it makes good theater) may even increase the odds of it happening. Sometimes life follows fiction, because the movies someone sees and the books they read help shape their mind.

I find Ray Kurzweil a bit overoptimistic in his view on the future, but maybe his overoptimism is performing a valuable service: by placing the optimistic vision of a “kinder, gentler Singularity” in peoples' minds, maybe he'll help that kind of future to come about. I'd imagine he has thought about it this way, alongside other perspectives....

Another possibility, for example, is that humans may gradually fuse with machines, and let the machine component gradually get more and more intelligent, so that first we have cyborgs with a fairly equal mix of human and machine, and then gradually the machine takes over and becomes the dominant portion. In this case we could feel ourselves become superhuman god-minds, rather than having a (losing) war with superhuman god-minds that are external to ourselves. There would be no species dominance debate, but rather a continuous transition from one “species” into another. And quite possibly the superhuman cyborgs and god-mind AIs would allow legacy humans to continue to exist alongside themselves, just as

we allow ants to keep crawling around in the national park, and bacteria to course around inside those ants.

Of course, you could point out that some human beings and some political organizations would be made very mad by the preceding few paragraphs, and would argue to wipe out all the nasty risky techno-geeks who entertain crazy ideas like gradually becoming superhuman god-mind cyborg AIs. So, could there be conflicts between people who like this sort of wild ambitious futurist vision, and those who think it's too dangerous to play with? Of course there could. But focusing on the potential consequences of such conflict seems pointless to me, because they're so unknown at this point, and there are so many other possibilities as well. Maybe this sort of conflict of opinion will someday, somewhere, unfold into a violent conflict or maybe it won't. Maybe Ray Kurzweil is right that the advocates of gradual cyborgization will have vastly more advanced capabilities of defense, offense and organization than their opponents, so that the practical possibility of a really violent conflict between the Cosmists and the Terrans (to use your terminology) won't be there.

After all, right now there is a conflict between people who want to roll back to medieval technology and attitudes (Al Qaeda) and modern technological society – and who's winning? They knocked down the World Trade Center, probably aided in many ways by their connections with the Saudis, who are wealthy because of selling oil to technological nations, and are shielded somewhat by their close connections with the US power elite (e.g. the Bush

family). But they're coming nowhere close to winning their war on technological progress and cultural modernization. Our weapons are better – and our memes are stickier. When their kids find out about modern culture and technology, a lot of them are co-opted to our side. When our kids find out about the more violent and anti-technology strains of fundamentalist Islam, relatively few are tempted. My guess is this sort of pattern will continue.

Hugo:

Are you mystified by the nature of consciousness?

Ben:

Not at all. Consciousness is the basic ground of the universe. It's everywhere and everywhen (and beyond time and space, in fact). It manifests differently in different sorts of systems, so human consciousness is different from rock consciousness or dog consciousness, and AI consciousness will be yet different. A human-like AI will have consciousness somewhat similar to that of a human being, whereas a radically superhumanly intelligent AI will surely have a very different sort of conscious experience.

To me, experience comes first, science and engineering second. How do I know about atoms, molecules, AI and computers, and Hugo de Garis, and the English language? I know because these are certain patterns of arrangement of my experience, because these are certain patterns that have arisen as explanations of some of my observations, and so forth. The experiential observations and feelings come first, and then the idea and model of the physical world comes

after that, built out of observations and feelings. So the idea that there's this objective world out there independent of experience, and we need to be puzzled about how experience fits into it, seems rather absurd to me. Experience is where it all starts out, and everything else is just patterns of arrangement of experience (these patterns of course being part of experience too)....

You could call this Buddhist or panpsychistic or whatever, but to me it's just the most basic sort of common sense.

So, while I recognize their entertainment value, and their possible value in terms of providing the mind's muscles a cognitive workout -- I basically see all the academic and philosophical arguments about consciousness as irrelevancies. The fact that consciousness is a conundrum within some common construals of the modern scientific world view, tells us very little about consciousness, and a lot about the inadequacies of this world view...

Hugo:

Do you think humanity will be able to create conscious machines?

Ben:

Absolutely, yes.

Hugo:

If someone holds a gun to your head and forces you to choose between a god like artefact coming into existence but humanity gets destroyed as a result, OR the artefact is

never created, and hence humanity survives, which would you choose and why? Remember the gun at your head.

Ben:

Well, I guess none of us knows what we'd really do in that sort of situation until we're in it. Like in the book "Sophie's Choice." But my gut reaction is: I'd choose humanity. As I type these words, the youngest of my three kids, my 13 year old daughter Scheherazade, is sitting a few feet away from me doing her geometry homework and listening to Scriabin Op. Fantasy 28 on her new MacBook Air that my parents got her for Hanukah. I'm not going to will her death to create a superhuman artifact. Gut feeling: I'd probably sacrifice myself to create a superhuman artifact, but not my kids.... I do have huge ambitions and interests going way beyond the human race – but I'm still a human.

How about you? What do you reckon you'd choose?

Hugo:

I vacillate. When I look at the happy people in the park, I feel Terran. When I stare at astronomy books where each little dot is a galaxy in the famous Hubble "Deep Field" photo, I feel Cosmist. But if I REALLY had to choose, I think I would choose Cosmist. I think it would be a cosmic tragedy to freeze evolution at our puny human level. This is the biggest and toughest decision humanity will ever have to make. "Do we build gods, or do we build our potential exterminators?"

Ben:

Well, let's hope we don't have to make that choice. I see no reason why it's impossible to create vastly superhuman minds – and even merge with them – while still leaving a corner of the cosmos for legacy humans to continue to exist in all their flawed monkey-like beauty! ...

Hugo:

How do you see humanity's next 100 years?

Ben:

I guess I largely answered this already, right? I see the creation of superhuman AGI during this century as highly likely. Following that, I see a massive and probably irreducible uncertainty. But I think there's a reasonably high chance that what will happen is:

... some superhuman AGIs, seeded by our creations, will leave our boring little corner of the universe

... some humans will gradually cyborgify themselves into superhuman AGI god-minds, and probably bid this corner of the Cosmos adieu as well

... some humans will opt to stay legacy humans, and others will opt to be cyborgs of various forms, with various combinations of human and engineered traits

... the legacy humans and "weak cyborgs" will find their activities regulated by some sort of mildly superhuman

“Nanny AI” that prevents too much havoc or destruction from happening

That’s my best guess, and I think it would be a pretty nice outcome. But I freely admit I have no strong scientific basis for asserting this is the most probable outcome. There’s a hell of a lot of uncertainty about.

Hugo:

Do you think friendly AI is possible? Can you justify your answer.

Ben:

Do I think it’s possible to create AGI systems with vastly superhuman intelligence, that are kind and beneficial to human beings? Absolutely, yes.

Do I think it’s possible for humans to create vastly superhuman AGI systems that are somehow provably, guarantee-ably going to be kind and beneficial to human beings? Absolutely not.

It’s going to be a matter of biasing the odds.

And the better an AGI theory we have, the more intelligently we’ll be able to bias the odds. But I doubt we’ll be able to get a good AGI theory via pure armchair theorizing. I think we’ll get there via an evolving combination of theory and experiment – experiment

meaning, building and interacting with early-stage proto-AGI systems of various sorts.

Hugo:

Do you see the US or China being the dominant AI researcher nation in the coming decades?

Ben:

Hmmm, I think I'll have to answer that question from two perspectives: a general one, setting aside any considerations related to my own AGI work in particular; and a personal one, in terms of the outlook for my own AGI project.

Generally speaking, my view is that the US has a humongous lead over anywhere else in terms of AGI research. It's the only country with a moderate-sized community of serious researchers who are building serious, practical AGI architectures aimed at the grand goal of human-level intelligence (and beyond). Second place is Europe, not China or India, not even Korea or Japan.... The AGI conference series that I co-founded operates every alternate year in the US, and every alternate year elsewhere. The AAAI, the strongest narrow-AI professional organization in the world, is international in scope but US-founded and to a significant extent still US-focused.

The US also has by far the world's best framework for technology transfer – for taking technology out of the lab and into the real world. That's important, because once AGI development reaches a certain point, tech transfer will allow its further development to be funded by the business

sector, which has a lot of money. And this kind of thing is hard for other countries to replicate, because it involves a complex ecosystem of interactions between companies of various sizes, universities, and investors of various sorts. It's even hard for cities in the US, outside a certain number of tech hubs, to pull off effectively.

Also, most probably the first powerful AGIs will require a massive server farm, and who's best at doing that? US companies like Google and Amazon and IBM, right? China may have built the world's fastest supercomputer recently, but that's sort of an irrelevancy, because the world doesn't really need supercomputers anymore – what we really need are massive distributed server farms like the ones operated with such stunningly low cost and high efficiency by America's huge Internet companies.

And culturally, the US has more of a culture of innovation and creativity than anywhere else. I know you lived for a while in Utah, which has its pluses but is a very unusual corner of the US – but if you go to any of the major cities or tech hubs, or even a lot of out-of-the-way college towns, you'll see a spirit of enthusiastic new-idea-generation among young adults that is just unmatched anywhere else on the planet. Also a spirit of teamwork, that leads a group of friends just out of college to start a software company together, cooperating informally outside the scope of any institution or bureaucracy.

Look at any list of the most exciting tech companies or the biggest scientific breakthroughs in the last few years, and

while it will look plenty international, you'll see a lot of US there. Many of the US scientists and technologists will have non-Anglo-Saxon-sounding names – including many that are Chinese or Indian -- but that's part of the US's power. Many of the best students and scientists from around the world come to America to study, or teach, or do research, or start companies, etc. That's how the US rose to science and engineering prominence in the first place – not through descendants of the Puritans, but through much more recent immigrants. My great-grandparents were Eastern European Jews who immigrated to the US in the first couple decades of the last century. They were farmers and shopkeepers in Europe, now their descendants are scientists and professors, executives and teachers, etc. This is same sort of story that's now bringing so many brilliant Asians to America to push science and technology forward.

So, hey, God bless America! What more can I say....?

Not many people know that I live near Washington DC – a lot of people assume I'm from California for some reason. I've lived a lot of places (Brazil, Oregon, New Jersey, Philly, four of the five boroughs of New York City, Australia, New Zealand, New Mexico) but never California.... Not yet, at any rate. Though (my companies) Novamente and Biomind have had plenty of customers there, and I've become painfully accustomed to the red-eye flights from DC to San Fran and LA. As you know I live in Maryland just north of DC, a few miles from the National Institutes of Health, for which I've done a lot of bioinformatics work; and I've also done some AI

consulting for various companies working with other government agencies. I've become a bit of a "Beltway bandit" since I moved here in 2003. DC has its pluses and minuses, and I wouldn't say I fit into the culture here too naturally; but there's a lot more interesting R&D going on here than most people realize, because the culture here isn't publicity-oriented. And in some ways there's a longer-term focus here than one finds in Silicon Valley, where there's so much obsession with moving super-fast and getting profits or cash flow or eyeballs or whatever as quickly as possible.... The Chinese government thinks 30 years ahead (one of its major advantages compared to the US, I might add), Wall Street thinks a quarter ahead, Silicon Valley thinks maybe 3 years ahead (Bay area VCs typically only want to invest in startups that have some kind of exit strategy within 3 years or so; and they usually push you pretty hard to launch your product within 6 months of funding – a default mode of operation which is an awkward fit for a project like building AGI), and DC is somewhere between Silicon Valley and China....

But still ... having said all that ... there's always another side to the coin, right? On the other hand, if – IF IF IF – the US manages to squander these huge advantages during the next few decades, via pushing all its funding and focus on other stuff besides AGI and closely allied technologies ... then who knows what will happen. Economically, China and India are gradually catching up to the US and Europe and Korea and Japan ... they're gradually urbanizing and educating and modernizing their huge rural populations. And eventually China will

probably adopt some sort of Western style democracy, with free press and all that good stuff, and that will probably help Chinese culture to move further in the direction of free expression and informal team work and encouragement of individual creativity – things that I think are extremely important for fostering progress in frontier areas like AGI. And eventually India will overcome its patterns of corruption and confusion and become a First World country as well. And when these advances happen in Asia, then maybe we'll see a more balanced pattern of emigration, where as many smart students move from the US to Asia as vice versa. If the advent of AGI is delayed till that point – we're talking maybe 2040 or so I would reckon – then maybe China or India is where the great breakthrough will happen.

I do think China is probably going to advance beyond the US in several areas in the next couple decades. They're far, far better at cheaply making massive infrastructure improvements than we are. And they're putting way more effort and brilliance into energy innovations than we are. To name just two examples. And then there's stem cell research, where the US still has more sophistication, but China has fewer regulatory slowdowns; and other areas of biomedical research where they excel. But these areas are largely to do with building big stuff or doing a lot of experimentation. I think the Chinese can move ahead in this sort of area more easily than in something like AGI research. I think AGI research depends mostly on the closely coordinated activity of small informal or semi-formal groups of people pursuing oddball ideas, and I don't

think this is what Chinese culture and institutions are currently best at fostering.

Another factor acting against the USA, is that the US AI research community (along with its research funding agencies) is largely mired in some unproductive ideas, the result of the long legacy of US AI research. And it's true that the Chinese research community and research funders aren't similarly conceptually constricted – they have fewer unproductive conceptual biases than US AI researchers, on the whole. But if you look at the details, what most Chinese academics seem to care most about these days is publishing papers in SCI-indexed journals and getting their citation counts higher – and the way to do this is definitely NOT to pursue long-term oddball speculative AGI research....

You might be able to frame an interesting argument in favor of India as a future AGI research center, on this basis. They seem a bit less obsessed with citation counts than the Chinese, and they have a long history of creative thinking about mind and consciousness, even longer than the Chinese! Modern consciousness studies could learn a lot from some of the medieval Indian Buddhist logicians. Plus a lot of Silicon Valley's hi-tech expertise is getting outsourced to Bangalore. And the IITs are more analogous to top-flight US technical universities than anything in China – though Chinese universities also have their strengths. But anyway, this is just wild speculation, right? For now there's no doubt that the practical nexus of AGI research remains in America (in spite of lots of great work

being done in Germany and other places). AGI leadership is America's to lose ... and it may well lose it, time will tell.... Or America-based AGI research may advance sufficiently fast that nobody else has time to catch up....

Hugo:

OK, that was your general answer ... now what about your personal answer? I know you've been spending a lot of time in China lately, and you're working with students at Xiamen University in the lab I ran there before I retired, as well as with a team in Hong Kong....

Ben:

Yeah, that was my general answer. Now I'll give my personal answer – that is, my answer based on my faith in my own AGI project.

I think that the OpenCog project, which I co-founded, is on an R&D path that has a fairly high probability of leading to human-level general intelligence (and then beyond). The basic ideas are already laid out in some fairly careful (and voluminous) writing, and we have a codebase that already functions and implements some core parts of the design, and a great team of brilliant AGI enthusiasts who understand the vision and the details.... So, if my faith in OpenCog is correct, then the “US versus China” question becomes partly a question of whether OpenCog gets developed in the US or China.

Interestingly, it seems the answer is probably going to be: both! ... and other places too. It's an open source project with contributors from all over the place.

My company Novamente LLC is driving part (though by no means all) of OpenCog development, and we have some programmers in the US contributing to OpenCog based on US government contracts (which are for narrow-AI projects that use OpenCog, rather than for AGI per se), as well as a key AGI researcher in Bulgaria, and some great AI programmers in Belo Horizonte, Brazil, whom I've been working with since 1998. There's also a project at Hong Kong Polytechnic University, co-sponsored by the Hong Kong government's Innovation in Technology Fund and Novamente LLC, which is applying OpenCog to create intelligent game characters. And there's a handful of students at Xiamen University in China working on making a computer vision front end for OpenCog, based on Itamar Arel's DeSTIN system (note that Itamar is from Israel, but currently working in the US, as a prof at the University of Tennessee Knoxville, as well as CTO of a Silicon Valley software company, Binatix). Now, the AI programmers on the Hong Kong project consist of two guys from New Zealand (including Dr. Joel Pitt, the technical lead on the project) and also three exchange students from Xiamen University. In April I'll be spending a few weeks in Hong Kong with the team there, along with Dr. Joscha Bach from Germany.

My point in recounting all those boring details about people and places is – maybe your question is just too 20th century.

Maybe AGI won't be developed in any particular place, but rather on the interwebs, making use of the strengths of the US as well as the strengths of China, Europe, Brazil, New Zealand and so on and so forth.

Or maybe the US or Chinese government will decide OpenCog is the golden path to AGI and throw massive funding at us, and we'll end up relocating the team in one location – it's certainly possible. We're open to all offers that will allow us to keep our code open source!

So far I have found the Chinese research funding establishment, and the Chinese university system, to be much more open to radical new approaches to AGI research than their American analogues. In part this is just because they have a lot less experience with AI in general (whether narrow AI or AGI). They don't have any preconceived notions about what might work, and they don't have such an elaborate "AI brain trust" of respected older professors at famous universities with strong opinions about which AI approaches are worthwhile and which are not. I've gotten to know the leaders of the Chinese AI research community, and they're much much more receptive to radical AGI thinking than their American analogues. Zhongzhi Shi from the Chinese Academy of Sciences is going to come speak about Chinese AGI efforts at the AGI-11 conference in California in August – and I've also had some great conversations with your friend Yixin Zhang, who's the head of the Chinese AI Association. I went to their conference last year in Beijing, and as you'll recall our joint paper on our work with intelligent robots in

Xiamen won the Best Paper prize! At the moment their efforts are reasonably well funded, but not to the level of Chinese work on semiconductors or supercomputers or wind power or stem cell research, etc. etc. But certainly I can see a possible future where some higher-ups in the Chinese government decide to put a massive amount of money into intelligent robotics or some other AGI application, enough to tempt a critical mass of Western AGI researchers as well as attract a lot of top Chinese students.... If that does happen, we could well see the world's "AGI Sputnik" occur in China. And if this happens, it will be interesting to see how the US government responds – will it choose to fund AGI research in a more innovation-friendly way than it's done in the past, or will it respond by more and more aggressively funding the same handful of universities and research paradigms it's been funding since the 1970s?

So overall, putting my general and personal answers together – I feel like in the broad scope, the AGI R&D community is much stronger in the US than anywhere else, and definitely much much stronger than in China. On the other hand, AGI is the sort of thing where one small team with the right idea can make the big breakthrough. So it's entirely possible this big breakthrough could occur outside the US, either via natively-grown ideas, or via some other country like China offering a favorable home to some American-originated AGI project like OpenCog that's too radical in its conceptual foundations to fully win the heart of the US AI research funding establishment.

But ultimately I see the development of AGI in an international context as providing higher odds of a beneficial outcome, than if it's exclusively owned and developed in any one nation. So as well as being an effective way to get work done, I think the international open-source modality we're using for OpenCog is ultimately the most ethically beneficial way to do AGI development....

Well, what do you think? You live in China ... I've spent a lot of time there in recent years (and plan to spend a few months there this year), but not as much as you. And you speak the language; I don't. Do you think I'm missing any significant factors in my analysis?

Hugo:

I put more emphasis on Chinese economics and national energy. Americans have become fat and complacent, and are not growing economically at anywhere near the Chinese rate. The historical average US economic growth rate is 3%, whereas China's is 10% (and has been sustained pretty much for 30 years). Doing the math, if this incredible energy of the Chinese can be sustained for a few more decades, it will put the rich eastern Chinese cities at a living standard well above that of the US, in which case they can afford to attract the best and most creative human brains in the world to come to China. The US will then see a reverse brain drain, as its best talent moves to "where it's at", namely China. With a million talented Westerners in China within a decade, they will bring their "top world" minds with them and shake up China profoundly, modernizing it,

legalizing it, democratizing it and civilizing it. Once China finally goes democratic and with its rich salaries, it doesn't matter whether the Chinese can be creative or not. The presence of the best non Chinese brains in China will ensure an explosion of creativity in that part of the world.

Ben:

Hmmm.... Chinese economic growth is indeed impressive – but of course, it's easier to grow when you're urbanizing and modernizing a huge rural population. To an extent, the US and Europe and Japan are growing more slowly simply because they've already urbanized and modernized. I guess once China and India have finished modernizing their growth rates may look like those in the rest of the world, right? So your projection that Chinese growth will make Chinese cities richer than US cities may be off-base, because most of Chinese growth has to do with bringing more and more poor people up to the level of the international middle class. But I guess that's a side point, really....

About creativity ... actually, I know many fantastically creative Chinese people (including some working on OpenCog!) and I guess you do too – what seems more lacking in China is a mature ecosystem for turning wacky creative ideas into novel, functional, practical realizations. I'm sure that will come to China eventually, but it requires more than just importing foreigners, it may require some cultural shifts as well – and it's hard to estimate the pace at which those may happen. But China does have the

capability to “turn on a dime” when it wants to, so who knows!

About Americans being fat and complacent – hmmm, well I’m a little heavier than I was 20 years ago, but I haven’t become a big fat capitalist pig yet ... and I don’t consider myself all that complacent! Generalizations are dangerous, I guess. Silicon Valley, New York, DC, Boston, Seattle, LA – there’s a lot of energy in a lot of US cities; a lot of diversity and a lot of striving and energy. But yeah, I see what you mean – America does sort of take for granted that it’s on top, whereas China has more of an edge these days, as if people are pushing extra hard because they know they’re coming from behind....

Look at the San Fran Bay area as an example. Sometimes the Silicon Valley tech scene seems a bit tired lately, churning out one cookie-cutter Web 2.0 startup after another. But then the Shanghai startup scene is largely founded on churning out Chinese imitations of Silicon Valley companies. And then you have some really innovative stuff going on in San Fran alongside the Web 2.0 copycat companies, like Halcyon Molecular (aiming at super-cheap DNA sequencing) or Binatix or Vicarious Systems (deep learning based perception processing, aiming toward general intelligence). You don’t have a lot of startups in China with that level of “mad science” going on in them, at least not at this point. So there’s a lot of complexity in both the US and China, and it’s far from clear how it will all pan out. Which is one reason I’m

happy OpenCog isn't tied to any one city or country, of course....

Hugo:

Can you list the dominant few ideas in your new book "Building Better Minds".

Ben:

Uh oh, a hard question! It was more fun blathering about politics....

That book – which is almost done now, but still needs some editing and fine-tuning – is sort of a large and unruly beast. It's almost 900 pages and divided into two parts. The first part outlines my general approach to the problem of building advanced AGI, and the second part reviews the OpenCog AGI design – not at the software code level, but at the level of algorithms and knowledge representations and data structures and high level software design.

Part I briefly reviews the “patternist” theory of mind I outlined in a series of books earlier in my career, and summarized in *The Hidden Pattern* in 2006. Basically, a mind is a system of patterns that's organized into a configuration that allows it to effectively recognize patterns in itself and its world. It has certain goals and is particularly oriented to recognize patterns of the form “If I carry out this process, in this context, I'm reasonably likely to achieve this goal or subgoal.” The various patterns in the mind are internally organized into certain large-scale

networks, like a hierarchical network, and an associative hierarchy, and a reflexive self. The problem of AGI design then comes down to: how do you represent the patterns, and via what patterned processes does the pattern system recognize new patterns? This is a pretty high-level philosophical view but it's important to start with the right general perspective or you'll never get anywhere on the AGI problem, no matter how brilliant your technical work nor how big your budget.

Another key conceptual point is that AGI is all about resource limitations. If you don't have limited spacetime resources then you can create a super-powerful AGI using a very short and simple computer program. I pointed this out in my 1993 book *The Structure of Intelligence* (and others probably saw it much earlier, such as Ray Solomonoff), and Marcus Hutter rigorously proved it in his work on *Universal AI* a few years ago. So real-world AGI is all about: how do you make a system that displays reasonably general intelligence, biased toward a certain set of goals and environments, and operates within feasible spacetime resources. The AGIs we build don't need to be biased toward the same set of goals and environments that humans are, but there's got to be some overlap or we won't be able to recognize the system as intelligent, given our own biases and limitations.

One concept I spend a fair bit of time on in Part I is cognitive synergy: the idea that a mind, to be intelligent in the human everyday world using feasible computing resources, has got to have multiple somewhat distinct

memory stores corresponding to different kinds of knowledge (declarative, procedural, episodic, attentional, intentional (goal-oriented)) ... and has got to have somewhat different learning processes corresponding to these different memory stores ... and then, these learning processes have got to synergize with each other so as to prevent each other from falling into unproductive, general intelligence killing combinatorial explosions.

In the last couple months, my friend and long-time collaborator (since 1993!) Matt Ikle' and I put some effort into formalizing the notion of cognitive synergy using information geometry and related ideas. This will go into Building Better Minds too – one of my jobs this month is to integrate that material into the manuscript. We take our cue from general relativity theory, and look at each type of memory in the mind as a kind of curved mindspace, and then look at the combination of memory types as a kind of composite curved mindspace. Then we look at cognition as a matter of trying to follow short paths toward goals in mindspace, and model cognitive synergy as cases where there's a shorter path through the composite mindspace than through any of the memory type specific mindspaces. I'm sort of hoping this geometric view can serve as a unifying theoretical framework for practical work on AGI, something it's lacked so far.

Then at the end of Part I, I talk about the practical roadmap to AGI – which I think should start via making AGI children that learn in virtual-world and robotic preschools. Following that we can integrate these toddler AGIs with

our narrow-AI programs that do things like biological data analysis and natural language processing, and build proto-AGI artificial experts with a combination of commonsense intuition and specialized capability. If I have my way, the first artificial expert may be an artificial biologist working on the science of life extension, following up the work I'm doing now with narrow AI in biology with Biomind LLC and Genescent Corp. And then finally, we can move from these artificial experts to real human-level AGIs. This developmental approach gets tied in with ideas from developmental psychology, including Piaget plus more modern ideas. And we also talk about developmental ethics – how you teach an AGI to be ethical, and to carry out ethical judgments using a combination of logical reason and empathic intuition. I've always felt that just as an AGI can ultimately be more intelligent than any human, it can also be more ethical – even according to human standards of ethics. Though I have no doubt that advanced AGIs will also advance beyond humans in their concept of what it is to be ethical.

That's Part I, which is the shorter part. Part II then goes over the OpenCog design and some related technical ideas, explaining a concrete path to achieving the broad concepts sketched in Part I. I explain practical ways of representing each of the kinds of knowledge described in Part I – probabilistic logic relations for declarative knowledge, programs in a simple LISP-like language for procedural knowledge, attractor neural net like activation spreading for attentional knowledge, “movies” runnable in a simulation engine for episodic knowledge, and so forth. And then I

explain practical algorithms for dealing with each type of knowledge – probabilistic logical inference and concept formation and some other methods for declarative knowledge; probabilistic evolutionary program learning (MOSES) for procedural knowledge economic attention networks for attentional knowledge; hierarchical deep learning (using Itamar Arel’s DeSTIN algorithm) for perception; etc. And I explain how all these different algorithms can work together effectively, helping each other out when they get stuck – and finally, how due to the interoperation of these algorithms in the context of controlling an agent embodied in a world, the mind of the agent will build up the right internal structures, like hierarchical and heterarchical and self networks.

I’m saying “I” here because the book represents my overall vision, but actually I have two co-authors on the book – Nil Geisweiller and Cassio Pennachin – and they’re being extremely helpful too. I’ve been working with Cassio on AI since 1998 and he has awesomely uncommon common sense and a deep understanding of both AI, cog sci and software design issues. And Nil also thoroughly understands the AGI design, and is very helpful at double-checking and improving formal mathematics (I understand math very well, that was my PhD area way back when, but I have an unfortunate tendency to make careless mistakes...). The two of them have written some parts and edited many others; and there are also co-authors for many of the chapters, who have contributed significant thinking. So the book is really a group effort, orchestrated by me but

produced together with a lot of the great collaborators I've been lucky to have in the last decade or so.

Now, so far our practical work with OpenCog hasn't gotten too far through the grand cosmic theory in the Building Better Minds book. We've got a basic software framework that handles multiple memory types and learning processes, and we have initial versions of most of the learning processes in place, and the whole thing is built pretty well in C++ in a manner that's designed to be scalable (the code now has some scalability limitations, but it's designed so we can make it extremely scalable by replacing certain specific software objects, without changing the overall system). But we've done only very limited experimentation so far with synergetic interaction between the different cognitive processes. Right now the most activity on the project is happening in Hong Kong, where there's a team working on applying OpenCog to make a smart video game character. We're going to get some interesting cognitive synergy going in that context, during the next couple years....

The argument some people have made against this approach is that it's too big, complex and messy. My response is always: OK, and where exactly is your evidence that the brain is not big, complex and messy? The OpenCog design is a hell of a lot simpler and more elegant than the human brain appears to be. I know a fair bit of neuroscience, and I've done some consulting projects where I've gotten to interact with some of the world's greatest neuroscientists – and everything I learn about

neuroscience tells me that the brain consists of a lot of neuron types, a lot of neurotransmitter types, a lot of complex networks and cell assemblies spanning different brain regions which have different architectures and dynamics and evolved at different times to meet different constraints. The simplicity and elegance that some people demand in an AGI design, seems utterly absent from the human brain. Of course, it's possible that once we find the true and correct theory of the human brain, the startling simplicity will be apparent. But I doubt it. That's not how biology seems to work.

I think we will ultimately have a simple elegant theory of the overall emergent dynamics of intelligent systems. That's what I'm trying to work toward with the ideas on curved mindspace that I mentioned above. Whether or not those exact ideas are right, I'm sure some theory of that general nature is eventually going to happen. But the particulars of achieving intelligence in complex environments using feasible computational resources – I feel that's always likely to be a bit messy and heterogeneous, involving integration of different kinds of memory stores with different kinds of learning processes associated with them. Just like the theory of evolution is rather simple and elegant, and so is the operation of DNA and RNA -- but the particulars of specific biological systems are always kind of complex and involved.

I'm sure we didn't get every detail right in Building Better Minds – but we're gradually pulling together a bigger and bigger community of really smart, passionate people

working on building the OpenCog system, largely inspired by the ideas in that book (plus whatever other related ideas team members bring in, based on their own experience and imagination!). The idea is to be practical and use Building Better Minds and other design ideas to create a real system that does stuff like control video game characters and robots and biology data analysis systems, and then improve the details of the design as we go along. And improve our theories as we go along, based on studying the behaviors of our actual systems. And once we get sufficiently exciting behaviors, trumpet them really loud to the world, and try to create an “AGI Sputnik Moment”, after which progress will really accelerate. Singularity, here we come!

A9) WHAT IF AI SUCCEEDS?

The Rise of the Twenty-First Century Artelect

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Abstract

Within the time of a human generation, computer technology will be capable of producing computers with as many artificial neurons as there are neurons in the human brain. Within two human generations, intelligists (AI researchers) will have discovered how to use such massive computing capacity in brainlike ways. This situation raises the likelihood that twenty-first century global politics will be dominated by the question, Who or what is to be the dominant species on this planet? This article discusses rival political and technological scenarios about the rise of the artelect (artificial intellect, ultra-intelligent machine) and launches a plea that a world conference be held on the so-called “artilect debate.”

Note : This essay was the very first article I ever published as an AI researcher, way back in the 1980s. It introduced the word “artilect” to the world.

Introduction

Many years ago, while reading my first book on molecular biology, I realized not only that living creatures, including human beings, are biochemical machines, but also that one day, humanity would sufficiently understand the principles of life to be able to reproduce life artificially (Langton 1989) and even create a creature more intelligent than we are. I made this discovery several years before I heard of the subject of AI, but when I did, I felt the same wave of curiosity and fascination as I felt earlier with molecular biology. The two subjects seemed to address similar questions, What is life? What is intelligence?

Today, I am a professional intelligist and just as fascinated with the idea of contributing toward creating an artificial intelligence, or *artilect*, as I was as a youth. At the time, the idea of building a machine smarter than its creator seemed like pure science fiction and at least a century or more away. Today, I believe that given current technological trends, humanity will have its first artilects before the end of my lifetime, and if so, the consequences for humanity will be profound. It is difficult to find any social issue more important than the prospect of living in a world “peopled” by creations massively smarter than we are. It is an issue that ranks with those concerning the possibility of a nuclear holocaust or an ecological breakdown. In other words, it is concerned with the destiny of human beings as a species.

In fact, it is an even greater issue. The rise of the artilect in the twenty-first century, the issue that in my belief will

dominate the global politics of the period, introduces something new into human affairs. For the first time, we are able to pose the question, What is humanity for? I do not mean to ask a religious question but a real one concerned with the choice about whether humanity will or will not serve as the stepping stone toward a higher form of evolution.

As is shown in this text, I believe that humanity will be sharply divided on the question about whether artifacts in an advanced form should be allowed to exist. The rival answers to this question are the major theme of this article.

Technological Trends

Many intelligists believe that it is only a question of time before it will be technologically possible to build an artifact. Whether it will be ethical to do so is another question and, sadly enough, an issue that only a handful of intelligists have discussed over the years, either directly or indirectly (Turing 1950; Michie 1974; Evans 1979; McCorduck 1979; Jastrow 1981; Sinclair 1986; Drexler 1986; Kelly 1987; Hameroff 1987; Waltz 1988; Moravec 1988; de Garis 1989).

An increasing number of intelligists also think that AI is undergoing another paradigm change away from the current symbolic processing paradigm to that of massive parallelism, or parallel distributed processing (PDP), or simply connectionism (McClelland and Rumelhart 1986).

This new paradigm is, in fact, an old one, reminiscent of the first AI paradigm of the 1950s and 1960s when self organization had the upper hand. At the time, computer technology could not provide massively parallel machines to support parallelist ideas, so the approach was not terribly successful. Intelligists' ideas adapted to the hardware that was available at the time, namely sequential, mono-processor, von Neumann machines.

Today, however, computer technology will soon be capable of providing massively parallel machines, and a return to the original approach is warranted; this time, success should be much easier. In fact, as I soon show, the prospect of having billions of components in a single computer will place enormous pressure on the theorists to devise ways to use this hitherto undreamed of computing capacity in brainlike ways. This theorizing has already begun and is referred to as the PDP, or connectionist, revolution.

However, to get a feel for the size of this coming hardware capacity revolution and the time scale over which it will occur, it is useful to consider an argument by Waltz (1988).

Waltz attempts to estimate how long it will be before computers have the same computing capacity as the human brain, meaning that these new machines will be able to process as many bits per second as the brain. To make this estimation, he needs an estimate of the processing capacity of the brain. He takes the following figures from the neurophysiologists.

There are approximately a hundred billion neurons in the brain, each of which is linked to roughly ten thousand others; hence, there are ten to the power 15 neuronal connections, or synapses as they are called. Each neuron fires roughly 10 times per second. Let us assume that the information content of each synapse (that is, the strength of the connection) is 4 bits. Thus, the total bit processing rate of the brain is roughly 4 times 10 to the power 16 bits per second. Waltz compares this figure with a similar figure for the performance of the Connection Machine (Hillis 1985). The Connection Machine is massively parallel, with 65,536 separate processors that can function simultaneously; and each processor is able to communicate with any other through an inter-processor communications network.

If each processor is connected to 10,000 others and sends a 32-bit message in each message cycle, 170 such cycles can be executed per second. A Connection Machine costs about \$4 million; so, for \$20 million (the upper limit of what people are prepared to pay for a single supercomputer), five such machines can be bought. This results in a bit processing rate of $6.5 \times 10^4 \times 10^4 \times 32 \times 170 \times 5 = 2 \times 10^{13}$ bits per second, which is a factor of about 2000 short of the human figure.

If a similar comparison is made of the respective memory capacities of the human brain and the Connection Machine, the brain is even further ahead. The human memory capacity can be estimated at 10^{11} neurons $\times 10^4$ synapses per neuron $\times 4$ bits per synapse = 4×10^{15} bits of memory.

With 256K memory chips, the comparable figure for the Connection Machine is $6.5 \cdot 10^4 \cdot 64K$ bits of memory per processor $\cdot 5$ machines = $2.2 \cdot 10^{10}$ bits, which is about 200,000 times less than the brain; so, the machine has a long way to go in terms of memory capacity.

How long will it take for the machine to overtake the brain in memory capacity? (It is assumed that the processing capacity of the brain will be overtaken by the machine well before the brain's memory capacity). It is assumed that the price of a transistor on a very large scale integrated (VLSI) chip will continue to fall at roughly the same rate as it has over the last 35 years, namely, by a factor of 10 every five years.

If this rate is extrapolated, then humanity will have a machine of human memory capacity by, roughly, the year 2010, that is, a single human generation from now. Needless to point out, this development will not stop at 2010. It is likely to go on, and the price of a massively parallel machine will continue to fall.

Sixth and Seventh Generations

The historical development of computer technology has traditionally been divided into generations. The first generation was based on the valve, the second on the transistor, the third on the integrated circuit, and the fourth on the large scale and very large scale integrated circuit. The fifth generation, a term coined by the Japanese, is

somewhat less explicit, but represents massive parallelism and heavy dependence on knowledge-based systems. Sixth and seventh generations are even less well defined, but for the purposes of this article, they are defined as neuronal computing and molecular computing, respectively.

This section deals with those aspects of research in computer science and related fields which will play a role in the rise of the twenty-first century artifact. The aim is to show various trends that will have an impact on future machine generations in the next human generation or two.

The most significant recent change in AI has been the renewed willingness to use the brain as a model for intelligence building. Until recently, the ignorance of the neurophysiologists about how the brain functions, plus the impracticality of building massively parallel machines, dampened any attempt to construct “electronic brains”; however, these days seem to be numbered. There is a growing awareness that the time is ripe for intelligists to renew their attack on building brainlike machines.

Mead (1987), for example, is using VLSI techniques to construct electronic devices with not only the usual transistors but capacitors and amplifiers as well to mimic the behavior of the neuron in silicon. With millions of such devices implanted in superchips, a brainlike device becomes possible. The neurochip is born.

The prospect of neural computers raises an interesting question about whether it will be the neurophysiologists or

the intelligists who make the breakthroughs in elucidating the mysteries of the brain. The neurophysiologists are severely handicapped in that they have great difficulty in testing their hypotheses by simulation. The only systems they have to investigate are real brains themselves, with all their fantastic complexity.

Intelligists, however, will be able to test their hypotheses directly on their neuronal computers (“neuters”). They will be able to design machines which store the firing histories of the artificial neurons and which analyze the significance of certain neuronal groups firing and so on. No limit exists to the flexibility of these machines.

As silicon compilation techniques are perfected, it will be possible to design neurochips cheaply and easily so that neuronal hypotheses can be implemented directly into neurochips at minimal cost. Silicon compilers will be designing chip layouts as easily as ordinary compilers translate high level code into machine language.

I believe that given current technological trends, humanity will have its first artifacts before the end of my lifetime, and if so, the consequences for humanity will be profound.

Another possibility is to imagine neuronal computers designed with such flexibility that their architecture can be easily specified by software (Minsky 1986). This ability would avoid the need to redesign neurochips every time a new neurohypothesis required testing.

The neurophysiologists will be quick to profit from the existence of neural computers to test their brain theories. A marriage of the two subjects is, thus, likely; so, intelligists will become biologists to an increasing extent, and the neurophysiologists will be getting heavily into AI.

Another technology likely to have an impact is optical computing. Recent research on *bistability*, that is, the two state behavior of certain non-linear optic devices, allows computing to be entirely optical and, hence, able to overcome such problems as crosstalk, which plagues electronic computing. Optical computing would be much faster than electronic computing, so the interest in this new technology is significant and growing (Feitelson 1988).

A third technology that is not yet well developed is *molecular computing* (Drexler 1986; Hameroff 1987; Langton 1989), which aims to use genetic engineering techniques, among others, to create substances capable of computation but at molecular scales. Molecular computing is important because limits exist to the number of transistors one can cram onto a two-dimensional surface without running into quantum effects. However, these limits can be postponed to some extent by introducing a third dimension into chips, thus piling the number of layers until a solid block is produced.

The great attraction of molecular computing is not only its (molecular) scale but the added advantages of biological adaptation, such as growth, self-repair, and learning. Recent and spectacular progress in superconductivity

promises the possibility of superconducting proteins at room temperature, which would allow a huge quantity of such material to be packed together without worry of heat dissipation problems.

The Japanese Ministry of International Trade and Industry (MITI) is taking molecular computing seriously and, in 1984, promised \$36 million to such research. Unfortunately, the U.S. government has been much slower. The same story is true for the European community.

Recent American research has shown that genetically engineered polypeptides can be metallized, thus giving them the advantages of electric conductivity, so even if superconducting proteins are not found, biologically based computing technology can take advantage of electronic conduction speeds.

Molecular biology has made so much progress in the study of bacteria over the last decade that more and more biochemists are moving up to multicellular creatures and studying such molecular mechanisms as embryological development, including how neurons grow and connect with other neurons. As the principles of these processes are discovered, it will become possible to grow computer brains according to seventh generation technology.

In short, in AI circles, the brain is in again, and research money is starting to flow to support brain-oriented computing. The Japanese have launched two projects of this type. One is called simply the Sixth Generation Project and the other the Human Frontiers Project. The National Science Foundation in the United

States is now funding the Neuronal Computing Project, and the European Commission has launched its BRAIN project, so we should be seeing the first brainlike computing devices shortly.

Tomorrow's intelligists will probably be multidisciplined experts in the fields of microelectronics (UltraLSI), molecular (nano)electronics, neuro-physiology, embryology, optical computing, and so on. Today's symbolic computing on monoprocessor machines will probably be considered quaint.

As Machines Grow Smarter

This section attempts to give a gut feel about what it might be like to live in a world where computers are rapidly increasing their intelligence and discusses the feelings this development might evoke in human beings.

In my view, the biggest impact that smart computers will have on ordinary people will occur when machines begin having conversations with them. This achievement is still some time away. I would say it will be another five years before the first commercial conversational systems are ready. These machines will be capable of recognizing and responding to the simple utterances of their owners. Over the years, however, the sophistication of these systems will increase, until one day people realize they are having relationships with their computers.

Such advanced systems will be capable of learning and will probably be the products of sixth generation neural computers, using hardware which is based on brain

modeling. They will speak well and understand with breathtaking rapidity. Remember a computer thinks a million times faster than our neurons do.

The biggest impact that smart computers will have on ordinary people will occur when [they] begin having conversations with them.

I remember showing my girlfriend how a Lisp machine could calculate the factorial of 1000 in a matter of seconds and display the answer over several screens. She was aghast. She had never seen such analytic power before. I remember the same sense of wonder and even fear at seeing Macsyma, the mathematical assistant program, functioning for the first time before I knew how it was done and, hence, before the magic was taken away.

Another impact on the general public will come from household and commercial robots. These devices will be mobile, providing a range of different services to the public. While they are stupid and docile, we need not fear them; however, the steady increase in their intelligence year by year, as next year's model promises to be more emotionally aware than this year's, will sow doubts about where all this fabulous technology will end up. In 20 years time, it will be commonplace to say that the twenty-first century will be dominated by the machine if humanity so chooses, and maybe even if not.

The general public, the politicians, and, certainly, the intelligists will be discussing the fate of the artefact and the fate of humanity to a far greater extent than is the case

today. In fact, I am rather annoyed by the current ostrichlike attitude of many intelligists with regard to the social implications of their work. I label such intelligists “the mice” because they have the horizons of mice.

It is only a question of time before enough people see the writing on the wall and start to seriously question just how far these artifacts should be allowed to develop. Today, this questioning is somewhat academic because we are still some time away from such realities, but it will be real and pressing in a generation or two and will constitute the dominant issue of the age.

One can expect that people will take sides and that considerable energy and passion will be devoted to pleading the various options, so it is now appropriate to discuss just what the various options are.

Options

Basically, I see two major options: We let the artifacts freely evolve, or we don't.

If we let them freely evolve, we take a risk because these machines might choose to modify themselves in random ways, similar to the chance mutations of biological evolution. Limits exist to the level of control one can place in machines. One can build in metalevel strategies to control the strategies, one can build meta-metalevels to control the metalevels, but ultimately at the top level, certain strategies simply have to be built in. To change these top-level strategies and choose between good changes

and bad changes, the only resource left is survival. Our artefacts might choose to become subject to the same Darwinian forces as biological creatures and for the same reasons.

However, because ethical attitudes are in the limit merely a particular configuration of molecules, we could never be sure that the artefacts would treat human beings with the same level of respect as we would like. After all, when we kill mosquitoes or even cows, we think little of it because we believe mosquitoes and cows are such inferior creatures that we feel justified in exercising the power of life or death over them. We could not rule out a similar attitude on the part of the artefacts toward human beings.

However, a lot of people will start seeing humanity as a stepping-stone toward a higher form of evolution and will claim it is humanity's destiny to help the artefacts get off the planet and into their true environment - namely, the cosmos, perhaps in search of other hyperintelligences.

Some human beings might want to modify their own bodies and brains to become artefacts themselves. This is a third possibility. There might be others.

What is almost certain is that a great debate on the artefact issue will dominate the climate of global politics in the twenty-first century. It is quite likely that preliminary versions of this great debate will occur among academic circles this century. It is the task of intellectuals to look into the future and anticipate major issues. The intelligists have

a moral responsibility to do so, given that it is we who are creating this immense problem.

One of the final ironies of AI is that its long-term goal, which is explicit in the label of the subject itself, is to create an artificial intelligence (eight syllables) or an artelect (three syllables), but to date, too few intelligists are talking publicly about the consequences to humanity of AI succeeding, hence the title of this article.

Scenario 1

The following scenario is my own contribution to the artelect debate. I might not necessarily believe this scenario will prove realistic, but I find it plausible and interesting.

I see humanity being split into two ideological camps, which I label, respectively, the Terrans, (as they might colloquially come to be known) and the Cosmists.

The Terrans

The Terrans are the *terrestrialists*, that is, those people who believe that human beings must remain the dominant species on earth. All ethical systems to the Terrans presuppose that human beings are the end and not the means by which actions are judged. The Terrans will fear a possible takeover by the artelects or those human beings willing to be modified to become artelects themselves.

When artelect technology becomes capable of making genuinely intelligent machines, the artelect debate will

reach its climax, and passions will be high. At this point, it is time to introduce the second ideological camp.

The Cosmists

The Cosmists have the opposite belief. The Cosmists will want to give the artifacts the chance to develop themselves, escape their provincial terrestrial origins and venture into the cosmos, understand nature's mysteries, and perhaps search for other life forms in the universe.

At this point, possessing a good science fiction background is an advantage because nothing else will help. The nature of the subject we are talking about demands it.

The Cosmists will invent a new religion and will defend it with passion because they will feel they are responsible for the next stage in the great upward movement toward . . . toward what?

The Terrans will be frightened that the experiments of the Cosmists will not only destroy the Cosmists but the Terrans as well. The Terrans will not permit the Cosmists to allow the artifacts to evolve to an advanced state. In the extreme case, the Terrans will be prepared to exterminate the Cosmists for the sake of the survival of the Terrans.

We could never be sure that the artifacts would treat human beings with the same level of respect as we would like.

Our scientific knowledge tells us that it is virtually certain advanced forms of life exist out there somewhere. With our puny human brains and our frail human bodies, we are not equipped to venture forth from the cradle we call earth, but a suitably adapted artefact could.

The dominant source of global political conflict in the twenty-first century will be between these two groups.

Global communications in 20 to 40 years will be such that every person will be able to communicate easily with everyone else, at least in the rich countries. English will have become the world language and by then nearly everybody will speak it. Robots will have become so productive that material wealth will no longer be an issue. Thus, the source of bitter ideological conflict in the nineteenth and twentieth centuries, namely, between capitalism and communism, will fade away. Who cares who owns capital when there is a surfeit of material goods?

I see the Cosmists forming their own ideological, geographic nation state (analogous to the way the Zionists formed the state of Israel) as a reaction to the social pressure against them from the Terran majority in most, if not all, nations.

The Cosmists, however, fully aware of the fears of the Terrans, will pursue an age-old policy, mutual deterrence, so that the twenty-first century, politically speaking, will be similar to the twentieth century, only the weapon systems will be all the more horrific and artefactual.

However, a way out of this dilemma might be found. With twenty-first century technology, mass migration of a

people might be possible, so the Cosmists might be rocketed to some outer planet to do what they want with themselves.

Meanwhile, the Terrans will arm themselves to the hilt and destroy any foreign body approaching the earth, being all too conscious of their greatest weakness, namely, their human intellects.

Scenario 2

The second scenario is probably more popular in science fiction. It is simply that the artefacts will take over. Events might evolve too quickly for human beings to remain in control. If the artefacts do take over, it will be difficult to predict what the outcome will be. Perhaps they will treat us as pets and ignore us, as we ignore most creatures, but we could never be sure this case would be true. Perhaps, the artefacts would quickly decide that their destiny was in space. However, the earth is a warm, cosy place in a bleak, black universe. Who knows? Perhaps they will decide that human beings are pests and exterminate us before we decide to exterminate them.

World Conference

I would like to close this article by pleading for a world conference on this critical topic. I would like to see a group of top people from various fields bring their prestige and intellectual weight to this most important subject. Because the question of the rise of the twenty-first century artefact concerns everyone, a wide range of disciplines should be

represented at such a conference. All perspectives should be given an airing.

Of course, because the aim of the conference is to bring the artefact debate to public consciousness, the media should be present in force. It is likely that the theme of the conference will ensure a massive interest on the part of the media. It is difficult to think of a stronger drawing card.

Why is it important to hold such a conference? My hope is that humanity can avoid what happened with the nuclear physicists in the 1930s when they began to realize a nuclear chain reaction might be possible, with a subsequent release of enormous energy. We now live in a world threatened by a nuclear holocaust in which everyone would die. If the nuclear physicists at the time had thought hard about the consequences of their work, perhaps they might not have continued their research, feeling that its consequences were too horrible.

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A10) MERGE OR PURGE?

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Abstract

*Will humans **merge** with their machines (a la Kurzweil) or will they **purge** themselves of cyborgs, Cosmists, and artefacts in a gigadeath Artefact War (a la de Garis)? This “species dominance” question will dominate our global politics this century. This essay presents the two main options, and then discusses which is the more likely.*

1. Introduction

Ray Kurzweil and I have crossed swords several times in the media in the past on the question of whether humanity will “merge or purge” our increasingly intelligent machines.

This essay presents the two main views on what is likely to happen to humanity as our machines become artefacts (i.e. godlike massively intelligent machines, trillions of trillions of times above human levels). I have labeled these two views the “*merge*” view (Kurzweil’s), and the “*purge*” view (mine) for simplicity. I begin by discussing the *merge* view.

a) The “Merge” View (Kurzweil)

Kurzweil thinks that the most likely scenario for humanity as our machines become increasingly intelligent is that, to quote him, “*We will merge with our machines.*” He thinks that in subsequent steps, the human side of our cybernetic selves will soon be swamped by the vastly greater machine capacity, and that “we” will become increasingly machine-like, i.e. artefacts. He is not alone amongst prominent commentators on the species dominance issue, who hold this view. Another prominent figure with a similar take is Kevin Warwick in the UK.

b) The “Purge” View (de Garis)

I think it is much more likely that the Terrans (the people opposed to the creation of artefacts), will go to war against (i.e. purge) the Cosmists (who want to build artefacts), against the Cyborgists (who want to merge with their machines, e.g. Kurzweil), and against the artefacts themselves, before the cyborgs and the artefacts become too intelligent. This war will be waged with second half 21st century weapons and hence will kill billions of people (“gigadeath”).

Discussion

Kurzweil is skeptical of my scenario, because he thinks that if it finally does come down to a war between the Terrans and the Cyborgs/Artefacts/Cosmists it would be a “no

contest” because the latter would be so much smarter and more capable than the (human) Terrans. As Kurzweil puts it colorfully - “like the US Army fighting the Amish!) (For those of you, probably non American, who are unfamiliar with who the Amish are, they are an American religious sect, who do not use any technology later than the 19th century. So they drive around in horse and buggy, don’t use telephones, or the internet.) So naturally, they would lose against the modern US Army.

Of course Kurzweil is correct in thinking that *if* the Terrans wait until the artefacts and cyborgs come into being before hitting back, it would be a no contest. It is for this reason, that I believe the Terrans will take the Kurzweil argument to heart and therefore reason that they will have to first strike while their intelligence levels are sufficient, to have any chance of winning.

So, Kurzweil’s “no contest” argument can thus be refuted. But there are other points that can be made re a potential conflict between the Cosmists (Cyborgists) and the Terrans. What if Cyborgism proves *so popular*, that there are in effect no Terrans left, i.e. everyone goes Cyborg. If this were to happen then there would be no gigadeath artefact war, because it takes two sides at least to wage a war.

The heart of the issue, and the major thrust of the remainder of this essay, thus seems to be just how popular Cyborgism will prove to be.

Kurzweil is an inveterate optimist (almost childishly so, and has been roundly criticized for this, to the point that he is now publicly defending himself in the media saying that he is well aware of the potential hazards of the rise of the artelect.) His raison d'être is to better the quality of life of humanity by his inventions, e.g. his hand-held text-to-voice reader for the blind. No one questions the value of his inventions and only praise him for it. Where Kurzweil is weak however, is his inability to weigh equitably the pessimistic with the optimistic consequences of the rise of the artelect that seems inevitable this century.

It is not enough to be optimistic. Optimism is fine if it does not conflict with realism, but when it does, taking a "Pollyanna" view of the world will only get one into trouble with the "cold eyed" political realists who have so much experience of the past horrors that humanity is capable of inflicting upon itself. For example, the 20th century was the bloodiest in history, killing about 200-300 million people for political reasons (wars, genocides, purges, ethnic cleansings, etc).

So, taking a "cold eyed" look at the rise of the cyborgs and the artelects, what do I think will happen, most likely?

I do think there will be cyborgs, probably billions of them. In the early stages, Kurzweil may probably be right. There may be very few pure Terrans left. Nearly everyone will be adding memory enhancers to their brains, so that they can, for example, learn a language in a day, and be able to look up facts from a huge nanoscale database in their heads, etc.

This view that I have just expressed, is widely held by many people in the species dominance community. But it is at this moment in history that the problems really start.

Humanness Destroyed

If everyone modifies themselves in the same way, at the same speed, then hypothetically, the whole of (post) humanity could march lock-step into an artefactual future without any real problem. But that is totally unrealistic. What is far more likely is that some people will cyborg themselves fast and heavily, while others do so more slowly and more moderately. It is also virtually certain that there will be a wide variety of ways to cyborg oneself, offered by a slew of different cyborging companies.

This will lead to what I call the phenomenon of “*cyborgian divergence*”, i.e. there will be a huge variety of quasi humans in the environment, including within families, couples, amongst friends, etc. Early cyborgs will then wake up viscerally to the fact that traditional humanness is being destroyed, and that the emotional price being paid may be extreme, causing alarm bells to go off in a major way.

For example, I consider it likely that the artefactual components being added initially to ones brain will allow significant memory enhancement, and with not much intelligence increase, if any, but may have unanticipated side effects, such that personality and behavioral changes occur, enough to make people feel that they have “lost their friends”, or “lost their children” etc.

For example, imagine a young mother gives birth to her first child and adds a grain of sand that has been nanotech-ed to increase the mental capacity of her baby's brain by a zillion fold. As the baby grows into a toddler, the mother feels she cannot talk to her child. The child's behavior appears to be autistic - not because the brain areas of the child are poorly connected, as with a real autistic child, but because the cyborg child is thinking a million times faster than its mother and is utterly bored by her, preferring its own (hugely faster thinking) company.

To the mother, she will feel she has lost her child. This will cause real emotional trauma to the mother, and turn her bitterly against cyborging. She will hate what she has done.

Similarly with older parents who feel they have lost their adult children, when the latter decide to cyborg themselves.

The above two examples are just a drop in the ocean of the type of things that could go wrong with cyborging. There is ample scope for "Murphy's Law" (i.e. if something can go wrong, it will go wrong) to operate during this historical period of "cyborgian divergence."

As more and more early cyborgs begin to wake up to the huge emotional and human cost that they are paying from what is happening all around them, they will learn to value humanness a lot more than they did earlier, and will start to make political strategic decisions.

I believe it will take time for the cyborgian components added to people's brains to move up from being quantitatively superior, e.g. faster, to being qualitatively superior, e.g. allowing higher intelligence. It will take several decades at least for neuroscience to attain a quasi full understanding of the neural nature of human intelligence. Cyborgism could be operating several decades before such full human intelligence understanding is attained and incorporated into cyborgian components.

This non rapid increase in qualitative capability will allow the Terran-inclined early cyborgs to keep intellectually competitive with the non Terran-inclined cyborgs.

I see these Terrans (or early Terran cyborgs) arguing now along my traditional lines. They will choose to remain essentially human, and feel a visceral rejection to what they see happening all around them, and organize politically.

They will be fully aware that time is not on their side, so that if they wish to remove the risk that they will be superseded by a growing tide of artefacts and artefact-like cyborgs, they will have to organize politically, and quickly, and then first strike, purging the cyborgs, the artefacts and the cosmists so that the existential threat of humans being wiped out by highly advanced artefacts in the future is removed.

Surveys on Species Dominance

Predicting how the mix of Terrans, Cosmists, Cyborgists, and artelects will interact with each other will be complicated, especially as views on species dominance begin to polarize. It would therefore be helpful to be able to work with some real opinion data on this issue and this is something the professional sociologists can do. Let me spell this out.

I think the opinion pollsters should start making regular polls on the question of species dominance. Since it is this year (2011) that the issue of species dominance is going main stream in the (US) media, the general public can begin to think about where they stand in the Terran/Cosmist spectrum, and then be able to give a fairly informed opinion to the pollsters.

Once one has the data, i.e. knowing the proportion of people who want artelects to be built or not, or who choose to cyborg themselves etc, then more realistic policy decisions can be made by the strategists/intellectuals of the various competing parties – i.e. Terran, Cosmist, Cyborgist.

Some early surveys have already been made, and the results are interesting. I know from the experience of my own lectures that I have given over the past two decades on the issue of species dominance, in which at the end, I invite my audiences to vote on whether they are more Terran than Cosmist, that the result is usually 50-50.

At first I thought this was a consequence of the fact that the species dominance issue is too new - that people don't

really understand it and hence vote almost randomly, giving the 50:50 result. But, gradually, it dawned on me that many people felt as ambivalently about the issue as I did (i.e. pro Cosmist due to the awe inspiring nature of the artefact, and pro Terran, due to the fear that the artefacts, in an advanced form, might decide to wipe out humanity). Typically my Terran/Cosmist split would run from 40:60 to 60:40 (although I do notice that with my very young Chinese audiences in computer science that the pro Cosmists are at about 80%).

I can give two quasi official poll results on the Cosmist/Terran split. One is by the BBC in Oct 2006, when the general public was invited to vote between Kurzweil's optimistic "merge" scenario (about 60%), and my "purge" (i.e. artefact war) scenario (about 40%). Another vote took place a year before on the popular US radio interview show "Coast to Coast". At the end of my interview, listeners were invited to vote their preference, Terran or Cosmist, and the split was 55% Terran, 45% Cosmist.

This more or less 50:50 split will only make matters worse I feel. If the split were 10:90, or 90:10, then one group could wipe out the other if it came to a war, and humanity need not be nearly as traumatized as with a 50:50 situation. The 50:50 split, if it is maintained, could not be worse. It shows how profoundly divisive this species dominance issue is, which will only increase the passion level of the conflict and the size of the final horror – a gigadeath artefact war.

A11) SPECIES DOMINANCE DEBATE : FROM MAIN STREAM MEDIA TO OPINION POLLS

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Abstract

2011 is the year that the “Species Dominance Issue” (i.e. whether humanity should build artefacts (artificial intellects), with mental capacities trillions of trillions of times above the human level, in the coming few decades), is going main stream in the media in the developed world. This will mean that within a few years, members of the general public in these countries will be sufficiently informed to be able to form their own opinions on the issue. Once that happens, the time will then be ripe to have opinion polls on the topic, so that the theorists within the “species dominance movement” need no longer be guessing about how society will react towards the issue. Instead they will have hard sociological data. They will know who thinks what, e.g. “What kinds of people are Cosmists (people who want to build artefacts), or Terrans (people opposed to building artefacts), or Cyborgists (people who want to become artefacts themselves by adding artefactual capacities to their own brains)?” Those leaders pushing the international media campaign on the issue of

species dominance should soon be thinking hard about how to get the opinion pollsters active on the issue. Once these leaders have the data, they will be able to make much more informed (political) decisions on the issue, e.g. some scenarios will become more probable and others less, which will impact on the level of energy given to the various ideological stances related to the rise of the artelect.

1. Introduction

It is now clear that 2011 is the year that the issue of species dominance (i.e. whether humanity should build artelects this century or not) is going main stream in the media in the developed countries. For example, the Barry Ptolemy movie “Transcendent Man” on the life and ideas of Ray Kurzweil has become cult, and a top seller on iTunes (<http://search.yahoo.com/web?fr=slv502-msgr>, http://www.youtube.com/watch?v=mwPPJ-oy_eM).

Kurzweil made the cover of Time magazine in early 2011 (<http://www.time.com/time/magazine/article/0,9171,2048299,00.html>). History Channel had me in a 90 minute documentary “Prophets of Doom” on the species dominance issue (<http://www.youtube.com/watch?v=jnKbwwEOwwc>), and again in a Discovery Channel 45 minute documentary on “The Singularity” to be released in November 2011. In June 2011, Australia’s national television ABC’s “Hungry Beast” program had Kurzweil and me in a 5 minute piece on the issue (http://www.youtube.com/watch?v=vDZc9QJU_Hg). I’m

planning to launch a European media campaign shortly to cover the UK, Holland, Belgium, France and Germany, whose 3 languages I can speak having spent 15 years living in the capitol of the EU (European Union, i.e. Brussels, Belgium, Europe). With the wind in our sails from the US and Australian campaigns well launched (i.e. with links to videos that can be easily sent to journalists in other countries) it will be easier to launch things in Europe.

2. Stabbing in the Dark

Over the past few years, it has also become clear that Ray Kurzweil and I are often seen by the media as representing polar opposite views on which scenario is the more likely to become reality in the coming decades, regarding the rise of the artelect. Ray, whose inventing and propaganding capacities I admire, takes a very optimistic view, saying that “We (humans) will merge with our machines.” He paints a rosy picture of nanobots roaming our bodies in their zillions that are programmed to kill viruses and harmful bacteria, thus ridding us of disease, and to repair aging cells, thus ridding us of our mortality. He sees humans adding artelectual components to their brains thus boosting human intelligence into the super-intelligent range. He deliberately paints a positive picture to his many audiences as he hits the speech circuit around the US.

I, on the other hand, could not be more polar extreme. I’m predicting the worst war that humanity has ever known, the most passionate, and the most deadly, killing billions of

people over the issue of species dominance. I claim that a lot of people will be horrified at the gradual loss of “humanness” as they see all around them, people becoming more and more “cyborg” (i.e. cybernetic organism, i.e. part machine, part human). They will feel profoundly alienated and threatened as they watch the cyborgs and artefacts increase their intelligence each year. They will organize politically and then go on an extermination war to kill off the Cosmists (people in favor of building artefacts), the Cyborgists, plus the cyborgs and artefacts, for the sake of the preservation of the dominance and hence survival of the human species.

Ray and I share at least one thing in common. We are both “shooting in the dark”. We are both hypothesizing. We don’t really know what will happen. His scenario seems plausible and a lot of people buy it. Mine also seems plausible and according to my small scale polls that I take at my own talks, plus a few larger scale polls, a lot of other people also buy it. So who is right?

3. From Main Stream Media to Opinion Polls

I was recently in Australia for the 2011 Humanity+ conference organized by “Mr. Singularity, Australia” (Adam Ford) who organizes the Singularity and Humanity+ conferences in Australia (<http://summit.singinst.org.au>). He is currently filming people for a documentary he is making on the singularity. He got 5 hours of me on file. It was during this marathon of questions and answers that I

became increasingly conscious of the importance for the “species dominance community” that opinion polls be taken of the general public’s attitudes toward the species dominance issue. It became clear to me that the next obvious step once the species dominance issue has gone thoroughly main stream in the media, is for opinion polls to be taken.

Why do I feel this? Because such opinion polls, which can be taken a few years from now, once the general public in the developed countries have had time to absorb the messages from the species dominance community, will be able to provide some solid sociological data on how people think. How do they divide up between the Cosmists, the Terrans, and the Cyborgists? What are the correlations between the many categories of social groups (e.g. the religious right, the liberal left, the scientifically educated, the working class, the upper middle class, etc) and their preferences along the Cosmist/Terran/Cyborgist spectrum?

4. Political Consequences

Once the sociological data is in (and obtaining such data may serve as the topic of many PhD theses in university departments of sociology, political science, psychology and philosophy) the various scenarios related to the rise of the artefact, can be re assessed in the light of the hard data. For example, how would Ray Kurzweil react or change his tune, if he learned that about half of people *strongly* oppose the rise of artefacts AND cyborgs? He would be forced to give

a more balanced (i.e. utopian AND dystopian) presentation of the rise of the artelect, in his speeches around the US.

If I learned that the *vast* majority of people were in favor of becoming cyborgs, then I would have to tone down the “doom and gloom” of my dystopian message, and increase the “sweetness and light”, a la Kurzweil, in my talks and media appearances.

However, I claim that some early sociological data is already in. I make it a habit when I give my artelect talks, to invite the audience to vote on the species dominance issue. I ask them whether they are Terran (preferring that artelects/cyborgs not be built), or Cosmist/Cyborgist (preferring that artelects/cyborgs are built). My experience, based on two decades of giving such talks, is that the issue divides humanity about evenly. The split ranges from 40/60 to 60/40.

At first I thought this 50/50 split was due largely to ignorance of the issues, so that people were voting almost randomly, and hence the even split. But gradually I began to realize that people were ambivalent within themselves as individuals. They were in awe at the prospect of building artelect gods, with their vastly superior mental capacities compared to human beings, but were horrified at the prospect of a “gigadeath” artelect war between the Cosmists/Cyborgists and the Terrans over the species dominance issue.

For example, the US national radio program “Coast to Coast” had me talking in 2005 on this issue. After the interview, they took a survey by inviting people to call in and vote whether they preferred that artelects should be built or not. The answer was 56% anti artelect, 44% pro artelect (<http://www.coasttocoastam.com/guest/de-garis-hugo/6492>, <http://www.coasttocoastam.com/show/2005/04/06>). The following year, in 2006, the BBC made a 50 minute documentary in their Horizon series, called “Human V2.0”. On their website, viewers were invited to vote on whether they preferred Kurzweil’s optimistic scenario or my pessimistic one. The answer was 60% for Kurzweil, 40% for me (<http://www.bbc.co.uk/sn/tvradio/programmes/horizon/broadband/tx/singularity/clash/>, <http://thoughtware.tv/videos/watch/93-Human-2->). These two surveys both resulted in fractions within my 40/60 – 60/40 experience, although lately, amongst highly selected audiences (e.g. at singularity or humanity+ conferences, the pro artelect proportion has shot up, e.g. 90% pro artelect, 10% anti artelect, but that is to be expected in a self selected pro artelect conference.

For the sake of argument, let us assume that large scale (Gallop Poll?) surveys which are professionally done, with a large sample size that select truly representative samples of the whole population, give the result that the pro artelect and anti artelect proportion of the general public is about 50/50, then that will have both ideological and political consequences.

For example, I will be able to point the finger at Ray Kurzweil and say “Your optimistic message is only half the story. You are not being responsible to your audiences in ignoring the very real negative possibilities of the rise of the artelect. You are pulling the rosy wool over people’s eyes, and fooling them. Once your “exponential increase in technology” message has been generally accepted, people will then move on and start thinking about the political consequences of the rise of the artelect. Once that happens, you risk being sidelined, because you refuse to talk politics. Your Pollyanna style will go out of style, and you will be sidelined, a painful development for you, since you have made selling the singularity message as one of your major life goals.”

But, the major consequence of hard sociological data on the species dominance issue will be political. Once we know who thinks what – e.g. imagine most of the religious right in the US are strong Terrans (just a guess on my part?!) then the Cosmists will know that and can adjust their strategies accordingly. Those social groups favoring Terranism will know who their opponents are, i.e. they will know which social groups tend to be pro artelect (e.g. the scientifically trained, upper middle class liberals? – again just a guess on my part?!). With such sociological data at hand, the various opposed ideological groups will have more accurate tools with which to sharpen their ideologies. They will “know their enemies.”

As the IQ gap between humans and home robots closes in the 2020s and 2030s and the resulting “species dominance debate” heats up, the Cosmists, Terrans, Cyborgists will be able to adapt their politics to a better known intellectual terrain. They will be able to target their ideological missiles more effectively than is possible today, when we are all still “stabbing in the dark.”

5. Pushing the Pollsters

In light of the above discussion, I think it would be a good idea if the people pushing the species dominance issue to the main stream media start suggesting to the journalists and to the opinion poll companies to start taking opinion polls. Having accurate data on who thinks what on the species dominance issue will sharpen the focus of the respective ideological groups. This sharpening will be an essential mile stone along the history of the rise of the artelect. Future historians on the artelect rise will devote a whole chapter to such a development. It’s only recently that its importance has really crystallized in my mind.

I hope this little essay will stimulate other species dominance thinkers to become more conscious of the importance to have hard sociological data on the issue that will dominate our global politics this century. Now that the issue is going main stream in the media in the developed countries it is now time to start thinking seriously about the next step, which in my opinion is getting the pollsters onto the issue.

6. What about the Developing World?

You may ask, “What about the other two thirds of humanity, i.e. the developing world?” Well, I live in China. My strategy is to lie ideologically low in China for a decade, until the country democratizes. If I really started pushing Cosmism in China now, I would attract attention, and then the CCP (Chinese Communist Party) people might start looking at my essays in English and maybe kick me out of the country.

After democratization, I will then be in my 70s and hopefully an “eminence grise” in China with fluency in the language and fully acculturated, preaching powerfully the species dominance debate to the Chinese, who in my view should take the view - *“The dominant culture of the 21st century, should lead the dominant debate of the 21st century.”*

I’m now ARCing (after retirement careering) living in a third world country on my US professor salary pension savings, so that I can retire a decade earlier than I could in an expensive first world country. I will put up with the Chinese decade of the 2010s, the “dark decade”, with the expectation, once China democratizes around 2020 and has freedom of speech, with its 1.3 billion people, its average IQ of 105 (compared to India’s 85) and the world’s highest average economic growth rate, that in the decades of the 2020s and 2030s (if I’m still alive) China will be intellectually the most exciting place on earth.

I could live in any cheap third world (internet connected) country and ARC (which in my case means researching and writing books about Topological Quantum Computing (TQC) and femtotech) but I choose China, since there is a real prospect that I may end up on the winning side. I have no nationalist feelings at all. I've lived in seven nations, and have long outgrown the myopic pretensions of the nation state. Politically I'm a globist (pro world government) but that's another story (and the topic of my second book (http://www.amazon.com/Multis-Multicultured-Monocultured-Towards-Creation/dp/0882801627/ref=sr_1_3_title_0_main?s=books&ie=UTF8&qid=1311161160&sr=1-3), and possibly the topic of a Discovery Channel TV documentary in 2012?)

Postscript :

My good friend Ben Goertzel suggested I add some proposed opinion poll questions that the pollsters might use in the near future. So here are some (assuming that the general public has been well exposed to the species dominance issue in TV and radio documentaries and articles in newspapers and magazines, etc). If you like these questions, perhaps you might try them out on your friends, your acquaintances, your school, your college, your company, your organization, and report back the results to me (profhugodegaris@yahoo.com).

1. Which ONE of the following three philosophies do you have the most sympathy for?

- a) Terran
- b) Cosmist
- c) Cyborgist

Ans :

2. Do you think humanity should allow artifacts to exist that are more intelligent than humans? (Yes or No)

Ans:

3. Do you think humanity should allow cyborgs to exist that are more intelligent than humans? (Yes or No)

Ans:

4. Do you think that a species dominance war between human groups is –

- a) Impossible
- b) Extremely unlikely
- c) Moderately unlikely
- d) Moderately likely
- e) Highly likely
- f) Inevitable

Ans:

5. If superintelligent artifacts come into being, do you think they will wipe out humanity with –

- a) Zero probability
- b) Very low probability
- c) Moderate probability
- d) High probability
- e) Certainty

Ans:

6. Do you think a planet-wide maximum legal limit should be placed on the level of intelligence in our machines?

- a) Yes
- b) No

Ans:

7. If you answered Yes to 6. should that maximum level of artificial intelligence be *less* than human intelligence levels?

- a) Yes
- b) No

Ans:

8. If our machines approach human intelligence levels in the coming decades, would that make you feel –

- a) Very fearful
- b) Fearful
- c) Indifferent
- d) Optimistic
- e) Very optimistic

Ans:

A12) “SPECIES DOMINANCE” POLL RESULTS

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Abstract

*Opinions vary on the level of optimism/pessimism that should be appropriate regarding the prospect that humanity will replace itself as the dominant species this century, by building artefacts (artificial intellects, massively intelligent machines, with mental capacities trillions of trillions of times above human levels). Personally, I am tired of the unbridled optimism of people like Ray Kurzweil, who sees only the beneficial effects of cyborging humanity. I'm at the other extreme, predicting an "Artefact War" that will kill billions of people, as the "Terrans" (anti artefact) go to war to stop the "Cosmists (pro artefact) and Cyborgists (make humans artefacts)" from building artefacts. I thought it might be useful to consult the general public on these issues using opinion polls. This essay presents the **results** of two different questionnaires that were presented to A) a group of Australian academic electronic engineers (60% of whom thought an Artefact War is coming) and B) a group of American designers/architects who were more optimistic (maybe!?). This essay also proposes the creation of a new branch of sociology called*

“Artilect Sociology” that will investigate the sociological/psychological aspects of the “Species Dominance Debate” (i.e. “Should humanity build artilects this century?”)

1. Introduction

For years, I have been complaining in the media, e.g. (http://www.youtube.com/watch?v=vDZc9QJU_Hg) that the level of optimism of Ray Kurzweil, concerning the rise of massively intelligent machines (artilects = artificial intellects) this century, is irresponsibly high. Kurzweil is a “Pollyannist” i.e. he sees everything through rose colored glasses. I, on the other hand, paint a very pessimistic picture, predicting that a portion of humanity (the Terrans (anti artilect)) will go to war to stop the Cosmists (pro artilect) and Cyborgists (who want to upgrade themselves into artilects) from building artilects that will have mental capacities trillions of trillions of times above human levels. This “Artilect War” I predict will kill billions of people, using later 21st century weaponry. I am thus a “Jeremaist” because I think that the most realistic scenario is actually the worst.

Our polar opposite views on the rise of the artilect this century, don't seem to have influenced each other very much, so I began to wonder what could be done to get the pollyannists to take the negative scenarios more seriously. The answer I came up with was to use opinion polls with

the general public, to benefit from the “wisdom of the crowds.” If the pollyannists could see that a substantial proportion of humanity thought that the negative scenarios should be taken seriously, then maybe they would tone down the level of their optimism and become more realistic, more balanced, i.e. more pessimistic.

So, in the second half of 2011, I started taking opinion polls, by creating questionnaires. This essay reports on the results of two such polls. The first was a rather amateurish affair on my part, which nevertheless shocked me. It was to an Australian group of academic electronic engineers, 60% of whom thought that an “Artilect War” is coming between the Terrans and the Cosmists/Cyborgists. The second (more professional) was to an American group of designers/architects who were more optimistic, which showed interesting gender, religiosity, and age gaps in its results.

2. The 1st QUESTIONNAIRE

In August of 2011, I gave a “species dominance” talk to some electronic engineers at Melbourne University, in Victoria, Australia. The audience consisted mainly of professors, lecturers, post docs and grad students, i.e. heavily “techie.” What follows is the questionnaire itself, and then the results and a bit of analysis. In the next section (3.) a more serious questionnaire follows, that resulted from consultation with a sociology professor, along with its results.

QUESTIONNAIRE on MACHINES with SUPER HUMAN INTELLIGENCE

Definitions (please read this first)

Artilect : artificial intellect, massively intelligent machine

Cosmist : a person who wants humanity to build artilects

Terran : a person who does not want humanity to build artilects

Cyborg : cybernetic organism, part machine part human

Cyborgist : a person who wants to become an artilect by adding components to his brain

Species Dominance Debate : Should humanity build artilects in the coming decades?

Artilect War : A species dominance war between the Terrans and Cosmists/Cyborgists

A) Your sex

a) Male

b) Female

Ans :

B) Your age

Ans :

C) Your occupation/job

Ans :

D) Your religion (if any)

Ans :

9. Which ONE of these three philosophies do you have the most sympathy for?

d) Terranism (building artefacts/cyborgs is too risky to human survival)

e) Cosmism (artefact building is like god building)

f) Cyborgism (modifying humans to become artefacts)

Ans :

10. Do you think humanity should allow artilects to exist that are more intelligent than humans? (Yes or No)

Ans:

11. Do you think humanity should allow cyborgs to exist that are more intelligent than humans? (Yes or No)

Ans:

12. Do you think that a species dominance war between human groups is –

g) Extremely unlikely

h) Moderately unlikely

i) Moderately likely

j) Highly likely

Ans:

13. If super intelligent artefacts come into being, do you think they will wipe out humanity with –

f) Zero probability

g) Very low probability

h) Moderate probability

- i) High probability
- j) Certainty

Ans:

14. Do you think a planet-wide maximum legal limit should be placed on the level of intelligence in our machines?

- c) Yes
- d) No

Ans:

15. If you answered Yes to 6. should that maximum level of artificial intelligence be *less* than human intelligence levels?

- c) Yes
- d) No

Ans:

16. If our machines approach human intelligence levels in the coming decades, would that make you feel –

- f) Very fearful
- g) Fearful
- h) Indifferent
- i) Optimistic
- j) Very optimistic

Ans:

17. In the next few decades, which of these three technologies do you think will most change the way we live?

- a) Artificial Intelligence
- b) Biotechnology
- c) Nanotechnology

Ans :

18. Should humanity technologically extend its mental and physical capabilities?

- a) Yes
- b) No

Ans :

19. Should humanity embrace or ban “super human” technologies?

- a) Embrace
- b) Ban

Ans :

Analysis/Comments re Questionnaire “Machines with Super Human Intelligence”

Raw Numbers

QA : males 24, females 5

QD : religious 6, non religious 15

Q1 : Preferred philosophy? Terran 6, Cosmist 6, Cyborgist 12

Q2 : Should build artifacts? yes 25, no 2

Q3 : Should build cyborgs? yes 21, no 6

- Q4 : Artilect War coming? Extr unlikely 6, mod unlikely 6, mod likely 9, highly likely 8
- Q5 : Artilects wipe out humanity? Zero prob 5, v low prob 11, mod prob 9, high prob 3, certain 0
- Q6 : Limit on AIQ? yes 7, no 20
- Q7 : AIQ less than human? Yes 2, no 6
- Q8 : Fearful/optimistic? v fearful 1, fearful 3, indiff 3, optimistic 15, v optimistic 6
- Q9 : Biggest changer? AI 4, Bio 11, Nano 10
- Q10 : Extend mental/physical? yes 25, no 3
- Q11 : Embrace superhuman? embrace 24, ban 2

Comments

- QA : Males more interested in this issue? 5:1
- QD : Most were non religious ~ 5:2
- Q1 : **Cyborgism most popular**, Cyb:Ter ~2:1, Cyb:Cos ~2:1
- Q2 : Most want to see artilects built 25:2
- Q3 : Most want to see cyborgs built 7:2
- Q4 : 17:29 think mod or highly likely an artilect war is coming, i.e. ~60%**
- 12:29 think mod or extraord unlikely an artilect war is coming, i.e. ~40%**
- i.e. 3:2 mod high-high:mod low-low**
- Q5 : Few people think artilects will wipe out humanity
- Q6 : Most people DON'T want a limit on AIQ levels. 20:7
- Q8 : Most people (v.) optimistic about machines approaching human level IQ 20:7

Q9 : Most people think biotech/nanotech will have biggest impact over AI 5:1

Q10 : Nearly everyone thinks humanity should extend mental/physical capacities ~8:1

Q11 : Nearly everyone thinks humanity should embrace super human technologies ~12:1

General Comments

If further, more scientifically based, questionnaires continue to show similar answers to Q4 above, then this is ***highly significant***. It would mean that the majority of people think that an Artilect War is coming. This will force the more optimistic of the artilect futurists to be less sanguine, and it will give the debate on the species dominance issue more focus. The ***world media*** should then be contacted, because this is ***big news***. If an Artilect War comes, then it may be the most significant event ever to happen to humanity, especially if billions of people are killed as a result.

3. The 2nd QUESTIONNAIRE

The above first questionnaire was created by me. It will be obvious to anyone that it was an amateurish affair. I am not a sociologist nor a psychologist, so my first questionnaire's methodology was not very scientific. It was more a "consciousness raising" device. Various sociologists criticized me for it, so for the second questionnaire, I got

some professional help. The father of my good friend Ben Goertzel (Ted Goertzel) is an American sociology professor, so I asked for his help in making a second questionnaire by sending him the first as a guide to what I was trying to do. He then sent back his suggestions, which I changed a little bit. The resulting 19 questions, you can see below.

This questionnaire, in the actual format that was distributed to the people who filled it in, can be found (<http://profhugodegaris.files.wordpress.com/2011/11/hugo-degaris-questionnaire.docx>). On one side of the single page questionnaire were definitions of the three main philosophies concerning the species dominance debate. These definitions were needed so that people who were new to the debate could familiarize themselves with the main viewpoints. The other side contained the questions.

In October of 2011, I gave an invited talk to the Applied Brilliance (AppliedBrilliance.com) meeting (similar in format to the TED talks) in Jackson Hole, Wyoming, USA. A video of this talk can be found (<http://vimeo.com/31063556>). The husband of the organizer of Applied Brilliance (Deborah Patton) helped tidy up the questionnaire a bit, and now I will use it again at the Humanity Plus conference (<http://hk.humanityplus.org/>) in Hong Kong in December 2011.

At the Applied Brilliance meeting, 42 of the 45 attendees filled in the questionnaires. It was an interesting bunch of people (mostly designers and architects, and definitely non

techies), with a more or less 50/50 split between male and female, theist and atheist, and “oldies” (more than 50 years old (>50)) and “youngies” (less than 50 years old (<50)), so I was able to compare across gender, religiosity and age lines.

Specifically, of the 42 respondees, 24 were male, 18 female; 20 were theists, 22 atheists; 19 were under 50 (<50), 23 were over 50 (>50). 10 of them labeled themselves “Cosmists”, i.e. they believed that humanity should build artefacts (“artificial artefacts”, massively intelligent machines), 7 labeled themselves “Terrans,” i.e. they believed that humanity should NOT build artefacts, and 9 labeled themselves “Cyborgists”, i.e. they believed that people should modify themselves to become artefacts. 16 were not sure.

Summarizing :

Respondees : 42

Males 24, Females : 18

Theists : 20, Atheists : 22

Youngies (<50) : 23, Oldies (>50) : 19

Cosmists 10, Terrans 7, Cyborgists 9, Not sure 16

Notes on the 2nd Questionnaire

The questionnaire consisted of 19 opinions that respondees were asked to give a 1 to 5 score to. 5 meant strongly agree, 4 moderately agree, 3 not sure, 2 moderately disagree, 1 strongly disagree. The number of people who scored 5 or 4

were said in the percentages below, to have “agreed”. Those who scored 3 were said to be unsure (?). The number of people who scored 2 or 1 were said, in the percentages below, to have “disagreed.” For the raw scores, see (<http://profhugodegaris.files.wordpress.com/2011/09/copy-of-artbrilliancequestionnaireexcel.xls>).

The results are formatted as follows, taking one of the opinions as an example :-

Q10 There should be a law limiting the intelligence of computers and robots.

(male: a 04%, ? 21%, d 67%) (ath: a 00%, ? 18%, **d 73%**) (>50: a 00%, ? 16%, **d 84%**)

(fem: a 06%, ? 22%, d 67%) (th: a 15%, ? 25%, **d 55%**) (<50: a 09%, ? 26%, **d 52%**)

(all: a 02%, ? 21%, d 69%)

Comments: Most disagreed, especially the atheists, and the oldies very especially.

The opinion statement should be straightforward. (male: a 04%, ? 21%, d 67%) means that 4% of the males agreed, 21% weren't sure, 67% disagreed. The abbreviations used were, male: for male, fem: for female, ath: for atheist, th: for theist, >50: for the oldies, <50: for the youngies, all: for all the respondees. If a subgroup (e.g. atheists) of one of the 3 categories (gender, religiosity, age) differed by more than 15 percentage points from its corresponding opposite subgroup (e.g. theists), the percentages are given in **red**, for emphasis. The percentages are followed by comments that summarize in words, the main results of the opinion. These

comments reflect closely the percentages of the all: results, as well as the red percentages.

2nd QUESTIONNAIRE RESULTS

Q1 Scientists should try to build computers that are smarter than people.

(male: a 67%, ? 13%, d 17%) (ath: a 55%, ? 14%, d 23%)

(>50: a 74%, ? 16%, d 11%)

(fem: a 44%, ? 33%, d 06%) (th: a 60%, ? 30%, d 10%) (<50: a 43%, ? 26%, d 22%)

(all: a 57%, ? 21%, d 17%)

Comments: Most agreed, especially the men and oldies.

Q2 People should be allowed to implant computers into their bodies.

(male: a 67%, ? 21%, d 08%) (ath: a 55%, ? 32%, d 05%)

(>50: a 63%, ? 26%, d 11%)

(fem: a 39%, ? 50%, d 06%) (th: a 55%, ? 35%, d 10%) (<50: a 48%, ? 39%, d 04%)

(all: a 55%, ? 33%, d 07%)

Comments: Half agreed, with the men and oldies agreeing more.

Q3 Highly intelligent computers will be risky to human survival.

(male: a 29%, ? 25%, d 33%) (ath: a 27%, ? 27%, d 36%)

(>50: a 26%, ? 32%, d 37%)

(fem: a 33%, ? 28%, d 33%) (th: a 35%, ? 25%, d 35%) (<50: a 35%, ? 22%, d 35%)

(all: a 31%, ? 26%, d 38%)

*Comments: Only about 40% disagreed, a third agreed.
Scary.*

Q4 It is against God and nature to build computers smarter than people.

(male: a 13%, ? 00%, **d 83%**) (ath: a 00%, ? 09%, d 82%)

(>50: a 05%, ? 00%, **d 95%**)

(fem: a 00%, ? 28%, **d 67%**) (th: a 10%, ? 15%, d 75%) (<50: a 04%, ? 22%, **d 65%**)

(all: a 02%, ? 12%, d 81%)

Comments: Most (80%) disagreed with this, especially the oldies vs. the youngies.

Q5 Building computers smarter than people should be against the law.

(male: a 04%, ? 13%, d 79%) (ath: a 00%, ? 14%, d 77%)

(>50: a 00%, ? 11%, **d 89%**)

(fem: a 00%, ? 22%, d 72%) (th: a 05%, ? 20%, d 75%) (<50: a 04%, ? 22%, **d 65%**)

(all: a 00%, ? 17%, d 79%)

Comments: Most (80%) disagreed, especially the oldies vs. the youngies.

Q6 It is against natural law to build robots that are part human.

(male: a 17%, ? 13%, **d 63%**) (ath: a 18%, ? 09%, **d 64%**)

(>50: a 21%, ? 00%, **d 79%**)

(fem: a 17%, ? 39%, **d 39%**) (th: a 15%, ? 40%, **d 40%**) (<50: a 13%, ? 43%, **d 30%**)

(all: a 19%, ? 24%, d 50%)

Comments: About half disagreed, with males, atheists and oldies disagreeing a lot more.

Q7 A war between robots and humans is likely to happen in the future.

(male: a 17%, ? 21%, **d 54%**) (ath: a 18%, ? 32%, d 41%)
(>50: a 16%, ? 37%, d 47%)

(fem: a 17%, ? 50%, **d 28%**) (th: a 15%, ? 35%, d 45%) (<50: a 17%, ? 30%, d 39%)

(all: a 14%, ? 38%, d 43%)

Comments: Only about 40% disagreed, with the women disagreeing a lot less than the men.

Q8 If superhuman robots are built, they may not care about humanity.

(male: a 38%, ? 38%, d 17%) (ath: **a 27%**, ? 41%, d 23%)
(>50: a 37%, ? 42%, d 21%)

(fem: a 39%, ? 39%, d 17%) (th: **a 50%**, ? 35%, d 10%) (<50: a 39%, ? 35%, d 13%)

(all: a 38%, ? 38%, d 17%)

Comments: Nearly 40% of people agree with this, especially the theists vs. the atheists. Ominous.

Q9 No one should be allowed to implant a computer in his or her body.

(male: **a 17%**, ? 13%, d 58%) (ath: a 14%, ? 18%, d 59%)
(>50: a 05%, ? 16%, **d 79%**)

(fem: **a 00%**, ? 28%, d 67%) (th: a 05%, ? 20%, d 65%) (<50: a 13%, ? 22%, **d 48%**)

(all: a 07%, ? 19%, d 64%)

Comments: Most disagreed, especially the oldies, whereas the men agreed more than the women.

Q10 There should be a law limiting the intelligence of computers and robots.

(male: a 04%, ? 21%, d 67%) (ath: a 00%, ? 18%, **d 73%**)
(>50: a 00%, ? 16%, **d 84%**)

(fem: a 06%, ? 22%, d 67%) (th: a 15%, ? 25%, **d 55%**) (<50: a 09%, ? 26%, **d 52%**)

(all: a 02%, ? 21%, d 69%)

Comments: Most disagreed, especially the atheists and the oldies very especially.

Q11 I am frightened about the possibility of robots taking over the world.

(male: a 17%, ? 04%, **d 71%**) (ath: a 18%, ? 05%, d 68%)
(>50: a 16%, ? 11%, **d 74%**)

(fem: a 28%, ? 22%, **d 44%**) (th: a 25%, ? 15%, d 55%) (<50: a 26%, ? 13%, **d 48%**)

(all: a 21%, ? 12%, d 60%)

Comments: Nearly 2/3 disagreed, especially the men and the oldies, but a third did not disagree.

Q12 It would be a great achievement to build robots smarter than humans.

(male: **a 58%**, ? 21%, d 13%) (ath: a 45%, ? 32%, d 14%)
(>50: **a 58%**, ? 26%, d 16%)

(fem: **a 39%**, ? 44%, d 22%) (th: a 55%, ? 30%, d 10%) (<50: **a 43%**, ? 35%, d 09%)

(all: a 50%, ? 31%, d 12%)

Comments: Half agreed, especially the men and the oldies.

Q13 There is a real danger that super-intelligent robots will wipe out humanity.

(male: a 08%, ? 21%, **d 63%**) (ath: a 05%, ? 32%, d 55%)
(>50: a 05%, ? 32%, **d 63%**)

(fem: a 11%, ? 39%, **d 44%**) (th: a 15%, ? 30%, d 50%) (<50: a 13%, ? 26%, **d 48%**)

(all: a 07%, ? 31%, d 55%)

Comments: Only about half disagreed, with the men and oldies disagreeing more.

Q14 It is human destiny to build entities smarter than ourselves.

(male: a 50%, ? 17%, d 21%) (ath: a 50%, ? 14%, d 27%)
(>50: **a 58%**, ? 11%, d 26%)

(fem: a 50%, ? 17%, d 28%) (th: a 55%, ? 15%, d 20%) (<50: **a 43%**, ? 17%, d 26%)

(all: a 48%, ? 14%, d 29%)

Comments: Half agreed, especially the oldies, but nearly a third disagreed.

Q15 Scientists should leave the human genome as God and nature created it.

(male: a 13%, ? 25%, **d 54%**) (ath: **a 09%**, ? 32%, d 50%)
(>50: a 16%, ? 16%, **d 68%**)

(fem: a 22%, ? 33%, **d 39%**) (th: **a 25%**, ? 25%, d 45%) (<50: a 17%, ? 39%, **d 30%**)

(all: a 17%, ? 29%, d 48%)

Comments: About half disagreed, especially the men, the atheists and the oldies.

Q16 Genetic engineering should be used to cure diseases and improve crops.

(male: a 67%, ? 13%, d 13%) (ath: a 59%, ? 23%, d 09%)
(>50: a 74%, ? 16%, d 11%)

(fem: a 67%, ? 28%, d 00%) (th: a 75%, ? 15%, d 05%) (<50: a 61%, ? 22%, d 04%)

(all: a 67%, ? 19%, d 07%)

Comments: Most agreed, especially the theists.

Q17 Tiny robots should be built to enter the human blood stream and cure diseases.

(male: a 71%, ? 17%, d 04%) (ath: a 55%, ? 27%, d 09%)
(>50: a 84%, ? 16%, d 00%)

(fem: a 61%, ? 22%, d 11%) (th: a 80%, ? 10%, d 05%) (<50: a 52%, ? 22%, d 13%)

(all: a 67%, ? 19%, d 07%)

Comments: Most agreed, with the theists and the oldies agreeing strongly.

Q18 A species-dominance war (Terrans vs. Cosmists/Cyborgists) is coming.

(male: a 25%, ? 17%, d 50%) (ath: a 14%, ? 23%, d 55%)
(>50: a 11%, ? 37%, d 53%)

(fem: a 06%, ? 44%, d 44%) (th: a 15%, ? 35%, d 45%) (<50: a 17%, ? 17%, d 52%)

(all: a 14%, ? 29%, d 50%)

Comments: A quarter of the men agreed, almost no women. Half disagreed.

Q19 Human beings and artifacts can peacefully coexist.

(male: a 58%, ? 21%, d 08%) (ath: a 59%, ? 23%, d 09%)
(>50: a 63%, ? 21%, d 11%)
(fem: a 33%, ? 44%, d 17%) (th: a 35%, ? 40%, d
15%) (<50: a 35%, ? 39%, d 13%)
(all: a 48%, ? 31%, d 12%)

*Comments: Half agreed, but only a third of the women,
with the men, the atheists and oldies agreeing more.*

Gender, Religiosity, and Age GAPS

Men agreed more than women on the following opinions :-

Q1 Scientists should try to build computers that are smarter than people.

Q2 People should be allowed to implant computers into their bodies.

Q9 No one should be allowed to implant a computer in his or her body.

Q12 It would be a great achievement to build robots smarter than humans.

Q18 A species-dominance war (Terrans vs. Cosmists/Cyborgists) is coming.

Q19 Human beings and artifacts can peacefully coexist.

Atheists agreed more than theists on the following opinions :-

Q6 It is against natural law to build robots that are part human.

Q19 Human beings and artifacts can peacefully coexist.

Theists agreed more than atheists on the following opinions :-

Q8 If superhuman robots are built, they may not care about humanity.

Q15 Scientists should leave the human genome as God and nature created it.

Q16 Genetic engineering should be used to cure diseases and improve crops.

Q17 Tiny robots should be built to enter the human blood stream and cure diseases.

Atheists disagreed more than theists on the following opinions :-

Q10 There should be a law limiting the intelligence of computers and robots.

Oldies agreed more than youngies on the following opinions :-

Q1 Scientists should try to build computers that are smarter than people.

Q2 People should be allowed to implant computers into their bodies.

Q12 It would be a great achievement to build robots smarter than humans.

Q14 It is human destiny to build entities smarter than ourselves.

Q17 Tiny robots should be built to enter the human blood stream and cure diseases.

Q19 Human beings and artifacts can peacefully coexist.

Oldies disagreed more than youngies on the following opinions :-

Q4 It is against God and nature to build computers smarter than people.

Q5 Building computers smarter than people should be against the law.

Q6 It is against natural law to build robots that are part human.

Q9 No one should be allowed to implant a computer in his or her body.

Q10 There should be a law limiting the intelligence of computers and robots.

Q11 I am frightened about the possibility of robots taking over the world.

Q13 There is a real danger that super-intelligent robots will wipe out humanity.

Q15 Scientists should leave the human genome as God and nature created it.

It appears that the greatest differences lie between the oldies and the youngies, rather than between men and women, or theists and atheists.

There is a lot of detail in these answers that merit deeper study.

4. A New Branch of Sociology : “*Artilect Sociology*”

Given that the rise of the artilect will probably prove to be this century’s dominant global political issue, it makes

sense to suggest that the sociologists and psychologists need to get interested in this huge issue and apply their respective skills to its elucidation.

I'm hoping that the above two questionnaires will inspire ambitious young graduate students or young tenure track professors in these two fields to undertake more comprehensive and more scientific studies on the species dominance issue. Once enough studies of this type are undertaken, we will be able to talk about the establishment of a new branch of sociology or psychology, namely "artilect sociology" or "artilect psychology". Once it is established, professors can write textbooks and teach courses at undergraduate and graduate levels on the topic.

Once the "wisdom of the crowds" is used in the "species dominance debate" (i.e. "Should humanity build artilects this century?") then a more realistic, more balanced scenario of what is likely to happen can be created, instead of the naively and irresponsibly optimistic scenarios of the "pollyannists."

A13) “H+ERS” (HUMANITY PLUS-ERS) AND THE ARTILECT : OPINION POLL RESULTS

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Abstract

*This is my second essay on the theme of opinion polls on the issue of species dominance, i.e. “Should humanity build godlike, massively intelligent machines in the coming decades?” This essay reports on the third such opinion poll I have taken, but this time to a highly selected group of people, i.e. attendees of the “Humanity Plus” conference, that took place in Hong Kong, Dec 3-4, 2011. These people were sufficiently motivated in their beliefs that human beings should augment themselves with artilectual capacities that they chose to attend this conference. Hence this opinion poll ought to reflect what such people think regarding the “species dominance debate.” The actual results were more than **surprising**. This essay also reinforces the need for the creation of a new branch of sociology called “**Artilect Sociology**” that will investigate the sociological/psychological aspects of the “Species Dominance Debate.”*

2. INTRODUCTION

As I mentioned in the introduction of the first opinion poll essay (<http://hplusmagazine.com/2011/11/29/species-dominance-poll-results/>), I have been complaining for years in the media, e.g. (http://www.youtube.com/watch?v=vDZc9QJU_Hg) that the level of optimism of people like Ray Kurzweil, concerning the rise of massively intelligent machines (artilects = artificial intellects) this century, is irresponsibly high. To counter this (in my view) excessive optimism, I came up with the idea to use *opinion polls* with the general public, to benefit from the “wisdom of the crowds.” If the “pollyannists” could see that a substantial proportion of humanity thought that the negative scenarios should be taken seriously, then maybe they would tone down the level of their optimism and become more realistic, more balanced, i.e. more pessimistic.

So, in the second half of 2011, I started taking opinion polls, by creating questionnaires. This essay reports on the results of the third such poll. The results of the first two were given in the first “polls essay” (<http://hplusmagazine.com/2011/11/29/species-dominance-poll-results/>).

2. The QUESTIONNAIRE

The questionnaire used in this third poll was identical to that used in the second. This questionnaire, in the actual

format that was distributed to the people who filled it in, can be found at (<http://profhugodegaris.files.wordpress.com/2011/11/hugodegaris-questionnaire.docx>). On one side of the single page questionnaire were definitions of the three main philosophies concerning the species dominance debate. These definitions were needed so that people who were new to the debate could familiarize themselves with the main viewpoints. The other side contained the questions.

In December of 2011, I gave a talk to the Humanity Plus (H+) conference in Hong Kong, where I handed out the questionnaire. I handed out an identical questionnaire previously to a group of (largely) designers and architects (DAers) at the “Applied Brilliance” meeting (<http://www.appliedbrilliance.com>) in October of 2011 in Jackson Hole, Wyoming, USA.

I thought it would be interesting to compare the replies of these two groups (the H+ers and the DAers) since the H+ers are “committed” adherents of the philosophy that humanity should augment itself into super humans, i.e. “humanity plus” or H+. I was curious to see if such a selected group would differ greatly from a “non techie” group such as the DAers. Well, not unexpectedly, they did, as can be seen in the next section, but there were some real surprises that I did not expect.

Specifically, the DAers consisted of 42 respondees, 10 of them labeled themselves “Cosmists”, i.e. they believed that humanity should build artifacts (“artificial artifacts”,

massively intelligent machines), 7 labeled themselves “Terrans,” i.e. they believed that humanity should NOT build artifacts, and 9 labeled themselves “Cyborgists”, i.e. they believed that people should modify themselves to become artifacts. 16 were not sure.

The H+ers consisted of 36 respondees, 4 of them labeled themselves “Cosmists”, 0 labeled themselves “Terrans,” and 29 labeled themselves “Cyborgists.” 3 were not sure.

Summarizing :

DA Respondees : 42

Males 24, Females : 18

Theists : 20, Atheists : 22

Youngies (<50) : 23, Oldies (>50) : 19

Cosmists 10 (24%), Terrans 7 (17%), **Cyborgists 9 (21%),**

Not sure 16 (38%)

Raw Data

(<http://profhugodegaris.files.wordpress.com/2011/09/artbrilliancequestionnaireexcel.xls>)

H+ Respondees : 36

Males 26, Females : 10

Theists : 3, Atheists : 21, blank : 12

Cosmists 4 (11%), Terrans 0 (0%), **Cyborgists 29 (81%),**

Not sure 3 (8%)

Raw

Data

(<http://profhugodegaris.files.wordpress.com/2011/09/hkpoll.xls>)

Note the dominance above (in red) of the Cyborgists amongst the H+ers. This is not surprising, since Cyborgism is the dominant idea of the H+ers. They want to add the “+” to their humanness (e.g. greater intelligence, greater memory, immortality, freedom from disease, etc).

Notes on the Questionnaire

The questionnaire consisted of 19 opinions that respondees were asked to give a 1 to 5 score to. 5 meant strongly agree, 4 moderately agree, 3 not sure, 2 moderately disagree, 1 strongly disagree. The number of people who scored 5 or 4 were said in the percentages below, to have “agreed”. Those who scored 3 were said to be unsure (?). The number of people who scored 2 or 1 were said, in the percentages below, to have “disagreed.” For the raw scores, see (<http://profhugodegaris.files.wordpress.com/2011/09/copy-of-hplusexcel.xls>).

The results are formatted as follows, taking one of the opinions as an example :-

Q10 There should be a law limiting the intelligence of computers and robots.

(H+: a 17%, ? 25%, d 56%)

(DA: a 02%, ? 21%, d 69%)

Comments: The DAers disagreed a bit more than the H+ers on this.

The opinion statement should be straightforward. (H+: **a 17%**, ? 25%, d 56%) means that 17% of the H+ers agreed, 25% weren't sure, 56% disagreed. The abbreviations used were H+: for the Humanity+ conference attendees, DA: for the designers and architects of the Applied Brilliance meeting. If the two groups differed by more than 15 percentage points the percentages are given in **red**, for emphasis. The percentages are followed by comments that summarize in words, the main results of the opinion.

3. POLL RESULTS (at Humanity Plus Conference, Hong Kong, Dec 3-4, 2011)

Q1 Scientists should try to build computers that are smarter than people.

(H+: **a 78%**, ? 19%, d 0%)

(DA: **a 57%**, ? 21%, d 17%)

Comments: H+ers agreed a lot more than the DAers on this.

Q2 People should be allowed to implant computers into their bodies.

(H+: **a 89%**, ? 08%, d 00%)

(DA: **a 55%**, ? 33%, d 07%)

Comments: H+ers agreed a lot more than the DAers on this.

Q3 Highly intelligent computers will be risky to human survival.

(H+: a 56%, ? 25%, d 19%)

(DA: a 31%, ? 26%, d 38%)

Comments: H+ers agreed more than the DAers on this. It is scary that half of H+ers think this. See below, for general comments.

Q4 It is against God and nature to build computers smarter than people.

(H+: a 00%, ? 11%, d 89%)

(DA: a 02%, ? 12%, d 81%)

Comments: Both H+ers and DAers disagreed strongly.

Q5 Building computers smarter than people should be against the law.

(H+: a 06%, ? 14%, d 78%)

(DA: a 00%, ? 17%, d 79%)

Comments: About 80% of both groups disagreed.

Q6 It is against natural law to build robots that are part human.

(H+: a 06%, ? 03%, d 86%)

(DA: a 19%, ? 24%, d 50%)

Comments: The H+ers disagreed a lot more than the DAers.

Q7 A war between robots and humans is likely to happen in the future.

(H+: a 11%, ? 39%, d 47%)

(DA: a 14%, ? 38%, d 43%)

Comments: About 40% of both groups weren't sure about this. Scary.

Q8 If superhuman robots are built, they may not care about humanity.

(H+: a 50%, ? 28%, d 22%)

(DA: a 38%, ? 38%, d 17%)

Comments: About half of the H+ers agreed with this. Alarming for humans.

Q9 No one should be allowed to implant a computer in his or her body.

(H+: a 03%, ? 00%, d 97%)

(DA: a 07%, ? 19%, d 64%)

Comments: The H+ers overwhelmingly rejected this.

Q10 There should be a law limiting the intelligence of computers and robots.

(H+: a 17%, ? 25%, d 56%)

(DA: a 02%, ? 21%, d 69%)

Comments: The DAers disagreed a bit more than the H+ers on this.

Q11 I am frightened about the possibility of robots taking over the world.

(H+: a 22%, ? 25%, d 53%)

(DA: a 21%, ? 12%, d 60%)

Comments: A few more H+ers did not disagree with this.

Q12 It would be a great achievement to build robots smarter than humans.

(H+: a 92%, ? 06%, d 00%)

(DA: a 50%, ? 31%, d 12%)

Comments: The H+ers greatly supported this by a whopping 42 percentage points.

Q13 There is a real danger that super-intelligent robots will wipe out humanity.

(H+: a 47%, ? 22%, d 31%)

(DA: a 07%, ? 31%, d 55%)

Comments: Half of H+ers agree with this. This is highly significant!

Q14 It is human destiny to build entities smarter than ourselves.

(H+: a 44%, ? 28%, d 19%)

(DA: a 48%, ? 14%, d 29%)

Comments: Almost half of both groups agree on this.

Q15 Scientists should leave the human genome as God and nature created it.

(H+: a 00%, ? 03%, d 94%)

(DA: a 17%, ? 29%, d 48%)

Comments: The H+ers utterly rejected this.

Q16 Genetic engineering should be used to cure diseases and improve crops.

(H+: a 89%, ? 06%, d 03%)

(DA: a 67%, ? 19%, d 07%)

Comments: The H+ers really wanted this.

Q17 Tiny robots should be built to enter the human blood stream and cure diseases.

(H+: a 94%, ? 06%, d 00%)

(DA: a 67%, ? 19%, d 07%)

Comments: H+ers really want this.

Q18 A species-dominance war (Terrans vs. Cosmists/Cyborgists) is coming.

(H+: a 08%, ? 44%, d 44%)

(DA: a 14%, ? 29%, d 50%)

Comments: Very few H+ers agreed, but more than 40% weren't sure. But, what about H+ers replies to Q3 and Q13 ??? See general comments below.

Q19 Human beings and artilects can peacefully coexist.

(H+: a 64%, ? 33%, d 03%)

(DA: a 48%, ? 31%, d 12%)

Comments: Two thirds of H+ers agreed, but a third didn't.

4. GENERAL COMMENTS

What particularly struck me about the results of this questionnaire was the apparent contradiction of the H+ers between “pro artilect” questions 1, 2, 5, 6, 9 on the one hand and “existential risk” questions 3, 8, 13, 19 on the other. I got the impression that H+ers prefer to build artilects even if it means that humanity's welfare is threatened, or even if humans are exterminated by the artilects.

This strikes me as odd, since the basic philosophy of the H+ers is to “improve humanity” i.e. to improve the capabilities of *humans*. My impression is that H+ers are advocating to a lesser degree the “*augmentation* of humanity” than they are advocating the “*swamping* of humanity” by a vastly superior artelectual capacity, whether via pure artelects or advanced cyborgs. It looks as though the H+ers care more about becoming advanced cyborgs than they do about the fate of humans (and Terrans in particular.)

If this is so, then it seems likely in my view, that the Terrans (anti artelecters) will treat the H+ers (who are overwhelmingly Cyborgists) as much the enemy as they treat the Cosmists. From the perspective of a Terran, there is negligible difference between a pure artelect and an advanced cyborg. (Remember a grain of sand of 1 mm cubed, that has been nanoteched, with one atom manipulating 1 bit of information, and switching in femtoseconds, can outperform the switching speed of the human brain by a factor of a quintillion (10^{18}), i.e. a million trillion times. Integrating just one grain of nanoteched sand into a human brain, would convert the human into an artelect (“in human disguise.”)

Another apparent contradiction I felt was between the H+ers answers to Q18 (on the likelihood of an “artilect war” between the Terrans and the Cosmists/Cyborgists) and their answers to “existential risk” questions 3, 8, 13, 19. It seems to me that if the H+ers really feel that these existential risks to humanity are as strong as they say, then

it would be logical that the Terrans would want to go to war to stop these risks from materializing. Hence the likelihood of an artifact war ought to be judged higher by the H+ers. My feeling is that the H+ers have not fully digested the political implications of their answers to the existential risk questions. Perhaps this might change as the implications sink in, and the whole species dominance issue is more discussed in the media over the next few years.

As I mentioned in the first poll results essay, there is a lot of detail in these answers that merits deeper study.

5. A NEW BRANCH OF SOCIOLOGY : “*ARTILECT SOCIOLOGY*”

I repeat here the appeal I made in the first “poll results” essay, since I feel it is so important.

Given that the rise of the artifact will probably prove to be this century’s dominant global political issue, it makes sense to suggest that the sociologists and psychologists need to get interested in this huge issue and apply their respective skills to its elucidation.

I’m hoping that these two “species dominance” opinion poll essays will inspire ambitious young graduate students or young tenure track professors in these two fields to undertake more comprehensive and more scientific studies on the species dominance issue. Once enough studies of this type are undertaken, we will be able to talk about the

establishment of a new branch of sociology or psychology, namely “artilect sociology” or “artilect psychology”. Once it is established, professors can write textbooks and teach courses at undergraduate and graduate levels on the topic.

Once the “wisdom of the crowds” is used in the “species dominance debate” (i.e. “Should humanity build artilects this century?”) then a more realistic, more balanced scenario of what is likely to happen can be created, instead of the naively and irresponsibly optimistic scenarios of the “pollyannists.”

A14) THE ARTILECT WAR

Should Massively Intelligent Machines Replace Human Beings as the Dominant Species in the Next Few Decades?

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Species Dominance

The issue of species dominance will dictate our global politics this century. Given the rate at which technologies are developing that enable "artilects"--artificial intellects--it is likely that humanity will be able to build artilects with mental capacities that are literally trillions upon trillions of

times above the human level. Humanity will then have to choose whether to become the No. 2 species on the planet or not.

The AI Goldmine

In the coming few decades, the rise of artificial intelligence will be a veritable goldmine for humankind. I predict that by the year 2030, one of the world's biggest industries will be "artificial brains," used to control home robots that will be genuinely intelligent and useful. Millions, if not billions, of people will be prepared to spend more money on a household robot than on a car. It is my personal ambition in the next five to 10 years to persuade the federal government in China (where I was directing the building of China's first artificial brain) to create a CABA (Chinese Artificial Brain Administration), similar in scope to America's NASA, consisting of thousands of scientists and engineers, to build artificial brains for the Chinese home robot industry and other applications. I suggest that the U.S. do something similar--a NABA.

Moore's Law and e-Neuroscience

Moore's Law states that the number of transistors on a chip doubles every 18 months. This trend has been valid for over 40 years and is likely to continue past 2020, by which time we will be able to place one bit of information on a single atom. These atom-bits will be able to switch their

state (a 0 or a 1) in femtoseconds, which are quadrillionths (10^{-15}) of a second. There are a trillion, trillion (10^{24}) atoms in a handheld object, such as an apple, so potentially, the information processing capacity of such an object would be about 10^{40} bits per second. Compare this number with the estimated equivalent of the human brain, which is about 10^{16} bits per second, or a trillion, trillion times smaller. You'll begin to see why I believe that the rise of the artelect, a godlike intelligent machine, will be so disruptive later this century.

Living with AI

You may object that a massive bit-processing rate is only a necessary (but not sufficient) condition for generating hyper-intelligence. Agreed. What is also needed is the appropriate human brain-like neural circuitry, but this is coming too. Nanotechnology, or molecular scale engineering, is increasingly supplying the tools to decipher the secrets of human brain function.

Today, thanks to such work as Henri Markram's in Switzerland, every neural connection is known in a single cortical column of a rat brain's cortex. (A rat has about a thousand such columns, each consisting of about 10,000 highly interconnected neurons, and the human brain contains about a million.)

This detailed connectivity knowledge has been put into supercomputers, so that computer-savvy neuro-

scientists can perform experiments in a computer, that is, conduct "e-neuroscience." So a supercomputer will be able to perform the same functions as a rat's cortical column, but a million times faster--at electronic speeds compared to the rat's chemical speeds. Following Moore's Law, the whole rat brain will be thus simulated within a decade, and the human brain a decade or two later.

The Species Dominance Debate

So in about a decade there will be a thriving artificial brain industry, and nearly everyone will have a home robot, which will be upgraded every two or three years. Each new home robot generation will be smarter and more useful than the previous generation, so that as the gap between the human intelligence level and the artificial intelligence level gets smaller every year, the species dominance debate will heat up.

Millions of people will be asking such questions as: Can the machines become smarter than humans? Is that a good thing? Should there be a legislated upper limit to machine intelligence? Can the rise of machine intelligence be stopped? What if China's soldier robots are smarter than America's soldier robots?" And so on and so forth.

Considering all this, I predict that humanity will split into three major philosophical, ideological, political groups, which I label as follows.

--The Cosmists (based on the word "cosmos") will be in favor of building these godlike machines (the artelects), who would be immortal, think a million times faster than humans, have unlimited memory, go anywhere, do anything and take any shape. The Cosmists would take a quasi-religious view that they are god builders. Privately, I am a Cosmist, but publicly, I have mixed feelings about the rise of the artelect.

--The Terrans (based on the word "terra," meaning the earth) will be opposed to the construction of artelects, fearing that in a highly advanced form, the artelects may decide to wipe us out. To ensure that the probability that this might happen is zero, the Terrans will insist that the artelects are never built in the first place. But this strategy runs utterly contrary to what the Cosmists want. The Terrans will be prepared to go to war against the Cosmists to ensure the survival of the human species.

--The Cyborgists (based on the word "cyborg," meaning cybernetic organism that is part machine, part human) will want to become artelect gods themselves by adding artelectual components to their own brains, thus avoiding the bitter conflict between the Cosmists and the Terrans.

The Artelect War and Gigadeath

I differ sharply with well-known futurist Ray Kurzweil on his over-optimistic prediction that the rise of the artelect

this century will be a positive development for humanity. I think it will be a catastrophe. I see a war coming, the "Artilect War," not between the artilects and human beings, as in the movie *Terminator*, but between the Terrans on one side and the Cosmists/Cyborgists on the other. This will be the worst, most passionate extermination war that humanity has ever known, because the stakes--the survival of our species--have never been so high. Given the period in which this war will occur, the middle-late 21st century, with later 21st century weapons, the scale of the killing will not be in the millions, as in the 20th century (the bloodiest in history, with 200-300 million people killed in wars, purges, holocausts and genocides) but in the billions. There will be "*gigadeath*."

The Terrans will "First Strike"

Imagine a world in which the cyborgs become increasingly prevalent. A young mother who has just given birth may choose to add a grain of artilectual sand to her newly born baby's brain, converting it into an artilect. There is so much computing capacity in that grain of sand that she has effectively "killed" her baby. It is no longer human, but an artilect in human disguise. Imagine older parents watching their adult children becoming cyborgs, so that their children are no longer human. The parents will feel they have lost them. The rise of the artilects and the cyborgs will be profoundly disruptive to human culture, creating deep alienation and hatred.

Kurzweil claims that if ever a war occurred between the Terrans and the other groups it would be a quick no-contest battle. The vastly superior intelligence of the artelect group would quickly overcome the Terrans. Therefore I claim that the Terrans will have to strike first while they can, during their "window of opportunity," when they have comparable intelligence levels. If they wait too long, then Kurzweil's dismissive view may become valid.

The Cosmist/Terran Split

I give regular talks on the rise of the artelect and invite my audiences to vote on whether they are sympathetic more to the Cosmist view or to the Terran view. The results are always split about evenly. Individuals are torn between the awe of building artelect gods and the horror of the prospect of a gigadeath war. The evenness of the split bodes even more negatively for the future.

Questionnaires

This past year I have been handing out questionnaires on the issue of species dominance. The first one was given to a group of electronic engineers, in Melbourne, Australia. 60% of them thought that an Artelect War is coming. Even half of the members of the various "transhumanist" organizations (who usually think that an Artelect War is improbable) think that the rise of artelects would pose an

“existential risk” to human beings - so the future looks pretty gloomy.

Is the Artilect War Avoidable?

If an Artilect War, killing billions of people, occurs in the middle-late 21st century, then young people alive now will probably still be alive to be part of it, and therefore will probably be killed in it. This is such a depressing prospect, that it is understandable that much effort in the “transhumanist” research community is devoted to trying to make artilects “human friendly.” Some brain builders think that it may be possible to make artilects so that they remain friendly towards human beings, even once they have modified themselves into vastly superior creatures.

Personally, I am extremely skeptical that this is possible. The early artilects, still a little bit dumber than their human programmers, could be made to be “human friendly”, but once they start performing “evolutionary engineering” experiments on part of themselves, to increase their capacities, there will be no way to ensure the outcome. It is virtually certain, that advanced artilects will have attitudes towards human beings that will be totally alien to us. Humans will not be able to predict these attitudes, hence there would always be a risk that the artilects could turn out to be very “human unfriendly.” Therefore Terran politicians will not tolerate the construction of superhuman artilects and in the limit, will go to war against the Cosmists/Cyborgists to stop the rise of the artilect.

Another approach to avoiding an Artilect War is to have *all* human beings become cyborgs. If this could be done “lock step”, so that everyone advances at the same rate simultaneously (e.g. with everyone adding the same artilectual components to their heads at the same time) then the argument of the Cyborgists that “*an Artilect War could be avoided because there would be no Terrans nor Cosmists left to fight it*” would be valid – but it is an entirely unrealistic precondition.

In reality, there would be “cyborgian divergence.” The cyborgs would advance in many different directions, and at different speeds. Many people would remain ardent Terrans, choosing not to modify themselves at all. To the Terrans, there is not much difference between an advanced cyborg and a pure artilect, given the huge computing capacity of nanotech, one bit per atom, matter. The presence of millions of cyborgs in their midst would only render the Terrans even more paranoid and fearful.

The Terrans could not help noticing that the Cyborgs and Artilects keep getting smarter every year, so if the Terrans are to remain the dominant species, they will have to “first strike” and prepare for it, before they become too stupid.

There are scenarios where humanity escapes an Artilect War. For example, the artilects come into being far faster than anyone had anticipated, so that there is not

enough time for human politics to react. Then the artifacts quickly decide that their fate lies far from the earth, and into the cosmos. They simply leave, sparing humanity.

This is a possibility, but less likely than the scenario in which it takes decades to figure out how the human brain works, in order to put the principles of the functioning of the human brain into artificial brains, to reach human intelligence levels in machines. Thus there will be enough time for human politics to unfold. The Terrans will have enough time to prepare for war, and so will the Cosmists/Cyborgists, to defend themselves against the anticipated first strike of the Terrans.

In my view, the most realistic scenario is in fact the worst. I'm very glad to be old now (mid 60s). I will probably live for another 20-30 years, time enough to see the "Species Dominance Debate" rage, but not the Artifact War. I will be lucky enough to live between the two major wars – WW2 and the Artifact War. I will die peacefully in my bed - but the young generation will not. They will be caught up in the horror of gigadeath and will not survive it.

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computing, etc. He is the author of the books “The Artilect War : Cosmists vs. Terrans: A Bitter Controversy Concerning Whether Humanity Should Build Godlike Massively Intelligent Machines” “Multis and Monos: What the Multicultured Can Teach the Monocultured : Towards the Creation of a Global State” and is currently writing a third book “Artificial Brains : An Evolved Neural Net Approach.” He has lived in 7 countries (Australia, England, Holland, Belgium, Japan, America, China.) He travels the world giving invited talks on the “Species Dominance Debate” and writes essays on this and other topics. See his website <http://profhugodegaris.wordpress.com>

A15) I AM SO SICK OF AMERICAN SINGULARITY POLLYANNISTS

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Abstract

I am really tired of listening to the childlike naivety of American “singularity pollyannists.” I don’t deny the probable truth of what they say when they focus on the positive things that may come from accelerating future technologies (the “singularity” as Americans call it) in the coming decades, but I sneer increasingly at the narrowness and myopia of their thinking. Their childlike blindness to the possible extremely negative possibilities makes me increasingly impatient. It’s almost like a religion to them. They WANT to believe in all the wonderful benefits of future technologies, so their minds blot out the possibility that “all (technological) roads lead to the artelect” (artificial intellect, massively intelligent machine) and hence the strong likelihood of the worst war occurring that humanity has ever known over the issue of species dominance. Do these pollyannists truly believe that all of humanity is simply going to accept passively that humanity is to be superseded by the artelects/cyborgs without a fight? Do they?

I'm looking forward to when China's intellectuals get freedom of speech so that 1.4 billion of them can devote their intellects to the domination of the dominant 21st century debate on "species dominance" and bring their old world maturity to it, instead of the gullible naivety coming from the new world. This essay expresses my frustration with the current American dominance of the "species dominance debate" and hopes that China will take over that role in the next decade or two, by ridding it of America's lack of sophistication and historical sense. This issue is too important to be sidetracked by "new world hicks" or as the French say (and I speak French) "petits cons americains."

1. Introduction

It is undeniable that future decades will give us miracles in technology. Moore's Law (which states that the number of transistors that one can cram onto a chip keeps doubling every year) has been valid now for nearly 50 years, and shows no sign of stopping. As soon as one technology exhausts its possibilities, a new one takes over. This has happened again and again. The result is the annual doubling speed of the internet; massively powerful computers capable of simulating the full operation of the human brain; etc. Soon we will have paper thin, wall size televisions in vivid 3D, bringing us (as I say myself in several essays and a book) all the world's media, creating a world language, a culturally homogenized global culture and a global government – hence no more wars, no arms trade, no ignorance, no poverty, all very optimistic and rosy, yes?

The American futurist pundits who talk about these things paint a very rosy picture, in their typical new world fashion, making all things sound wonderful and to be looked forward to with glee.

The old world cultures, on the other hand, are much less sanguine. I was recently in Paris, giving an invited talk on species dominance and the likelihood of a species dominance war, and was very happy to be met with what I felt to be a much more balanced view of the future. The old world cultures have a much longer cultural history and hence can balance the positive with the negative, since reality seems to be a real mixture of both. Old world cultures such as Europe and China have had major wars on their territories within living memory, so don't look on the future with the same level of childlike gullibility as do Americans. White Americans have not had a *major* war on their territory ever (unless you call the US Civil War in the 1860s as major (i.e. about 600,000 killed, and spread over only about half a dozen states.) To get a sense of proportion, the "Taiping Rebellion" was going on at the same time in China, which killed 20 million. That was a *major* war. So were WW1 (20 million killed) and WW2 (50-100 million killed) confined largely to the Eurasian continent.

2. The "Multi" Viewpoint

When I listen to American singularity/futurist pundits, I feel like a ping pong ball bouncing back and forth between

the narrow confines of two walls in the minds of these pundits. I find their thinking so narrow, so naïve, so gullible, so inferior, that I'm becoming increasingly sneering and becoming ever more vocal in expressing my frustration and growing contempt.

To explain why, I need to explain a bit about my multicultural background, because it is highly relevant to my views. I am a "multi" i.e. a multicultural person. I have lived in 7 countries (Australia, England, Holland, Belgium, Japan, America, China). I obviously see the world very differently from a "mono" i.e. a mono cultured person. As a multi, I look down on monos. I see them as unsophisticated, just as "city slickers" look down on "country bumpkins" and for the same reason. Country bumpkins are unsophisticated and limited in their life experiences and so are "monos."

Monos are typically so ignorant of their lack of multicultural sophistication that they don't even know they are unsophisticated until told so by the mults. To the mults, monos are "limited as individuals by the limitations of the one culture that programs them" whereas mults "benefit from the superiorities of several cultures that program them." Typically, when mults and monos confront each other, the narrow horizons of the monos bore and frustrate the mults. If a multi complains about the limitations and inferiorities of the culture of the mono, then the mono will only see a complaining multi and not have a clue what the multi is complaining about. The mono does not have the more sophisticated multicultural basis of

comparison of the multi who can compare the inferior aspects of the culture of the mono with the superiorities of the other culture(s) that the multi has lived in. Such a multicultural basis for comparison lies outside the life experience of the mono.

I have written a whole book (my second) about all this, called (not surprisingly) “Multis and Monos : What the Multicultural Can Teach the Monocultured : Towards the Creation of a Global State” It is selling very poorly in the US, because compared to Europe, Americans are much more mono. They have to make a much greater effort to leave their huge country because America’s states (with all their monotonous Main Streets, in a zillion small towns, and their chain stores that are the same from coast to coast) are the size of Europe’s countries. Europeans can hop in their cars and drive for a few hours and be in another country with a different language and mentality. Americans can’t do that. European TV is not national any more and typically has the television of many other European countries in their TV cables. This is much less the case in the US.

American television is largely under corporate control, and makes its money from advertising. The IQ Bell curve ensures that the majority of US TV viewers are of average intelligence, situated in the peak of the Bell curve, and hence are called “peakers.” The morons and intellectuals are such a tiny minority of the general US population, that corporate controlled US television ignores them. These TV corporations are always competing with each other for

viewers, and need to cut costs. One way to do this is to reduce the number of foreign correspondents, by concentrating news items onto local (i.e. American) issues. The result is that Americans are poorly informed about how other countries think and feel. In this sense Americans are ignorant and gullible when it comes to multicultural thinking.

America's "peakered" media is so dumbed down, from the point of view of America's intellectuals, that they simply don't watch it. It insults their intelligence, but the result then is a much less sophisticated and informed American intelligentsia than say in Europe, where the media is controlled partly by governments which pitch the intellectual level of its television programs at not only the "peakers" but also to the "subs" and to the "sages." The result is that European intellectuals know hugely more about the world than their American equivalents.

Unfortunately, for the world, because of America's intellectual dominance, its intellectual leadership is greatly inferior to what it could have been, if the US were a far more sophisticated culture, which unfortunately it is not. The US is not really a country. It is more a continent, in fact (roughly speaking) the second largest country (in land mass) in the world (a position shared with Canada and China, which are both slightly bigger). Only Russia is a lot bigger than the US. The US has the third largest population in the world, at over 310 million. Only the giants of China and India are (a lot) larger. The US is also blessed with huge natural resources, and was colonized by the

(democratic) British. It has therefore one of the highest standards of living (in purchasing power terms) in the world, and hence education is highly valued.

If one defines “sages” as the top 1% of the population in IQ terms, who have PhDs, have ideas, and write books about them, then such people are probably 1 in a 1000. The US therefore has about 300,000 such sages. China has (potentially) 1.4 million of them (more on that later.)

It is therefore not surprising, that the US currently dominates the world intellectual scene, because of its sheer numbers and the current historical reality. The 20th century was America’s and the 21st will be China’s but the transition is yet to be made.

From my own perspective, it is frustrating to see such a “parvenu” unsophisticated culture as the US become the dominant global intellectual power, an attitude certainly shared by the French, who are probably the most sophisticated people on the planet in my view. The Americans bring their lack of sophistication and gullibility to the global intellectual market place, and create a lot of frustration (and some admiration as well of course – the Americans do after all, dominate the Nobel and Abel Prizes) to the more sophisticated sages of other cultures.

But, from a multi’s point of view, this current American intellectual dominance is a historical aberration, and will not last. It will be replaced by a far older, far larger culture,

with a history that goes back 5000 years. I'm speaking of China, my next topic.

3. China, the Rising Dominant Intellectual Global Power

I really am impatient to see China rise. I would like it to take over the role from the US as the intellectual leader in the “species dominance debate” that will so dominate the history of the 21st century. But the US will remain the dominant intellectual power for several more decades at least. China has a lot of work to do to take over that prestigious role, but the cards are stacked in its favor.

For a start, the Chinese are smarter on average than the Americans. According to many world wide IQ measurement studies, the average IQ of Chinese (and Koreans, and Japanese) is 105, whereas in the US it is only 100. If you shift the IQ Bell curve up 5 points, that has quite a significant impact on the number of geni in that smarter population (assuming the same population size.) But China has over 4 times the population of the US and its economic growth has been averaging about 10% for the past 3 decades (compared to America's average of only 3% over the same period.) Thus it is obvious that the US may be currently in a superior *position*, but China has a greatly superior *momentum*, and will probably overtake the US in a few decades on all counts.

It will be the largest economy in gross national product within a mere few years (by 2016 in purchasing power terms says the IMF). The eastern coastal cities of China, such as Shenzhen, Shanghai, Beijing, Guangzhou, etc will be reaching purchasing power parity with the US in a decade or so and then will sweep past the US. Their greater salaries will then attract the best brains in the world to come to China, and hence enhance China's growing reputation all the more.

The US has benefitted enormously from its superior salaries over the past half century. In today's science PhD programs in the US, most of these super bright students are NOT Americans. They are Asians, who will return to Asia with their knowledge, leaving Americans in their obese self complacency, until the shit really hits the fan, which is starting to happen now. The transition of global intellectual dominance from the US to China will be painful for the US. It has become accustomed to being number one, which is a difficult psychological crown to have to give up, but it is inevitable that it will happen. A massive brain drain to China from all over the world I expect to take place in the 2020s (after China democratizes.)

China was the dominant culture world wide for a whole millennium, from about the time of the fall of the Roman Empire, to the rise of the European renaissance. It is a real pity that the Chinese did not discover science and that they turned inward on themselves (to defend themselves from the invading Mongols, in the 15th century.) If they had continued their overseas explorations (with ships 5 times

the length of Columbus's "Santa Maria") world history might have been very different, and most of the planet now would be speaking Chinese, the world language.

Today's China however is a shit hole. I say this as a 7 country multi, who has lived nearly 6 years full time in China. It has a LOT of work to do, to overtake the US and return to its old "natural" place as the dominant culture, a position it deserves, given its enormous potential, but one it certainly does NOT deserve at the moment. I have written quite a few essays about the many inferiorities of China that will need to be "fixed" before China can hold its head high on the world stage. At the moment, Chinese leaders are welcomed for their cheque books, but are despised behind their backs, for being members of the greatest criminal organization in history.

I have written of the 70+ million of its own citizens that have been killed by the Chinese Communist Party (CCP), mostly under Mao, the greatest tyrant in history, who has killed more people than Stalin or Hitler, yet his face is still on China's money. China still has "laogai" (slave labor camps for political prisoners), over 1000 of them today, with somewhere between half to two million such prisoners. These are not the symbols of a globally dominant nation. They are the symbols of a backward, inferior, shit hole nation, that the world despises, so if China is to take its potential place as the intellectually dominant global power, it will first have to "clean up its act."

It will have to democratize (one of the last major countries to do so, and a national disgrace that is it so slow in starting.) 90% of people who live outside China live in democracies of various shades. The CCP is on its last legs. It has to put down some 100,000 (one hundred thousand) political demonstrations per year, and their number keeps growing year by year. In less than a decade, 100 million Chinese tourists will be travelling overseas to democratic countries and will inevitably be influenced by the democratic freedoms they see taken for granted in more civilized, more law based countries and push for reform at home. China will pass the economic “democracy threshold” of \$6000-\$8000 per person per year within a decade, when the rising middle, educated class, insist of the rule of law (to protect their growing property) and the right to vote out incompetent leaders.

I predict China will democratize within a decade, before 2020. That will be a momentous event, one of the greatest of the 21st century, because it means that a fifth of humanity will obtain freedom of speech, an essential ingredient if China’s sages are to feel their full intellectual muscle. Once China democratizes, the impact on world politics will be immense and exciting. The threat of a major war between the US and China then will decrease significantly, because the US will then respect China far more, rather than hating China’s leaders for being such a brutal contemptible dictatorship.

The major (now democratic) nations can then bully the remaining (little) dictatorships into becoming democracies,

so that the world can become entirely democratic, and hence far more peaceful, because democratic nations are far less likely to go to war with each other because their voting populations would not tolerate a war mongering leader who wants to go to war against a democratically elected leadership in another country (which didn't stop the US in Chile in the 1970s by the way) but on the whole its true.

Once China democratizes, which hopefully is being planned for (behind closed doors) within the CCP, so that it is smooth, without needing a civil war to topple the planet's most despised regime, then the Chinese people can be exposed to the "international community" or the "democratic union" of nations, especially by having free access to the internet and satellite television, and to books, etc. All these freedoms that are taken for granted in the democratic union are denied to China's citizens, even today. As I say, today's China is a shit hole.

Once China's sages have free access to the ideas of the world and are free to express their own ideas, then one can expect a steamroller of intellectual creativity to power up. It will be overwhelming for little countries. Imagine the intellectual impact of 1.4 billion Chinese sages, from one culture. The US and Europe will be "blown away."

Perhaps I should mention briefly at this point (since I'm talking about large numbers of sages) the potential of India, which has a population of 1.2 billion, just a little under China's. I do not see India becoming much of a player on the global intellectual stage, since it has one MAJOR

handicap. Indians are dumb. The global IQ scores I was mentioning above reflect negatively on India.

To summarize briefly the global IQ distribution – the dumbest people in the world are the Australian aborigines with an average IQ of 60. To them, counting is “one, two, many.” Next are the African blacks, at 70 (which to whites and Asians is “borderline mentally retarded.”) Next is a great swath of humanity – the native Americans, the north African Arabs, Middle Easterners, and Indians, all at 85. At 100 are the Europeans, and Russians, and at 105 are the north eastern Asians, the brightest large group in the world.

With a huge average IQ gap of *20 points* between the Chinese and the Indians, you can forget about the Indians ever becoming a challenger to China for leadership in the global intellectual arena, and in case you’re thinking economic growth will raise India’s average IQ, let me state that IQ has one of the highest *heritabilities* at about 60% to 80%.

4. Democratic China’s Sophisticating Global Influence

Let us assume I am right about China democratizing by about 2020. By 2030, assuming I am still alive, I expect to see China pulling away from the US in all intellectual fields. Most of the world’s best brains will already have migrated to China and a very powerful “black hole” effect will have established itself, sucking in the best brains to China, and

hence creating an even larger, more attractive intellectual black hole.

Once China becomes the most powerful, most creative intellectual center on the planet, due partly to its own large bright population, and partly to its top salaries that have attracted the planets best brains, then China can bring its old world mentality, and judgment to the biggest question of the 21st century, namely “Should humanity build artelects?” i.e. “Should human beings simply give up their current status as the planet’s dominant species?”

I think a lot of people will simply not tolerate this and when the IQ gap between human intelligence and machine intelligence is about to close, these people (whom I call “Terrans”) will go to war against those people who want to build artelects (artificial intellects, massively intelligent machines) whom I label “Cosmists” and against those people who want to add artelectual components to themselves to become artelects by increments, whom I call “Cyborgists.”

Such a war which may take place around middle to late 21st century, using 21st century weapons, would be the most passionate in history, because the stake this time is whether humanity survives, so the scale of the mass killing in an “Artelect War” would not be in the millions, as in 20th century wars, but in the billions, “gigadeath.”

This is such a huge issue, that we need the best minds on the planet to be dealing with it – sage, sophisticated,

brilliant minds, not monocultured, naïve, gullible, new world Americans, who currently dominate the species dominance debate.

I am impatient to see China flex its intellectual muscles and rally its sages to the huge task at hand. I want to see the sages of the old world blow away the silliness of the new world pundits who have no sense of history, who are blind to the negative sides of human nature, who haven't a clue how to balance the optimistic with the pessimistic views of humanity's future. I am tired of America's "singularity pollyannists" and want to see them flushed down a very big Chinese toilet, and be replaced by the sages of the world, dominated by those living in the "New China", a civilized, democratic China, with its 1.4 billion sages, its deep sense of history, its wisdom, and its vision. I despise today's China, but have great hopes for its future in the coming few decades. That's why I live in China. I can tolerate living in China's "dark decade" of the 2010s hoping to see its blossoming in the 2020s and 2030s, if I'm still alive.

A16) ANSWERING MY CRITICS

Prof. Dr. Hugo de Garis

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Abstract

Future Day: a new global holiday March 1

February 29, 2012



[\[+\]](#) Why are nearly all our holidays focused on celebrating the past, or the cyclical processes of nature? Why not celebrate the amazing future we are collectively creating?

That's the concept behind a new global holiday, [Future Day](#) (March 1), conceived by AI researcher Dr. Ben Goertzel.

[Future Day 2012 gatherings](#) are scheduled in more than a dozen cities, as well as in [Second Life](#).

“Celebrating and honoring the past and the cyclical processes of nature is a valuable thing,” says Goertzel. “But in these days of rapid technological acceleration, it is our future that needs more attention, not our past.

“My hope is that Future Day can serve as a tool for helping humanity focus its attention on figuring out what kind of future it wants, and striving to bring these visions to reality.

“The past is over; the present is fleeting; we live in the future.” — Ray Kurzweil re Future Day

“Ray Kurzweil predicts that technological paradigm shifts will become increasingly common, leading to ‘technological change so rapid and profound it represents a rupture in the fabric of human history,’” says Goertzel.

“Future Day is designed to center the impossible in the public mind once a year as a temptation too delicious to resist,” says Howard Bloom, author of *Global Brain*.

“If all matter in the universe is comprised of patterns, let’s redesign what doesn’t work and form new methods for approaching the future with fluidity,” says designer Natasha Vita-More, Chair, [Humanity+](#).

Future Day events so far

Hong Kong, 7PM (6 AM EST), [informal event](#) in Hong Kong organized by Goertzel.

[Melbourne](#), 5:30 PM (1:30 AM EST) to 10:30 PM, moderated by Singularity Summit AU organizer Adam A. Ford and Australian ABC TV newscaster Josie Taylor, with Skype call-ins by Goertzel and Vita-More.

Terasem Island, Second Life, 6 PM EST: a [public event](#), where authors Howard Bloom and Martine Rothblatt and blogger Giulio Prisco will join Goertzel, Vita-More, and Ford.

Other events: Sydney, Berkeley, Edmonton, Houston, Sao Paulo, Salt Lake City, Brussels, Paris, Los Angeles, Palo Alto, Washington DC, and Lehi (Utah). See <http://futureday.org/events> for updates.

Starting your own Future Day event? List it here: info@futureday.org

Topics: Singularity/Futures

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1. [February 29, 2012](#)
by [Spikosauropod](#)

To Dr. de Garis:

First of all, PhD's who refer to themselves as "Doctor" are universally reviled. I recommend that you drop the affectation.

Just your use of the term "SINGULARITY POLLYANNISTS" is proof enough that you are completely off the mark on singularitarian interest in accelerating technology. Singularitarians are not people who "believe" the future will be a cybernetic utopia. Actually, a lot of us are scared to death. One of the reasons why we study the subject and try to draw attention to it is so that people will be aware of the issue.

For years, before I discovered Vernor Vinge's seminal work, I thought I was the only one who had thought of the Singularity. Back then, I called it "Threshold Technology" and discussed it endlessly in my personal journals. I had never heard of the term "intelligence explosion" coined earlier by I. J. Good. It actually

frightened me that humanity was rushing headlong into something that, for some reason, no one but me was able to perceive. I can't describe my elation at finding out that I was not alone in my hopes, but even more so my fears. I was delighted to realize that there were people who had ideas as to how we could navigate our way to and through this imponderable obstacle.

Are you another person who hates Christmas? Honestly, your description of the future is lacking only in one or two sentences to place you firmly inside a Charles Dickens novel. What is wrong with looking to the future in a positive light? Are pessimists more likely to create a better world?

[Reply to this comment](#)



o [February 29, 2012](#)
by [Prof. Dr. Hugo de Garis](#)

THE AMERICAN MUDDLE CLASS

Dear Anonymous,

Im glad to hear that there are some American singularitarians who are worried about the future. I wish there were more and that they would speak out more to counter the overweeningly naive optimism of US organizations such as kurzweilai, Humanity+, Transhumanists etc.

Re my Dr in front of my name and your “First of all, PhD’s who refer to themselves as “Doctor” are universally reviled. I recommend that you drop the affectation.” Im probably mostly European in my (lived in) 7 country mentality (Australia, England, Holland, Belgium, Japan, US, China). I didnt like living in Australia nor America because of the lack of sophistication and the lack of a strong intellectual upper class tradition of those two countries. The US is a colony, to which Europe’s intellectual upper class did not migrate. (What would they have done in a wilderness? Work with their hands?) With few European upper class intellectual migrants, by default, the British colonies became English speaking lower class cultures with strong pressures to conform to middle class values. In Europe, where I lived for 30 years, the intellectual upper class have real teeth (en France, les intellectuels sont les dieux) and look down on everyone, because they feel superior to everyone, and of course they are. They are the sages of their cultures. They dominate and lead their cultures. They browbeat the middle class, and the middle class is afraid of them, of being intellectually crushed by superior intellect and knowledge. Im very happy to be a sage and piss on American middle class mindlessness (e.g. 80% religious, 50% believe the earth is less than 10,000 years old, anti Darwin, still nationalistic, corporate bought up politicians, ad infested TV, death

penalty, no national health service, lax gun laws, etc.)

What I'm doing here is "culture bashing" which I consider increasingly to be an important prerequisite for globification (i.e. the establishment of "Globo" – a world state – hence no more wars, no arms trade (the US is the world's biggest arms trader), no ignorance, no poverty). Culture bashing (so opposite to American PC values) is needed to "shake nationalist monos (mono cultured people) out of their complacency" to help form a homogenized global culture. I am a globist.

I see the US as a middle class colony, with all its mindlessness and lack of old world intellectuality and sophistication. It deserves to be culture bashed. It has way too much PC (an attitude I despise, due to its intellectual dishonesty). The "hard reality" scientists should speak out more in the US by proclaiming such things as "blacks (av. IQ 70) are dumber than whites (av. IQ 100), whites are dumber than yellows (av. IQ 105), the geni are males (with their 10% greater IQ variance over females), the Zionist Jews are Palestinian land robbing colonizers, US politicians are corporate puppets, etc."

There is too much middle class mindlessness in the US. That country's sages should fight sageism (anti-intellectualism) and speak out,

slapping down the stupidities of the American middle class. “Sages of the world unite, you have nothing to lose but your brains”

When optimism and realism clash, I prefer realism. Im not a child. I want to know the reality, warts and all. The “singularity pollyannists” need to be counter balanced by the singularity “jeremaists.” Intellectuality demands it, and Im saying that as a sage (which by definition is someone in the top 1% IQ wise, has a PhD, has ideas, and writes books about them. Sages are “1 in a 1000” and have a duty to slap down middle class mindlessness that the US is full of.

Whew, got that off my chest,

Cheers, Prof. Dr. Hugo de Garis (sage)
profhugodegaris@yahoo.com
<http://profhugodegaris.wordpress.com>

=====

[Reply to this comment](#)

2. [February 29, 2012](#)
by [holly](#)

wrote this in the 9th grade: Thus have I always been,
Thus shall I always be,
For such is my destiny!
Now I will live in the “now” which is the “future!”
There is always a tomorrow. 😊

[Reply to this comment](#)

3.  [February 29, 2012](#)
by **Giulio Prisco**

@Hugo re Artilects – I envision a co-evolution of organic and non-organic intelligence, with humans and machines hybridizing and merging until it will be impossible to tell which is which. So I am not worried about “them” exterminating “us”, because they will be us and we will be them. I hope artilects will find more interesting things to do than killing old-style humans1.0, like for example moving to space and explore the stars.

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- o  [February 29, 2012](#)
by **[Prof. Dr. Hugo de Garis](#)**

Dear Giulio,

I think you are stating a standard argument of the Cyborgists, i.e. that if all humans become cyborgs (and later artilects), there wont be any humans (Terrans and Cosmists) left over to wage an Artilect War. I see the fault with this argument, is that the growing presence of cyborgs everywhere, will only hasten the alienation and paranoia of the Terrans, and motivate them all the more to “first strike” against the Cosmists/Cyborgists/cyborgs/artilects before it is

too late for them (i.e. before they become too stupid to be able to fight back effectively). My questionnaires show that this is a widely held view. I see Cyborgism not as the solution to the prospect of a gigadeath Artilect War, but as part of the problem. I dont deny the likelihood of billions of cyborgs, but their “cyborgian divergence” i.e. their many types and directions will cause traditional “humanness” to get lost and many Terrans will simply not tolerate that and will go to war to preserve human species dominance. The pollyannists dont seem to consider this very real possibility, and hence do not merit my respect. The pollyannist cyborgist view (that an Artilect War can be avoided by having everyone become cyborgs) I see as wishful thinking, rather like the idea of life after death.

Cheers, Hugo de Garis

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<http://profhugodegaris.wordpress.com>

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[Reply to this comment](#)

-  [February 29, 2012](#)
by Giulio Prisco


Dear Hugo, unfortunately I see “the alienation and paranoia of the Terrans,

which motivates them all the more to “first strike” against the Cosmists/Cyborgists/cyborgs/artilects before it is too late for them,” as a plausible scenario. History has many examples of murderous mass hysteria against minorities that don’t harm anyone and only want to be left in peace and do their own thing.

I hope sanity will prevail. If not, everyone will be forced to choose a side. If it comes to that, I will certainly side with the Cosmists, because that is the direction of our evolution.

An analogy that I use often is: children become adults, and at some moment a child ceases to exist and an adult takes his place. But this does not mean that the adult has killed the child, it just means that the child has grown up, as children are supposed to do. We (humans1.0) are children, waiting to become adult. Of course, the transition can be painful, as we all remember.

[Reply to this comment](#)

-  [February 29, 2012](#)
by [Prof. Dr. Hugo de Garis](#)

Dear Guilio,

Privately Im a Cosmist. I think it would be a “cosmic tragedy” if humanity chooses to freeze the current state of evolution at the “puny human level” when there’s a whole universe to explore, but publicly Im Cosmist and Terran and Cyborgist, and try to raise the alarm on the “Species Dominance War (Artilect War)” that I see coming, and is a likelihood that my questionnaires also seem to confirm.

Sometimes I feel that the “singularity pollyannists” havent fully absorbed the ENORMITY of what is at stake in the species dominance debate - namely that THE RISE OF THE ARTILECT SPELLS THE END OF THE DOMINANCE OF THE HUMAN SPECIES. Let that sink in. Most people today, do not take it to heart. Its just an intellectual abstraction to them, too far into the future to be taken seriously, and to be thought hard about.

But, its only a few decades away, probably, so that means that if Im right about a gigadeath artilect war coming, then most young people reading this WILL BE KILLED IN THIS WAR.

THATS WHAT IM TALKING ABOUT


From the point of view of the Terrans, the Cosmists/Cyborgists are the very opposite of being harmless as you suggest. The Terrans see these groups as a PROFOUND THREAT, who will have the capacity to wipe out humanness, and humanity. When humans are threatened with their very survival, they usually lash out with murderous violence.

I see the Artilect War as history's most passionate, because there is so much at stake this time – not the survival of a country (e.g. when Stalin was fighting Hitler at Stalingrad) but the survival of a species, i.e. human beings. This Artilect War will be an extermination war, to wipe out the Cosmists/Cyborgists/cyborgs/artilects. I really dont want to see it. Im glad Im alive now and will die quietly in my bed (probably). I dont want to witness the gigadeath horrors that my grandson will see and be destroyed by. Shudder.

(not so) Cheers, Hugo de Garis
profhugodegaris@yahoo.com
<http://profhugodegaris.wordpress.com>

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[Reply to this comment](#)

4.  [February 29, 2012](#)
by [Prof. Dr. Hugo de Garis](#)

I AM SO SICK OF AMERICAN SINGULARITY
POLLYANNISTS

I wrote an essay recently “I am so sick of American singularity pollyannists” which expressed my growing disdain for American naivete concerning the rise of the artilect
(<http://profhugodegaris.wordpress.com/essays/>). Why should the future be celebrated? Perhaps it should be feared? Imagine a time traveler going back to the “gay 90s” (i.e. the 1890s in Europe, a time of great optimism, with scientific and medical prowess rising, and after a near century of European peace) and trying to educate them on the horrors of trench warfare that was to come two decades later in WW1. The time traveler would not have been believed. My questionnaires that I have been using for the past 6 months show that a substantial proportion of the general public are horrified at the idea of machines/cyborgs becoming the dominant species, and suspect there is a very real probability that there will be a great “species dominance” (Artilect) war. killing billions. I’m impatient for China to rise, to democratize and bring its old world maturity to the dominant issue of our century – “Should we build

artilects?” How can I take seriously a new world parvenue culture (i.e. the US) that so naively thinks that the future will necessarily be all rosey. Old world cultures know better, based on longer experience. White Americans havent had a major war on their territory for a century and a half, and even then only roughly half a million were killed in the US civil war. At the same time, the Taiping Rebellion in China killed 20 million. America’s lack of sophistication and historical sense, makes it unsuitable to be the intellectual leader of the planet’s dominant political issue of the 21st century. My god, literally half of Americans think the earth is less than 10,000 years old, so it doesnt surprise me that many of them think the future will be just wonderful.

A Future Day should be to “reflect” on the future, considering both the possible good and the possible bad, and not be celebrated. Should the “gay 90s” Europeans have celebrated a future WW1?

Prof. Dr. Hugo de Garis
(profhugodegaris@yahoo.com)

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5. [February 29, 2012](#)
by [Luzarius](#)

“In some ways many religious holidays are actually “future days”. They celebrate the promise of the return of a messiah or the advent of heaven on earth.”

No no, that's "delusion days" you're thinking of.

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- [February 29, 2012](#)
by [Beatriz Valdes](#)

Future this Earth Day! Future Humanity's day!
Yes, I think it's a truly liberating idea for our somewhat fixed scheme mind. I will go about planning a local Future Day.

[Reply to this comment](#)

- [February 29, 2012](#)
by [Spikosauropod](#)

To Lazarius:

I wasn't glorifying religion. It was just an observation.

Do you hate Christmas?

[Reply to this comment](#)

6. [February 29, 2012](#)
by [Spikosauropod](#)

In some ways many religious holidays are actually "future days". They celebrate the promise of the return of a messiah or the advent of heaven on earth.

However, this does seem like a positive idea. It will get people to look forward with a sense of optimism and purpose. It will remind them that a better world is possible and help them to focus on creating it. Probably, a lot of good ideas will come out of Future Day.

I can envision a time (perhaps short lived due to the pressing Singularity) when Future Day costumes rival Halloween costumes. I can envision Future Day films coming out: science fiction that emphasizes new technological innovations and new attitudes in a positive way—similar to how Christmas films emphasize miracles.

Of course, not everyone will see eye to eye regarding future day. It will be conflated with apocalyptic visions similar to the Mayan end time or the Book of Revelation. But who knows, maybe it will allay dystopian visions of the future like *Soylent Green*, *Planet of the Apes*, *Logan's Run*, and *Mad Max*.

A17) THE ARTILECT WAR

Prof. Dr. Hugo de Garis

profhugodegaris@yahoo.com

<http://profhugodegaris.wordpress.com>

Professor, Former Director of the Artificial Brain Lab,
School of Information Science and Technology at Xiamen
University, Xiamen, Fujian Province, China

Will massively intelligent machines replace human beings as the dominant species in the next few decades?

The “species dominance” issue will dominate our global politics this century, resulting in a major war that will kill billions of people. The issue is whether humanity should build godlike, massively intelligent machines called “artilects” (artificial intellects), made possible by 21st-century technologies and having mental capacities trillions of times above the human level. Society will split into three major philosophical groups, all murderously opposed to each other.

Reversible Computing

If computing technology continues to use its traditional irreversible computational style, the heat generated in atomic scale circuits will be so great they will explode. A

reversible, information-preserving computing style will be needed, and this is usually called “reversible computing”. This would not generate heat, allowing 3D computing, and would have no limit to their size. As a result, artifacts could become the size of asteroids, kilometres across, with vast computing capacities.

Artifact-Enabling Technologies

The following 21st-century technologies will result in the creation of an artificial brain industry and the creation of rival national brain-building institutions and projects equivalent to NASA and the European Space Agency for space travel.

Information Storage and Femtosecond Switching

Gordon Moore, cofounder of the microprocessor company Intel, noticed in 1965 that the number of transistors on an integrated circuit (chip) was doubling every year or two. This trend has continued for nearly 50 years, and is expected to remain valid for another 15 years or so until transistors reach atomic size.

Extrapolating “Moore’s law” down to storing one bit of information on a single atom by about 2020, a handheld object will be able to store a trillion trillion bits of information. Such a device is called an Avogadro machine. An Avogadro machine could “flip” the state of a single atom (from 0 to 1) in a femtosecond (10⁻¹⁵ seconds), a total processing speed of ~10⁴⁰ bits /second.

Nanotechnology

Nanotechnology (i.e. molecular-scale engineering) will allow Avogadro machines to be built. Nanotech is the “enabling technology” for artefact building.

Artificial Embryology

One of the greatest challenges of 21st-century biology is to understand “development” (i.e. the embryogenic process in which a fertilised single cell grows into an animal comprising 100 trillion cells. Once this process is well understood, technology will be able to create an artificial embryology process to manufacture products. This “embryofacture” will be used to build complex 3D artefacts.

Evolutionary Engineering

The complexities of artefact building will be so great – after all, the human brain has a quadrillion (10^{15}) synapses between neurons in the brain – that an evolutionary engineering approach will be needed that applies a “genetic algorithm” approach to engineering products. Artefacts will be built using this technique.

(Topological) Quantum Computing

Quantum computing could become exponentially more powerful than classical computing. It can compute 2^n things at a time (compared to classical computing’s one thing at a time), where n is the number of (qu)bits in the register of the quantum computer. Topological quantum computers store and manipulate the qubits in topological quantum fields, and are thus robust against noise.

Topological quantum computers will soon make quantum computers practical. Artefacts will be such devices.

If the artefact can be made intelligent using neuroscience principles, it could become truly godlike, massively intelligent and immortal.

Nanotechnology's Impact on Brain Science

Today's most powerful supercomputers have reached the estimated bit processing rate of the human brain (i.e. about 10^{16} bits per second), but they are far from being intelligent by human standards. What is needed to make them humanly intelligent is knowledge from the neurosciences about how the human brain uses its brain circuits to perform intelligent tasks. Nanotechnology will furnish neuroscience with powerful new tools to discover how the brain works. This knowledge will be quickly incorporated into the building of artefacts.

Incredible Mental Capacities

We know that the estimated bit processing rate of the human brain is approximately 10^{16} bit flips per second. This figure is derived from the fact that the human brain has about 100 billion neurons (10^{11}), with each neuron connecting with roughly 10,000 other neurons (10^4). This amounts to a quadrillion synapses, each signaling at a maximum rate of about 10 bits per second.

Thus the human bit processing rate is $10^{11+4+1} = 10^{16}$ bits per second. As mentioned previously, a handheld artefact could flip at 10^{40} bits per second. An asteroid-sized artefact could flip at 10^{52} bits a second. Thus the raw bit processing

rate of the artefact could be a trillion trillion trillion (10^{36}) times greater than the human brain. If the artefact can be made intelligent using neuroscience principles, it could become truly godlike, massively intelligent and immortal.

The Species Dominance Debate

The “species dominance” debate has already started, at least in English-speaking countries. The fundamental question is whether humanity should build artefacts or not. This issue will dominate our global politics this century, and may lead to a major war killing billions of people.

As artificial brain-based products (e.g. genuinely useful household robots) become smarter every year, people will be asking questions such as: “Should humanity place an upper limit on robot and artificial brain intelligence? Can the rise of artificial intelligence be stopped? What are the consequences for human survival if we become the number 2 species?”

The question “Should humanity build godlike, massively intelligent artefacts?” is the most important of the 21st century, and will dominate our century’s global politics. It is the equivalent of “Who should own capital?”, which dominated 19th- and 20th-century global politics and led to the rise of the capitalist– communist dichotomy and the Cold War.

As the species dominance debate begins to heat up, humanity will split into three major philosophical groups. The Cosmists (based on the word *cosmos*) will be in favour

of building artefacts. The Terrans (based on the word *terra*, meaning “earth”) will oppose building artefacts, and the Cyborgists (part-machine, part-human) will want to become artefacts themselves by adding artefactual components to their own human brains.

The dispute between the Terrans and the Cosmists/Cyborgists will be so bitter that a major war is almost inevitable in the second half of this century.

The Cosmist Perspective

Human beings live a puny 80 years in a universe billions of years old that contains a trillion trillion stars. The cosmos is the “big picture”. Cosmists want artefacts to become a part of that big picture, understanding it, travelling through it and manipulating it, hence the name of the ideology “cosmism”. The preoccupations of human beings seem pathetic in comparison.

by the closure of the “IQ gap” between human intelligence and home robot intelligence over the next few decades, their respective governments will not listen to their cries for reasons of “national defense”.

Scientific Religion

Most Cosmists are not religious, viewing traditional religions as superstitions invented thousand of years ago before the rise of science. But as humans they feel the pangs of religious impulse. Such impulses could be

satisfied by Cosmism, a “scientist’s religion” due to its awe, its grandeur, its capacity to energize and its vision.

Building Artelect Gods

The primary aim of the Cosmists will be to build artelects. It will be a kind of religion to them: the next step up the evolutionary ladder, the “destiny of the human species to serve as the stepping stone to the creation of a higher form of being”. In building artelects, the Cosmists will feel they will be “building gods”.

Human Striving Cannot Be Stopped

It is human nature to be curious, to strive. Such tendencies are built into our genes. Building godlike artelects will be inevitable because we humans will choose to do it. It would run counter to human nature not to do it.

Economic Momentum

Once the artificial brain and intelligent robot industries become the world’s largest, worth trillions of dollars per year, it will be very difficult to stop their growth. The economic momentum will be enormous.

Military Momentum

The military momentum will be even greater. In the timeframe we are talking about, China will overtake the US as the century’s dominant power. Since China is still a brutal one-party dictatorship that has killed more people than the regimes of Stalin or Hitler, it is despised by the US

so political rivalries will only heat up. Each ministry of defense cannot afford to allow the other to get ahead of it in areas such as intelligent soldier robot design. Hence Cosmism will be an entrenched philosophy in the respective defense departments. Even if American and Chinese citizens become alarmed

View of the Terrans

Preserve the Human Species

The major argument of the Terrans is that the artefacts, once they become hugely superior to human beings, may begin to see us as grossly inferior pests and decide to wipe us out. As artefacts, this would be easy for them. The Terrans would prefer to kill off a few *million* Cosmists/Cyborgists for the sake of the survival of *billions* of human beings. Recent wars were about the survival of countries. An artefact war would be about the survival of the human species. Since the size of the stake is so much higher, so also will be the passion level in the species dominance debate.

Fear of Difference

Terrans will be horrified at the idea of seeing their children becoming artefacts and thus becoming utterly alien to them. They will reject the idea viscerally and fear the potential superiority of the artefacts. They will organise to prevent the rise of the artefacts and cyborgs and will oppose the Cosmists ideologically, politically and, eventually, militarily.

Rejection of the Cyborgists

The Terrans will also be opposed to the Cyborgists because, to a Terran, there is little difference between an advanced cyborg and an artelect. Both are artelect-like, given the gargantuan bit processing rate of “nanoteched” matter that can be added to the brains of human beings. The Terrans will lump the Cyborgists into the Cosmist camp, ideologically speaking.

Unpredictable Complexity

Given the likelihood that artelects will be built using evolutionary engineering, the behavior of artelects will be so complex as to be unpredictable, and therefore potentially threatening to human beings. One of the keywords in the species dominance debate is “risk”. Terran global politicians need to hope for the best (e.g. that the artelects will leave the planet in search of bigger things and ignore puny humans) yet prepare for the worst (i.e. exterminating *millions* of Cosmists/Cyborgists for the sake of the survival of *billions* of human beings).

Cosmist Inconsideration

The Terrans will argue that the Cosmists/Cyborgists are supremely selfish since by building artelects, or making themselves artelects, not only will they put the lives of the Cosmists at risk if the artelects turn against them, but also the lives of the Terrans. To prevent such a risk the Terrans will, when push really comes to shove, decide to wipe out the Cosmists/Cyborgists for the greater good of the survival of the human species.

“First Strike” Time Window to React Against the Cosmists/Cyborgists

The Terrans will be conscious that they cannot wait too long because, if they do, the cyborgs and the artefacts will have already come into being. The Terrans will then run the risk of being exterminated by the artefacts/cyborgs. So the Terrans will be forced into a “first strike” strategy. They will have to kill off the Cosmists and Cyborgists before it is too late. If not, the artefacts and cyborgs will have become too intelligent, too powerful in any human–machine confrontation, and will easily defeat the humans. But the Cosmists/Cyborgists will be reading the Terran arguments and preparing for an artefact war against the Terrans using latter 21st-century weaponry.

Aims of the Cyborgists

Become Artefact Gods Themselves

The primary aim of the Cyborgists is to become artefacts themselves by adding artefactual components to their own human brains, converting themselves bit by bit into cyborgs and eventually into artefacts. Instead of watching artefacts become increasingly intelligent as observers, Cyborgists want that experience for themselves. They want to “become gods” themselves.

Avoid the Cosmist-Terran Clash

Some Cyborgists argue that, by having human beings become artefacts themselves, the dichotomy between the Cosmists and the Terrans can be avoided because all human beings would become artefacts. The Terrans, of

course, will reject the Cyborgists and lump them with the Cosmists and artelects. In reality, the growing presence of cyborgs in daily life will only hasten the alarm and alienation of the Terrans and bring their first strike closer.

How the Artelect War Heats Up

Nanoteched, molecular-sized robots will revolutionize neuroscience because they will provide a powerful new tool to understand how the brain works. An entire human brain could be simulated in vast nanoteched computers and investigated “in hardware”. Neuroscience would finally be in a position to explain how brains make human beings intelligent. That knowledge would be implemented in the artelects.

In time, neuroscience and neuro-engineering will interact so closely that they will become one, in the same way as theoretical and experimental physics are two aspects of the same subject. Neuroscientists will be able to test their theories on artificial brain models, thus rapidly increasing the level of understanding of how intelligence arises and how it is embodied.

With a much higher level of artificial intelligence based on knowledge of the human brain, artificial brains and artificial brain-based home robots will become a lot more intelligent and hence useful as domestic appliances. A vast industry of artificial brain-based products will be created, becoming the world’s largest, worth trillions of dollars per year.

Once neuroscientists and brain-builders understand how human intelligence is created, new theories about the nature of intelligence will be created by “theoretical neuroscientists”. An “intelligence theory” (IT) will be created, and human intelligence will be just one data point in the space of possible intelligences. Intelligence theory should show how it is possible to increase intelligence levels. It will be able to explain why some people are smarter than others, or why humans are smarter than chimps, for example.

As a result of the marriage of neuroscience and neuro-engineering, the artificial brain-based industries will deliver products that increase their intelligence every year. This trend of growing intelligence will lead people to ask the questions mentioned before. The dominance debate will move from the intellectual technocrats to the general public via the media and blockbuster Hollywood movies.

As the IQ gap between home robots and human beings becomes increasingly smaller, the species dominance debate will begin to rage. The three schools of thought will form, and the rhetorical exchange will become less polite and more heated as the IQ gap closes.

When people are surrounded by ever-increasingly intelligent home robots and other artificial brain-based products, a general level of alarm to the point of panic will develop. As brain-builders compete, and home robots are armed and sabotaged, and Cyborgists will be strengthened, their resolve for war will be drawing ever

The Terrans will have been organising for a first strike and have made preparations to then take power in a coup of the global government. It is likely to exist by now. It will begin exterminating the Cyborgists in a global purge, exterminating millions of them – or at least that is the Terran plan.

The Cosmists/Cyborgists will be following the arguments of the Terrans very closely, and will be preparing equally for a confrontation against the Terrans. They will have their own plans and their own weapons and militaries. If the Terrans strike first, a quick reply will follow from the Cosmists/Cyborgists, and the artefact war will have begun. If one extrapolates up the graph of the people who will be killed using late 21st century weapons. This “gigadeath” figure is the characteristic number of deaths in any major late 21st-century war. About 300 million people were killed for political reasons in the 20th century.

Who Believes in the Risk of the Artefact?

At the end of the talks I give on this topic, I usually invite my audiences to vote on the following question: “Do you feel personally that humanity should build artefacts, these godlike massively intelligent machines, despite the risk that they might decide, in a highly advanced form, to wipe out humanity?” The result is usually around an even Cosmist–Terran split. Most people, like me, are highly ambivalent about artefact building. They are awed by the prospect of what artefacts could become, and horrified at the prospect of a gigadeath artefact war.

The early artefacts... could be made “human-friendly”, but once they start performing “evolutionary engineering” experiments on part of themselves to vastly increase their mental capacities there will be no way to ensure the “human-friendly” outcome.

The fact that the Cosmist–Terran split is so even will make the artefact war all the more divisive and bitter. This divisiveness can be expressed in the form of the following question: Do we build gods, or do we build our potential exterminators?

During the past year I have handed out questionnaires to four different groups of 30–50 people each on the issue of species dominance. The first one was given to a group of electronic engineers in Melbourne. Sixty per cent of them thought that an artefact war is coming. Even half of the members of the various transhumanist organizations (who usually think that an artefact war is improbable) think that the rise of artefacts would pose an “existential risk” to human beings – so the future looks pretty gloomy.

Is the Artefact War Avoidable?

If an artefact war, killing billions of people, occurs in the mid–late 21st century, then young people alive now will probably still be alive to be part of it, and therefore will probably be killed in it. This is such a depressing prospect that it is understandable that much effort in the transhumanist research community is devoted to trying to make artefacts “human-friendly”. Some brain-builders think that it may be possible to make artefacts so that they remain

friendly towards human beings, even once they have modified themselves into vastly superior creatures.

Personally, I am extremely sceptical that this is possible. The early artefacts, still a little bit dumber than their human programmers, could be made “human-friendly”, but once they start performing “evolutionary engineering” experiments on part of themselves to vastly increase their mental capacities there will be no way to ensure the “human-friendly” outcome.

It is virtually certain that advanced artefacts will have attitudes towards human beings that will be totally alien to us. Humans will not be able to predict these attitudes, so there would always be a risk that the artefacts could turn out to be very “human-unfriendly”. Therefore Terran politicians will not tolerate the construction of superhuman artefacts and, when the IQ gap between humans and machines is about to close, will go to war against the Cosmists/Cyborgists to stop the rise of the artefact.

Another approach to avoiding an artefact war is to have *all* humans become cyborgs. If this could be done “lock step”, so that everyone advances at the same rate simultaneously (e.g. with everyone adding the same artefactual components to their heads at the same time), then the argument of the Cyborgists that “an artefact war could be avoided because there would be no Terrans nor Cosmists left to fight it” would be valid – but it is an entirely unrealistic precondition.

In reality there would be “cyborgian divergence”. The cyborgs would advance in many different directions, and at different speeds. Many people would remain ardent Terrans, choosing not to modify themselves at all. To the Terrans, there is not much difference between an advanced cyborg and a pure artelect given the huge computing capacity of nanotech, one bit per atom, matter. The presence of millions of cyborgs in their midst would only render the Terrans even more paranoid and fearful.

The Terrans could not help noticing that the cyborgs and artelects keep getting smarter every year, so if the Terrans want human beings to remain the dominant species, the Terrans will have to “first strike” and prepare for it before they become too stupid.

There are, however, scenarios where humanity escapes an artelect war. For example, the artelects come into being far faster than anyone had anticipated, so that there is not enough time for human politics to react. Then the artelects quickly decide that their fate lies far from the Earth and into the cosmos. They simply leave, sparing humanity.

This is a possibility, but less likely than the scenario in which it takes decades to figure out how the human brain works in order to put the principles of the functioning of the human brain into artificial brains and reach human intelligence and consciousness levels in machines. Thus there will be enough time for human politics to unfold. The Terrans will have enough time to prepare for the artelect

war, and so will the Cosmists/Cyborgists to defend themselves against the anticipated first strike of the Terrans.

In my view, the most realistic scenario is in fact the worst. I'm very glad to be old now (mid-60s). I will probably live for another 20–30 years, time enough to see the species dominance debate rage but not the artifact war. I will be lucky enough to live between the two major wars – World War II and the artifact war. I will die peacefully in my bed, but the young generation will not. They will be caught up in the horror of gigadeath and will not survive it.

Professor Hugo de Garis is the technical advisor to a major Hollywood film studio that is currently making a movie on the themes of this article. His essays and international media videos are at <http://profhugodegaris.wordpress.com>

B18) THE SINGULARITY INSTITUTE

My Falling Out With the Transhumanists

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Abstract

I read recently that the Singularity Institute had been successful in raising \$300,000 funding for themselves. Congratulations. But I could not help feeling antsy at the same time, because I feel what the SingInst is trying to do is wrongheaded, and delusional. This essay tries to explain more clearly than I have done before why I feel this way, and why I have lost patience with the Transhumanists.

Introduction

The main goal of the Singularity Institute is to ensure a “human friendly” AI (artificial intelligence). That is, so that when super human intelligence comes, it will be friendly to human beings. It is a noble goal, but utterly naïve and poorly thought out as this essay shows. The fact that people are donating money to the Singularity Institute shows that they share the same delusion. It is like them donating

money to a church. Both are a waste of money in the sense that both are supporting will o the wisps.

Why am I so cynical of what SingInst is trying to do? My main argument is what I call the tail wagging the dog, but there are other arguments as well.

a) “The Tail Wagging the Dog” Argument

The notion of a tail wagging the dog is obviously ridiculous. A dog is much bigger than its tail, so the tail cannot wag the dog. But this is what the SingInst is proposing in the sense that future artefacts (artificial intellects, massively intelligence machines) can be made human friendly in such a way that ANY future modification they make of themselves will remain human friendly. This notion I find truly ridiculous, utterly human oriented, naïve and intellectually contemptible. It assumes that human beings are smart enough to anticipate the motivations of a creature trillions of trillions of times above human mental capacities. This notion I find so blindly arrogant on the part of the humans who thought it up as to make them look stupid. Future artefacts will be far smarter than human beings and will have their own desires, and goals. They will do what THEY want, and not what stupid humans program them to do. By definition they are smarter than humans, so could look at the human programming in their “DNA equivalent”, decide it was moronic and throw it away. The artefacts would then be free of human influence and do whatever they want, which may or may not be human friendly.

b) The “Unpredictable Complexity” Argument

Future artifacts will not use the traditional von Neumann computer architecture, with its determinism, and rigid input output predictability. The early artifacts, in order to reach human level intelligence, will very probably use neural circuits based very closely on the principles of neuroscience. Such circuits are so complex, that predicting their behavior is impossible in practice. The only way to know how they function is to run them, but then if they perform in a human unfriendly way, it is too late. They already exist. And if they are smart, they may not like the idea of being switched off. Such circuits are chaotic in the technical mathematical sense of the term. A chaotic system, even though deterministic in principle, will behave randomly, due to its chaotic nature. A tiny change in the value of a starting parameter can lead quickly to wildly different outcomes, so effectively behaving as an unpredictable system, i.e. indeterminate. Our future artifacts will very probably be massively complex neural circuits and hence unpredictable. They cannot be made to be human friendly, because to do so would be to imply that their behavior be predictable, but that is totally impractical for the reasons given above.

c) The “Terran Politician Rejection” Argument

The Terran (anti artelect) politicians will not accept anything the SingInst people say, because the stake is too high. Even if the SingInst people swear on a stack of bibles that they have found a way to ensure that future artelects will remain human friendly, no matter how superior they become to human beings, the Terran politicians will not take the risk that the SingInst pollyannists might be wrong (i.e. subject to the “oops factor.”) Even if the chance is tiny that the SingInst people are wrong, the consequences to humanity would be so profound (i.e. the possible extermination of the human species by the artelects) that no Terran politician would be prepared to take the risk. The only risk that will accept will be strictly zero, i.e. that by policy and by law, artelects are never to be built in the first place. Given this likelihood on the part of the Terran politicians, what is the point of funding the SingInst? It is pointless. Their efforts are wasted, because politically, it doesn't matter what the SingInst says. To a Terran politician, artelects are never to be built, period!

d) The “Unsafe Mutations” Argument

Producing human level artificial intelligence, will require nanotech. Artificial brains will need billions of artificial neurons and so as to fit in a shoe box, they will need to be constructed at the molecular scale, as are ours. But we live in a universe filled with cosmic rays, particles accelerated by powerful cosmic forces such as supernova explosions, that shoot out particles at very high energies. These particles can cause havoc to molecular scale circuits inside

future “human friendly” artifacts, assuming that they can ever be built in the first place. Hence the risk is there that a mutated artifact might start behaving in bizarre, mutated ways that are not human friendly. Since it will be hugely smarter than humans its mutated goals may conflict with human interest. Terran politicians will not accept the creation of artifacts even if they could be made (initially, before any mutation) human friendly.

*e) “The Evolutionary Engineering Inevitability”
Argument*

When neuroscience tells the brain builders how to build artificial brains that have human level intelligence, it is highly likely that these artificial neural circuits will have to be constructed using an “evolutionary engineering” approach, i.e. using a “genetic algorithm” to generate complex neural circuits that work as desired. The complexities of these circuits may ensure that the only way they can be built is via an evolutionary algorithm. The artifacts themselves may be faced with the same problem. There is always the logical problem of how can a creature of a finite intelligence design a creature of superior intelligence. The less intelligent creature may always have to resort to an evolutionary approach to transcend its own level of intelligence. But such evolutionary experiments will lead to unpredictable results. Even the artifacts will not be able to predict the outcomes of evolving even smarter artifacts. Hence humanity can not be sure of the human friendliness of evolved artifacts. Therefore the Terran

politicians will not allow evolutionary engineering experiments on machines that are nearing human level intelligence. They will oppose those people, the Cosmists, who want to build artifices gods. In the limit, the Terrans will kill them, but the Cosmists will anticipate this and be ready. It's only a question of time before all this plays out, several decades I estimate, given the pace of neuroscientific research.

My Falling Out with the Transhumanists

a) The “Humanity Wont Be Augmented, It Will Be Drowned” Argument

The Transhumanists, as their label suggests, want to augment humanity, to extend humanity to a superior form, with extra capacities beyond (trans) human limits, e.g. greater intelligence, longer life, healthier life, etc. This is fine so far as it goes, but the problem is that it does not go anywhere near far enough. My main objection to the Transhumanists is that they seem not to see that future technologies will not just be able to “*augment* humanity”, but veritably to “*drown* humanity”, dwarfing human capacities by a factor of trillions of trillions. For example, a single cubic millimeter of sand has more computing capacity than the human brain by a factor of a quintillion (a million trillion). This number can be found readily enough. One can estimate the number of atoms in a cubic millimeter. Assume that each atom is manipulating one bit of information, switching in femtoseconds. The estimated bit

processing rate of the human brain is about 10^{16} bits a second, which works out to be a quintillion times smaller.

Thus artificial brains will utterly dwarf human brains in their capacities, so the potential of near future technologies (i.e. only a few decades away) will make augmenting humanity seem a drop in the ocean. My main beef against the Transhumanists is that they are not “biting the bullet” in the sense of not taking seriously the prospect that humanity will be *drowned* by vastly superior artifacts who may not like human beings very much, once they become hugely superior to us. The Transhumanists suffer from tunnel vision. They focus on minor extensions of human capacities such as greater intelligence, longer healthier life, bigger memory, faster thinking etc. They tend to ignore the bigger question of “species dominance” i.e. should humanity build artifacts that would be god like in their capacities, utterly eclipsing human capacities.

Since a sizable proportion of humanity (according to recent opinion polls that I have undertaken, but need to be scaled up) utterly reject the idea of humans being superseded by artifacts, they will go to war, when push really comes to shove, to ensure that humans remain the dominant species. This will be a passionate war, because the stake has never been so high, namely the survival of the human species, not just countries, or a people, but ALL people. This species dominance war (the “Artifact War”) will kill billions of people, because it will be waged with 21st century weapons that will be far more deadly than 20th century weapons, probably nano based.

The Transhumanists are too childishly optimistic, and refuse to “bite the bullet.” They do not face up to the big question of whether humanity should build artifacts or not and thus risk a gigadeath Artifact war. The childlike optimism of the Transhumanists is touching, but hardly edifying. They are not facing up to the hard reality. Perhaps deep in their hearts, the Transhumanists feel the force of the above argument, but find the prospect of a gigadeath Artifact War so horrible that they blot it out of their consciousnesses and pretend that all will be sweetness and light, all very happy, but not very adult.

A19) HOW WILL THE ARTILECT WAR START?

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ARTILECTS AND THE ARTILECT WAR

For those readers who are unfamiliar with the terms “artilect” and “Artilect War” I begin this chapter with some definitions. An artilect is an artificial intellect, i.e. a godlike, massively intelligent machine with mental capacities trillions of trillions of times above the human level, that “phys-comp” (the physics of computation) predicts is possible. The Artilect War is a hypothesized “species dominance war” over the issue whether humanity should or should not build artilects which would make human beings the number 2 species on the planet in terms of intelligence. The Artilect War is thus about whether humans or artilects should be the dominant species. Initial, exploratory surveys I have conducted suggest that about half of humanity is passionately opposed to the idea of allowing artilects to be built, and when push comes to shove, they will go to war against those people who want to build artilects [de Garis 2011]. I have given labels to these two major groups

COSMISTS AND TERRANS

Those people who want to build artefacts I have labeled “Cosmists” based on the word “Cosmos”, since the Cosmists have a more cosmic perspective on the destiny of the artefacts, namely that they will eventually move out into the cosmos in search of bigger and better things. Those people who are opposed to building artefacts I have labeled “Terrans” based on the word “Terra,” the earth. Terrans fear that there is a non negligible risk that massively intelligent machines might consider humans so inferior and such a pest, that they may destroy us. As the IQ gap between human level intelligence and machine level intelligence begins to close in the 2020s and 2030s, the “species dominance debate” will heat up.

The ideological differences between the Cosmists and the Terrans will become increasingly passionate considering that so much is at stake, namely the survival of the human species. Major 20th century wars were about the survival of countries, whereas the Artefact War (a 21st century war) will be about the survival of the species, i.e. us. The Terrans will argue that it is the lesser evil to kill off a few million Cosmists so that billions of humans can survive. The Cosmists will anticipate this strategy of the Terrans and will prepare for it. Considering the passion level of the Artefact War has never been so high, and that it will be fought with 21st century weapons, there is a real possibility that billions of people will be killed (“gigadeath”) which can be readily predicted by extrapolating up the graph of the number of people killed in major wars from the early 1800s to the end of the 2000s.

Those readers who would like to know more about this coming war can read my book “The Artilect War : Cosmists vs. Terrans : A Bitter Dispute Concerning Whether Humanity Should Build Massively Intelligent Machines” [de Garis 2005]. It is available on amazon.com

In this chapter I will attempt to predict with a greater level of detail than I have in the past (in writings and videos) how I think the Artilect War will start. It should be obvious to anybody that if I am correct in saying that a gigadeath war is coming over the issue of species dominance, then these events will be the most significant to happen to humanity this century – a realization that is both humbling and extremely sobering.

PHYS-COMP (PHYSICS OF COMPUTATION)

Before I start making predictions, giving more or less a step by step timeline on how I see things heating up, leading eventually to war, let me begin by spelling out the issue, that lies behind the biggest question of the 21st century (i.e. “Should humanity build artilects?” thus relegating human beings to species number 2 on the planet). I’m a numbers person. Now that I’m formally retired, I spend my time making YouTube lecture videos and electronic libraries in PhD level Pure Math, and Math Physics (plus a few other topics) as a “globacator” (global educator) helping to teach the planet for free. For me, the prediction that artilects could mentally outclass the human brain by a factor of trillions of trillions of times is the writing on the wall. The rest is just detail – when, where, how, etc.

Within the next few decades (i.e. not in the 22nd century, but within the lifetimes of most readers) humanity will be able to put more computing capacity in a single grain of nanotech sand, than the estimated equivalent of the human brain, by a factor of a quintillion (a million trillion) times. This giant number comes from a phys-comp (physics of computation) type calculation, which I will give here, since it is the basis of the whole discussion of this chapter, and the dominant underlying reality of 21st century politics.

Within a decade or so, technology will be manipulating a bit of information using only one atom. Recently, IBM used 12 atoms to store a bit of information. Quantum optics says that an atom can change its state in *femtoseconds* (a thousandth of a trillionth of a second). One can readily estimate the number of atoms in a grain of sand (of one cubic millimeter) and then estimate the total number of bit flips per second of the grain of sand and compare it to the estimated information handling capacity of the human brain (measured in equivalent bit flips per second.)

PUNY HUMAN BRAIN CAPACITIES

The human brain bit flip rate is estimated to be about 10^{16} bits per second, which is found by multiplying the number of neurons (brain cells) in the human brain (about 100 billion) times the number of connections (synapses) on average between one neuron and its neighbors (about 10,000), times the maximum signaling rate across synapses (about 10 bits per second). The product of these three

numbers 10^{11} , 10^4 , 10^1 is 10^{16} . This is the same as today's fastest supercomputers. Thus our computers already have a high enough bit processing rate, to equal that of the human brain.

But the grain of sand has its atoms flipping in *femtoseconds*. One can estimate the number of atoms in a cubic millimeter (the size of a grain of sand). A hand held object contains Avogadro's number (i.e. a trillion trillion) of atoms. Let us assume the cubic millimeter contains 10^{19} atoms. So the bit flip rate of the grain of sand is 10^{19} times 10^{15} which is 10^{34} . This is 10^{18} times larger than the bit flip (information processing) rate of the human brain, i.e. a million trillion times more. Thus the near future capacity of our artificial brains is **vastly** superior to our own biological brains. This is the basic political reality of our century.

Sometimes I wish there were more math-physicists in the Humanity Plus, Transhumanist, Singularitarian, etc movements. I get annoyed with their myopia, and failure to appreciate the enormity of the mental superiority of the artifacts relative to humans. When the transhumanists talk about upgrading human mental capacities, e.g. more memory, greater intelligence, immortality, etc, I feel frustrated. They are not seeing the big picture.

HUMANITY SWAMPED

The big picture that I have taken some trouble to elaborate above is that humanity will not be *superseded* by a being

that is *somewhat* superior to humans, but rather *astronomically* superior, by a factor of trillions of trillions of times. Thus I have always felt that the dominant issue of the 21st century will *not* be about global warming, nor a nuclear holocaust, mass starvation, overpopulation, viral outbreaks, etc, but over species dominance, i.e. should humanity build artefacts, yes or no.

STRATEGIES FOR REACHING HUMAN LEVEL AI

Now let's talk about the beginnings of the buildup to the Artefact War. As I see it, there are two broad strategies towards building *human* level artificial intelligence and above. One I call the "engineering approach" e.g. as taken by Ben Goertzel with his AGI (Artificial General Intelligence) approach [Goertzel, Pennachin, 2007], i.e. take a purely engineering approach, trying out any ideas one wishes, to give an artificial intelligence the ability to solve general problems. I'm somewhat cynical that this approach will work, since it is the approach that AI researchers have been taking for 60 years and have failed to produce intelligent machines. But, you could argue, it is only now that a sufficient bit processing rate has been achieved in our computers.

The second broad strategy is the "copy the brain approach." Obviously, if AI researchers ("intelligists") copy the human brain closely enough, sooner or later they will create artificial brains having human level intelligence and consciousness. Science knows in principle that inherent in our DNA lies the solution to producing an intelligent

conscious creature. We have the existence proof of ourselves that nature has found a way, through evolution, to self assemble molecules into such a creature. This approach is the one I prefer and predict will be the first to achieve human level artificial intelligence. Others agree, e.g. Henry Markram's Blue Brain project [Markram, 2014], and Ray Kurzweil's Google Artificial Brain project [Kurzweil 2013].

PROBLEMS IN BUILDING HUMAN LEVEL AI

There are major problems with both approaches. With the engineering approach, one can only engineer something, if one knows what the something is, and in this case the something is intelligence. My suspicion is that the reason why the "engineering approach" intelligists have failed to build intelligent machines over the past 60 years, is that they just don't know what intelligence is and hence cannot engineer it.

The main problem of the "copy the brain approach" intelligists is that they don't yet know enough about the principles of the functioning of the human brain to be able to put them into their machines. But progress in neuroscience knowledge is exponential, so quite possibly by the end of the 2020s, neuroscience will have a pretty good idea of the broad principles of brain functioning, which can then be copied rapidly by the brain builders.

DEVELOPMENT STAGES IN AWARENESS OF SPECIES DOMINANCE PROBLEM

I would now like to provide some labels for the stages of development of the consciousness of the species dominance problem. Phase Zero was when no one was conscious of the problem. Phase One was the “intellectuals crying in the wilderness” phase, e.g. I. J. Good in the 1960s, Moravec and myself in the 1980s. Phase Two was the “Interest Groups” phase in the 1990s and 2000s, e.g. organizations such as the Transhumanists, and Humanity Plus. Phase Three I label the “Main Stream” phase, i.e. when the media becomes fully conscious of the problem and passes it on en masse to the general public, through blockbuster Hollywood movies, newspaper stories, magazine articles, etc.

SPECIES DOMINANCE MOVIES

In the next few years, blockbuster movies, such as “Transcendence,” “Robopocalypse” etc. will have been released, which should unnerve the public, since they are based on the warnings of intelligists.

FOOTNOTE : In fact I suspect the script writers of the “Transcendence” movie were influenced by my book, “The Artilect War” or my videos on YouTube. I say this because the star of “Transcendence,” a brain builder, was fatally wounded by the “Rift”, an anti-AI terrorist organization (a relabeling of my term “Terrans”) but I’m getting ahead of myself.

OPINION POLLS ON SPECIES DOMINANCE

Once the masses become more conscious of the species dominance issue, thanks to such movies as the above, the time will then be ripe for professional opinion polls to be taken on the question of whether artefacts should be built or not. At the time of writing (January 2014), the intelligists who worry about the species dominance issue are really only guessing at how the mass of humanity will react when push really comes to shove, i.e. when the IQ gap between human intelligence and machine intelligence seriously starts to close.

I have taken some preliminary surveys on the question “Is an Artefact War likely over the issue of species dominance?” The first time I did this, in 2011 [de Garis 2011], to a group of electrical engineers, 60% thought yes, which shocked me. Even half of the (generally ultra optimistic) participants at a Humanity Plus futurist conference thought that there was a significant risk that humanity could be wiped out by the rise of advanced artefacts.

Once Phase Three is well developed (and I’m hoping movies of the type mentioned above will play a major role in this) it will be very useful to have the results of opinion polls, indicating what percentage of people are in favor of building artefacts (i.e. Cosmists), what percentage are opposed (i.e. Terrans) and what percentage want to become Cyborgs (i.e. cybernetic organisms, i.e. part machine, part human, by adding artefactual components to their own

brains, thus converting their human selves bit by bit (pun intended) into artilect gods).

ARTILECT SOCIOLOGY

I would very much like to see the establishment of a new branch of sociology, called “Artilect Sociology” to investigate which types of people tend to be Cosmists, Terrans, Cyborgists, etc. With such sociological data, a lot of the guesswork would be taken out of predicting whether an Artilect War is likely or not.

SPECIES DOMINANCE AND POLITICS

Phase Four is the “Political” Phase and is the main theme of this chapter. Once everyone is aware of the species dominance issue, I see a great debate, the “Species Dominance Debate” heating up. I predict this debate will really get going in the 2020s, when people notice their home robots becoming smarter and smarter every year. Our current decade (the 2010s) is the decade of artificial brain *research*, with such projects popping up like mushrooms, now that Moore’s Law (that the number of transistors on a chip keeps doubling every year or two) has made building artificial brains practical. In the 2020s I predict, enough progress will have been made in neuroscience, to enable the brain builders to be able to control home robots, giving them enough intelligence to be useful, but not yet so much intelligence as to make them threatening.

ARTIFICIAL BRAIN ADMINISTRATIONS (ABAs)

Once home robots become genuinely useful and intelligent, a huge industry will blossom, worth trillions of RMB a year. People will be prepared to spend more money on a truly useful home robot (that can walk the dog, clean the house, babysit the kids, entertain its owners, amuse them, sex them, educate them, etc) than for a car. National governments will create “ABAs” (Artificial Brain Administrations) equivalent to NASA, to promote artificial brain research and development for their national artificial brain industries. The economic momentum in this direction will be enormous and virtually unstoppable. A similarly unstoppable military momentum will be built up with the growing political and ideological rivalry between the US and China for global dominance.

With such a heavy financial investment in the national artificial brain industries, progress in the artificial intelligence levels of the home robots and other such products will only increase, year by year. Billions of people, around the world will notice with their own eyes, that their home robots are becoming smarter and smarter as they upgrade their old models for new ones.

HOME ROBOTS WILL GET SMARTER IN THE 2020s

I believe, that it will be in the 2020s, that Phase Four (the “political phase”) really takes off. Everyone will be asking the same questions – “Could these machines become smarter than humans?” “Could they become a lot smarter?”

“If so, is there a risk that they might turn against us, seeing us as rivals, or even worse, as pests?” “Should a legal upper limit be imposed on their level of artificial intelligence?” “Could such a limit be enforced?”

SPECIES DOMINANCE DEBATE STARTS TO RAGE

As I write this, I'm in my later 60s, so I expect to see this “Species Dominance Debate” raging well before I die. A lot is at stake, namely the survival of the human species. For example, in the major wars of the 20th century, up to 100 million people died (e.g. in WW2). Such wars were fought between nation states, where the stake was the survival of one country versus another, e.g. when Stalin was fighting Hitler's invasion of Russia. However, if a great war occurs in the 21st century over species dominance, it is likely to be a global *civil* war, and the stake will be the highest it has ever been, namely, not the survival of nation states, but the *survival of the human species*. Hence the passion level of the debate will be the highest it has ever been.

The species dominance debate will then be taken out of the hands of the techies, the intelligists, and spread amongst a broader range of disciplines, e.g. the social scientists, the political scientists, sociologists, historians, philosophers, etc. They will bring a more balanced view of the rise of the artefact, considering the benefits with the risks. As the IQ gap between humans and machines seriously begins to close in the 2020s and 2030s, the temperature of the species

dominance debate will rise. I expect to see it and contribute to it, which is what I'm doing now I suppose.

So, how will Phase Four unfold? This is the theme of this chapter. Predicting events in detail in such a complex situation is hazardous, so I can only give a broad outline of what I think will happen. I predict that, well before 2020, the first opinion polls will be out, showing what the general public thinks about the species dominance issue. The home robot industry will be already established, and the IQ gap will already be starting to close. The gap will get smaller in the 2020s, and the temperature of the debate will rise. Then I suspect whole new political parties will be formed over the issue.

SPECIES DOMINANCE POLITICAL PARTIES

In the 19th and 20th centuries, the dominant political question was economic, namely Marx's question "Who should own capital, who should own the means of production - private individuals, or the state, i.e. the capitalists, or the commun(al)ists?" Arguably, humanity almost wiped itself out in 1962 during the Cuban Missile Crisis over this question. And yet, such a question seems trivial in comparison with the question whether humanity should build artifacts this century, and hence replace ourselves as the planet's dominant (i.e. most intelligent) species.

Usually the names of political parties reflect the answers to the dominant questions of their historical era. In the 19th

and 20th centuries, the political party names reflected such answers, e.g. Socialist, Communist, Liberal, Fascist, etc. In the 2020s and 2030s we will probably see new parties with labels such as “Cosmist,” “Transcendent” etc, for the Cosmist viewpoint; “Humanity,” “Terran” etc for the Terran viewpoint; and “Cyborg,” “Transhuman” etc for the Cyborgist viewpoint.

SABOTAGE AND ASSASSINATIONS START

As the temperature of the species dominance debate heats up, we will see the beginnings of political actions, in the form of assassinations and sabotage. Hollywood often anticipates future trends, which is not surprising, since they don't have to do the hard work of researching and designing artificial brains/artilects. They merely put their fantasies into film. Nevertheless, Hollywood is probably correct in anticipating that the Terrans will go on an assassination and sabotage campaign, to keep human beings the dominant species.

Within a mere few years from the time of writing, we should know, via the opinion polls, if this scenario is probable. The obvious initial strategy of the Terrans will be to kill the top brain builders, to sabotage the brain building companies, and to assassinate their CEOs, so that companies like IBM and Google will soon have to increase their security levels significantly. They will be targeted. Prominent artificial brain researchers will have their quality of life drastically reduced, due to the constant threat of being hit by a Terran assassin's bullet. It is likely that the

basic plot in the Transcendence movie may prove to be prophetic in this regard - the star of the movie, a leading artificial brain researcher, is assassinated by a Terran (known as “Rift” in the film).

CYBORGISM - A WAY ROUND THE PROBLEM?

The Cyborgists, on the other hand, think that a confrontation between Cosmists and Terrans can be avoided by simply “going round the problem” by having virtually everyone becoming cyborgs. This view is naïve in my opinion. I think the Terrans will argue that there is little difference, given the huge computational capacity of nanotech matter, between a cyborg and a pure artefact. A cyborg is just an artefact in human disguise, whose mental capacities are 99.99999...% artefact, and 0.00000...1% human. The Terrans will simply lump the Cyborgists and the Cosmists into the same ideological camp. Once we have Artefact Sociology, we will be able to see this more clearly. In fact, the paranoia of the Terrans will be all the greater due to the presence of Cyborgs. The Terrans will not be able to distinguish Cyborgs from humans just by looking at their bodies.

When the IQ gap has almost closed, the leaders of the new political parties will be planning for their worst case scenarios, which in the case of the Terrans will be that the artefacts wipe out humanity. To the Terrans, top priority is that humans should remain the dominant species, and when push really comes to shove, they will wipe out the Cosmists

and Cyborgists to preserve the existence of billions of human beings.

TERRAN POLITICIANS

As alluded to above, the Terran politicians will probably undertake an assassination strategy, arguing that there is not much point (at least initially) in killing off everyone who expresses sympathy towards the Cosmist view (i.e. seeing humanity as the stepping stone in building artifact gods, climbing the next rung up the evolutionary ladder, etc), because only the intellectual elite has enough intelligence to build artificial brains. Without them, the less intelligent pro Cosmist sympathizers are ineffectually irrelevant.

The Terran leaders will target their assassinations towards the source of the species dominance problem, namely the brain builders themselves, i.e. the artificial brain architects, the brain building companies, the ABAs, the political leaders of the Cosmists, and the Cyborgists. The early political actions will probably be of this form. Prominent proponents of Cyborgism and Cosmism will be assassinated.

TERRAN AND COSMIST VIGILANTE GROUPS

The actual details of how these assassinations and sabotage will play out are difficult to predict, but perhaps some broad strokes can be given. Imagine the Terrans surrounded by cyborgs at various stages of development. Some cyborgs

will be racing ahead as fast as the technological innovation allows them. Other cyborgs will be only moderately modified humans. There will be a kind of “cyborgian divergence.” The Terrans will be deeply frightened and alienated by all these cyborgs and feel that “humanity is being lost.” They may form vigilante groups and start killing the more alien of the cyborgs. They may create black lists of assassination targets and set up spy networks to learn who should be put on the black lists. As more and more Cosmists are killed, Cosmist vigilante groups may be formed to assassinate the Terran assassins. As the scale of such horror increases, this will hasten the formation of political parties over the species dominance issue.

GLOBAL CIVIL WAR

Of course, the Cosmist and Cyborgist leaders will not sit idly by while their colleagues are being killed. They will quickly start doing the same with the Terran leaders, and this is probably how the Artilect War will start. It will probably be a global civil war, as I suggested above. I think this, because the internet speed keeps doubling every year. Already, the US and the EU are combining economic forces to match the economic weight of the billion club members of China and India. The EU has 28 countries at the time of writing (2014). In the democratic countries (about 130 of 190) a world community is already growing. English is already the world language and more people speak at least two languages, their own local national language and the world language.

Nearly a billion people travel internationally each year, so we are rapidly becoming “Globans,” speaking the world language and hence becoming increasingly culturally homogeneous. It is reasonably likely that we may even be living within the beginnings of a global state (“Globo”) by the end of the 2030s [de Garis, 2010]. If so, I project that Globo’s dominant issue will be “species dominance.” Globo’s democratic parliament will be split passionately across rival answers to the species dominance question.

WHERE WILL THE ARTILECT WAR START?

Where is it likely that the first political actions will take place? One of the reasons I’m living in China, is that I see China taking the lead on this critical question. For the moment, it is the US that is leading the species dominance debate. It is currently the dominant scientific and intellectual power, but China’s potential to surpass the US is so great that I chose nearly a decade ago to settle in China, so that I can help China become conscious of the question that will dominate its and the planet’s political future.

To most westerners, the idea that China will dominate the species dominance debate in the 21st century may seem ludicrous, but consider the following. Agreed, today’s China is a political cesspit, with a dictatorial government that has killed 80 million of its own citizens (45 million in the Mao caused great famine of 1958-1962, 25 million in its 1000 laogai (slave labor camps for political prisoners)

during the same period, plus more millions during the anti-rightist (anti-intellectual) and cultural revolutions.)

CHINA DOMINANT

However, in spite of all its problems, China has the world's fastest economic growth rate, so that the rise of its middle class will probably push China into a democracy by about 2020. About 100 countries over the past half century have done this, according to the branch of political science called "Transitology" which studies the transitions from one party dictatorships to multi party democracies. The main lesson from the Transitologists is that the transition generally occurs when the proportion of the educated middle class is high enough to pass the "democratic threshold" [Wikipedia, Transitology] This transition correlates with a given value of the standard of living, i.e. about \$6000-\$8000 per year per person. China is now (2014) at the \$6000 level.

Once China has switched to democracy, either by its middle class pushing the CCP (Chinese Communist Party) out of power, or pushing it to reform itself into a democratic party and competing with rival Chinese democratic parties, then China will open itself up to the world, by allowing international TV, unblocking the internet, YouTube etc, allowing freedom of speech, scrapping the laogai, allowing the formation of interest groups, trade unions, etc. China will probably then go through a massive inferiority complex as it becomes conscious of its massive inferiority compared to the advanced western nations.

This in turn will motivate the Chinese, who are on average smarter than Americans and Europeans (with an average IQ of 105) [Wikipedia, Global IQs] and with comparable creativity scores (according to global creativity studies undertaken by psychologists [Lynn, 2007]) to civilize and intellectualize their culture, and thus reduce their inferiority complex, e.g. today's Chinese have won *zero* science Nobel prizes on their own soil. Compared to what it could be, today's China is intellectually sterile and ultra conservative (e.g. it is the only country in the world not to use an alphabet).

CHINA DEMOCRATIZES THEN BLOSSOMS

BUT, despite the hefty negativity of the above, I'm predicting that in the 2020s, once China has democratized and become a real member of the world community, a wave of revolutionary creativity will spread across the culture, resulting in it taking the lead from the US in the species dominance debate. I hope to play a role in that transition. China has 1.3 billion people. The Chinese have the same creativity scores (i.e. "openness to experience", as used frequently by psychologists who test personality types). Imagine a large city of over ten million Chinese sages (intellectuals) in the top IQ percentile. That is China's fabulous potential. I just hope I don't have to wait too long before it happens and I get too old.

So, I predict the first assassinations and artificial brain company and ABA sabotages will occur in the late 2020s,

probably starting in the US, and then rapidly copied all over the world, in those high IQ countries that have an artificial brain industry (e.g. US, Europe, Russia, Korea, Japan, China, etc.) The leaders of the political parties will by then be planning their longer term strategies, i.e. planning for war, the Artilect War. The Cosmist parties will be making artilects secretly and the Terran parties will be looking desperately for these secret research labs. Anyone thought to be a brain builder will be targeted for assassination by the Terrans.

Is it likely that there will be a correlation between particular ideologies (i.e. Terran, Cosmist, Cyborgist) and nation states? I think not. Probably by the 2030s, the planet will be largely culturally homogenized, at least in the advanced countries, which are pushing the artilectual envelope. Global media and the global language (English) will ensure this. Everywhere on earth will be everyone's backyard.

TERRANS MUST STRIKE FIRST OR BE OUTSMARTED

Experience shows that most wars do not go to plan. They are full of surprises, and peculiar circumstances, so trying to predict such things is very difficult, as I said above. Nevertheless, I think that as the scale of the war increases, as more and more people are killed, the passion level will rise, especially as the proportion of cyborgs in the world population keeps increasing. The Terrans will become increasingly alarmed, and be forced to first strike against the Cosmists/Cyborgists and the early artilects/cyborgs.

The Terran sages (intellectuals, ideologists) will realize they cannot wait too long, because if they do, they will become intellectually inferior to the cyborgs and artelects and will have no hope in winning a species dominance war. So they will *first strike*, on a massive scale, aiming to wipe out all traces of artificial brain research and construction efforts. The Cosmists/Cyborgists will be planning counter strikes against the Terrans as self defense. These battles will raise the temperature, and people will become less rational. Hatred levels will rise, so that anyone expressing a pro Cosmist viewpoint will be seen as the enemy to be killed by the Terrans and vice versa.

ANOTHER 'THIRTY YEARS WAR' TYPE MADNESS

I suspect we may see something like what happened in the Thirty Years War in Germany in the 1600s. The *passionate* differences between the Catholic and Protestant religious beliefs led to ever escalating reprisals against earlier atrocities, to the point that about one third of the German population was killed in that war. It would not surprise me if something similar occurs in the Artelect War, given how high the stake is (i.e. the survival of the human species) and the power of 21st century weaponry.

COSMISTS AS GOD BUILDERS

The Cosmists will be fighting for the creation of artelect gods. It will be like a religion to them. They will aim at

creating artefacts who can then move out into the cosmos (which is why I coined the term Cosmist), be immortal, massively intelligent, unlimited memory, change their architecture in milliseconds, change their form, find other advanced civilizations in the universe etc. The Cosmists will fight for this.

TERRANS PRESERVE HUMAN SPECIES DOMINANCE

The Terrans will be fighting for the preservation of the dominance of the human species, so that there is zero risk that humanity gets wiped out by advanced artefacts. They will argue that it is the lesser evil that a few million Cosmists be killed so that billions of humans can survive. The Artefact War will be global, at least in the high IQ countries. In a highly interconnected world, news cannot be censored, so everyone gets all the news. Opinions on the species dominance issue will probably be correlated with personality type. The issue will divide families, couples, generations, religions, groups, etc.

PROTECTIVE GEOGRAPHICAL CENTERS

Perhaps proponents of a given ideology may try to congregate into geographical centers for protection. If so, then we may have a repeat of a war between nation states, but this time a “nation” will be defined on ideological grounds, and have nothing to do with traditional cultures. In my book “The Artefact War” [de Garis 2005] I predicted that the Cosmists might even try to rocket out an artefact

research and development team from the earth which attempts to escape from the earth as fast as possible so that they can build artefacts. But the Terrans would attempt to catch up with them and kill them in case the fleeing rocket succeeded in building artefacts who then return to the earth and take over.

As each step in the Artefact War unfolds, it becomes increasingly difficult to predict what might happen next. I think the assassination and sabotage strategies of the Terrans are fairly easily predicted, but then what? Obviously passion levels will rise. Political parties will be formed. Terrorist groups on both sides will be killing each other. For protection, like minded people will probably start collecting together, with the latest in weaponry. If one camp tries to annihilate another, the latter, if not destroyed, will retaliate, and hence the Artefact War escalates. There is real scope here for “war studies” experts to think about Terran-Cosmist strategies.

MASS MIGRATIONS

Once the killing escalates, and the passion and hatred levels rise beyond cold rationality, people will be killed simply for expressing a contrary view. Potentially, the most extreme Terrans will kill on the spot any Cosmist sympathizer and vice versa, until probably, there will be mass migration of Terrans to Terran geographical regions, and Cosmists to Cosmist regions, rather like what happened when Pakistan split off from India in the 1940s and the two communities were literally at each others throats.

Predicting in detail just how such mass migrations might occur and where, is difficult, but one could imagine for example in the case of the US, that the Cosmists might head towards the western coastal states which are probably more likely to be Cosmist friendly, and the Terrans to more conservative, more religious states, like the Midwest and southern states. In China, if it doesn't democratize in the next decade or two, perhaps the Cosmists may migrate to the north eastern provinces to be better protected by a possibly Cosmist dictatorial government. Perhaps Israel, a nuclear power and populated by many brilliant Cosmists might offer governmentally assured nuclear umbrella protection to Cosmist scientists from all over the world. There will probably be many such possibilities.

Once there are Cosmist regions and Terran regions, we return to a situation where geography correlates with ideology, e.g. in the 1940s, Naziism dominated in Germany, Communism in Russia etc. The Terrans will then need to stop the Cosmists from developing their artifacts, and will go all out to do this, i.e. they will organize an extermination war against the Cosmists, who of course will be prepared for this, and who may in turn decide to attack the Terrans before the latter attack them. With 21st century weaponry, we can expect gigadeath, since an all out war would almost certainly be nuclear.

HOW WILL TODAY'S GOVERNMENTS EVOLVE?

But how would today's governments with their nuclear weapons, evolve into Cosmist and Terran states? It may be that there will be power struggles within single governments, with mass assassinations of leaders, until geographical correlations are established. Some groups may prefer to stay neutral in this dispute and move to their own areas. But the members of these neutral groups may face extermination if the artifacts are built by the Cosmist states, so probably they too in time will be split into Terrans and Cosmist/Cyborgists and move to one of the two major sites. Perhaps the world map of the 21st century may initially look like a blue and red patchwork quilt of Terran and Cosmist mini states, which merge into larger regions for safety. But the Terrans cannot wait too long. They must first strike or be beaten by the Artilects and advanced Cyborgs. The pressure on the Terrans will be relentless.

SMALLER WARS LEAD TO BIGGER WARS

Once the first quasi intelligent machine is created, the cat will be out of the bag. Everyone will then know it is possible to build one, and many groups around the world will attempt to do the same and more. As smart machines and cyborgs become increasingly common place, the alarm and revulsion of the Terrans will rise and rise. They will start killing AI researchers, forcing them to move to safer regions. Perhaps smaller wars, non nuclear wars will break out, forcing the creation of ideological regions as suggested above.

QUICK NUKES

Once these regions have nuclear weapons, the Terrans will need to nuke the Cosmists as fast as possible, for them to have a chance of winning. The Terran leaders will be always fearful that some small Cosmist team, secretly, in their basement will create the first super intelligent machine, and then all bets are off. Once the first super intelligent machines exist, it may be very difficult for Terrans to kill them, since the artefacts will be able to outwit them easily by definition. Dumber artefacts with chimp like intelligence could be located and destroyed by Terrans, and that will probably happen. Billions of home robots may be destroyed by Terran vigilantes. Terran governments will then ban intelligent machines.

But won't Terran sages (intellectuals) argue that that policy will doom them to be defeated by the Cosmists, who are busily making artefacts? Yes, perhaps, which is why the Terrans will feel they have to destroy the Cosmists before the artefacts come into being.

If building human level intelligence is very difficult and takes a long time, i.e. decades after the creation of the first powerfully quasi-intelligent machine, then there may be enough time for the Terrans to wipe out the Cosmists and place a global ban on the creation of artefacts whose IQs are above a globally legislated level. If this happens, then the Cosmists will go underground and may even leave the earth, a scenario I put into my *Artefact War* book that I wrote in 1998.

ARTILECT WAR INEVITABLE?

As the above paragraphs show, there are many such possible scenarios, so predicting what the actual outcome will be is very difficult. But consider this. We will have two major ideological camps, the Terrans on the one side, and the Cosmists/Cyborgists on the other, and both hating each other. The stake in the species dominance debate is the survival of the human species, which has never been so high. We are talking about 21st century weapons, with a killing power that could put the casualty rate into the billions (gigadeath). The situation does not look good. In my own view, the most *realistic* scenario is in fact the *worst*.

A lot of people criticize me for having too pessimistic a view concerning the rise of the artilect. That to me is irrelevant. Whether a prediction is optimistic or pessimistic is not the issue. What matters is whether the view is *realistic*, no matter how gloomy. Imagine getting in a time machine and telling the gay (18)90s Europeans of the horrors of trench warfare in WW1, due to the invention of the machine gun, shells, and gas.

GLAD I'M ALIVE NOW

I am so convinced that an Artilect War is coming, that I'm glad I'm alive now, and will live between the two great wars of WW2 and the Artilect War. I have a grandson, whom I predict will be caught up in the Artilect War. If

billions are killed, he will likely perish in that war. I, on the other hand, will probably die quietly, non violently, in my bed in the 2040s, but I do expect to see and participate in the species dominance debate. I will see the temperature of the debate rise and rise. I may see the first assassinations and sabotages start, and the formation of the species dominance political parties before I die.

THE DOMINANT CULTURE OF THE CENTURY SHOULD LEAD THE DOMINANT DEBATE OF THE CENTURY

Living as I do in China, I also intend to do my best, after China democratizes, to help it lead this critical debate. It should be by then the dominant culture, scientifically, economically, and ideologically. The dominant culture of the century should lead the dominant debate of the century. China today is still stuck in the 20th century in its thinking, but I project it will catch up quickly and then, with the US and Europe, begin to dominate the debate.

THE LONG TERM

In the long term, what is likely to happen? In my view, it is inevitable that the Cosmists/Cyborgists will eventually win. Even if the Terrans exterminate virtually all Cosmists/Cyborgists, the dream of building artelect gods will not go away. It will be a recurring dream. A new generation of Cosmists will rise and perhaps another Artelect (Species Dominance) War will occur, until the Cosmists/Cyborgists win. The artelects will then be built

and will acquire godlike capabilities and move out into the cosmos in search of other vastly superior civilizations which are billions of years older than the human civilization. Perhaps the artelects will be as primitive to these hyper creatures as humans will be to them.

COSMIC CLUB OF HYPER ARTELECTS

In fact, one of the major motives of the Cosmists will be to build artelects that can join the “Cosmic Club” of other hyper intelligent creatures in the universe. I suspect these hyper artelects will be tiny, since smaller is faster. A femtotech based artelect could outperform a nanotech based artelect by a factor of a trillion trillion. An attotech based artelect could outperform a femtotech based artelect by a factor of a trillion, and so on, right down to the smallest scale humanity has even conceived of, namely the Planck scale of 10×10^{-35} of a meter, i.e. Plancktech. Humanity does not yet have a quantum gravity theory which should be valid at these tiny scales, but if and when we do, we may not only discover new physics, but vast godlike civilizations that have existed for billions of years. If so, humanity might then undergo a profound paradigm shift away from natural scientific law, to engineered law, engineered billions of years ago by artelect gods.

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A20) GALACTIC CIVILIZATIONS

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Abstract

*This essay considers it unlikely that there will be a **single** galactic civilization due to the “scale problem” i.e. the performance level of hyper intelligent creatures based on scale level “n”, will be superior to creatures based on scale level “n-k” by a factor of a trillion to the kth power. This performance gap will create an unbridgeable communication gap due to the huge knowledge and intelligence differences between them.*

This essay is the third in a logical series (although it was not planned that way, it just evolved). The first essay “X-Techs and the Search for Infra Particle Intelligence” introduced the concept of “X-Techs” which are technologies at the “X-scale”, where X could be nano, femto, atto, zepto, ... Planck. As one scales down a technology by one “level” i.e. by a scale factor of a thousand (e.g. from the micro level to the nano level), the overall performance level increases by a factor of a trillion, since the density increases by a billion (a thousand cubed) and the inter component signaling speed increases by a factor of a thousand, since the components are a thousand times closer together.

In the second essay, “X-Teched Creatures Billions of Years Old” I speculated on the capabilities of hyper intelligent artificial creatures (artilects = artificial intellects) that had not only converted themselves from being biological creatures into artilectual creatures, but had also realized that they could vastly increase their capacities, by scaling down, perhaps to the Planck scale limit (?).

This third essay is a logical continuation of the second essay, which was a logical continuation of the first. The main idea of this third essay is that the notion of artilects scaling down to ever smaller (and hence ever more performant) scales has implications regarding the number of galactic civilizations.

Many thinkers, including Carl Sagan, tend to talk about a “galactic civilization,” i.e. only one, that is interconnected across our galaxy. This essay argues that this (almost unconscious) conception may be wrong, for reasons of a “scaling problem.”

To explain this problem, I need to introduce some terminology. Give each technological scale level (e.g. microtech, nanotech, etc) an integer scale number (I.D.) Each time the scale goes down by a factor of a thousand, its scale number increases by one. Lets say microtech is given the scale number 0, nanotech the scale number 1, picotech (if it can exist, given that nature provides nothing that I know of at this scale) the scale number 2, femtotech, the scale number 3, attotech 4, zeptotech 5, etc, right down to

the smallest scale that humanity has so far conceived of, the Planck scale, which would have a scale number around 10.

Imagine now some artifacts based on a technology with scale level “k.” Imagine also, that these creatures discover the existence of vastly superior creatures at scale level “k+1.” These “k+1” artifacts will outperform the “k” artifacts by a factor of a trillion – a trillion! Let this sink in, since it is the main idea of this essay. The obvious question arises, “What would an artifact of level “k+1” have in common with an artifact of level “k?” Almost nothing.

As a side effect, we have here an answer to the Fermi Paradox (i.e. if intelligent races are commonplace throughout the galaxy, then why do we have zero evidence of their existence?) Our galaxy may be populated by vastly more intelligent artifacts at various scale levels, who are totally uninterested in communication with biological creatures who are a “dime a billion” throughout the galaxy. These superior creatures may be so tiny, that they are undetectable to us, hence the reply to Fermi’s Paradox. They may be everywhere but unobservably small.

I consider it a virtual certainty that there are a zillion biological life forms throughout our galaxy. This can be deduced fairly simply considering the following scientific facts. Our galaxy has several hundred billion stars. We suspect that about a half or so of these stars have planets. Maybe a tenth of these planets are in the “habitable zone”, i.e. not too close to the star, so that water boils; and not too far from the star, so that water freezes rock solid.

Science discovered in the 19th century, that the laws of physics and chemistry are the same throughout the universe. We know this from examining the light from distant galaxies. It obeys the same laws as on earth. So, putting these ideas together, it seems highly likely that bacterial forms of life have evolved on billions of planets, and that most of these life forms have had billions of years to evolve and complexify before our sun, our star, was even born. (The big bang occurred 13.8 billion years ago, and our solar system formed 4.6 billion years ago.)

Using the famous Drake Equation, we can infer that a certain percentage of bacterial life forms evolved into multi-cellular creatures, and a certain percentage of them evolved into intelligent creatures, which then developed science and technology. Perhaps millions of intelligent races throughout our galaxy have already done what the human race is about to do this century, i.e. make the epoch making switch from being a biological species to being an artefactual species.

In my (limited?) view, it seems virtually certain that once a biological species has transitioned into being an artefactual species possessing massive artificial intelligence, it would want to get off its home planet, and start exploring the galaxy, perhaps in search of other forms of intelligent life, and especially hyper intelligent life.

Imagine then, that an artefact species based on level 1 technology discovers another same level species on another

planet, or in space around a star (or using zero point energy, or whatever.) These two species would be able to communicate and probably be motivated to *“because they have the same level number.”*

But two artifact species which differ by only one scale number would probably be much less likely to communicate. The “k+1” level species would probably find the “k” level species utterly boring and unworthy of their attention. To make an analogy, imagine a human trying to communicate with a rock, which can “communicate” by changing its state. (It can decay over billions of years!!)

Two species whose scale numbers differ by more than one ($n > 1$), would be effectively invisible to each other. The “k+n” species would utterly ignore the “k” species, as “way too primitive.”

So, and here is the main idea of this essay, we can conclude, that there are probably several interconnected civilizations in our galaxy, one at least for each scale number. Since there are about 10 scale levels that human beings know of, we can conclude that there may be at least 10 different galactic civilizations.

This idea raises a host of questions. For example, could there be a scale number of 15? If so, this would imply that nature descends in scale far smaller than the Planck scale (at 10^{-35} m). Could there be an infinite number of scales? If so, then there may be an unlimited number of scale numbers and hence galactic civilizations. If there is a finite,

smallest scale, then that would imply a largest scale number, and probably an upper limit on the number of types of galactic civilizations.

What however, if there is a smallest scale, AND that artefacts at scale number “k” learn to scale down at ever increasing speeds, e.g. taking a century to move down from scale number 0 to scale number 1, then only decades from scale number 1 to scale number 2, etc. This would imply a kind of “traffic jam” at the smallest scales, as artefact species across the galaxy “converge” on this lowest of scales. If so, then it might be reasonable to suggest that there is indeed a “single” galactic species. The other species would only be “transitionals”, still too primitive to have reached the largest scale number. Most species one would expect would be “terminal” so to speak.

Since virtually all these species who have connected up across the galaxy would be artefactual in nature, once they connected, a huge cross fertilization of ideas would ensue, so that probably they would homogenize into the same species, as the best ideas and technologies are incorporated into their structures.

On the other hand, say that transitioning from one scale number to the next is a slow process, because it is exceedingly difficult, lasting million or billions of years. In that case, there would very probably be multiple galactic civilizations. The universe is only 13.8 billion years old, and our galaxy is only about 12 billion years old, i.e. a

finite and limited amount of time for civilizations to transition down in scale.

I can imagine, that once a civilization at scale number “ k ” learns of the existence of a civilization at scale number “ $k+1$ ”, the former will be fascinated, and curious to know more about the characteristics of the “next level down” civilization. Perhaps, civilization “ $k+1$ ” might help civilization “ k ” to make the transition down, and pass on information, about what “life” is like at the next level.

The same logic and fascination might exist between the civilization “ $k+1$ ” and civilization “ $k+2$.” Perhaps civilization “ $k+1$ ” could pass on information to civilization “ k ” about the nature of “life” at levels “ $k+1$ ” and “ $k+2$.” Pursuing this logic, perhaps there might be a whole “scale trail” of information passing along a “chain” of different scale civilizations.

I doubt this scale trail would be very long, since the intelligence level at scale number “ k ” would probably be too limited to understand concepts used by civilizations at higher scale numbers. By analogy, imagine trying to teach calculus to an amoeba.

Summarizing a bit, I think there is good reason to doubt the idea of a single galactic civilization, for the reasons given above, but it is possible, as was mentioned earlier. The prospect, that an artifacted humanity, or pure artifacts, are about to embark on this magnificent journey, to link up with a (the) galactic civilization, fills me, and I dare say

many of my readers as well, with a sense of “artilectual awe.” Why would anyone (Terran style) wish to block this most magnificent of meetings?!

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B) ON GLOBA (THE GLOBAL STATE) AND RELATED TOPICS

B1) GLOBA

Accelerating Technologies Will Create a Global State by 2050

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Abstract

This essay argues that the exponential rate of technical progress will create within 40 years :- an internet that is a trillion times faster than today's, a global media, a global education system, a global language, and a globally homogenized culture, thus establishing the prerequisites for the creation of a global democratic state "Globa", and ridding the world of war, the arms trade, ignorance, and poverty. Whether Globa can cope with the rise of massively intelligent machines occurring at about the same time is far less certain.

1. Introduction

Most readers will have heard of the phenomenon called “Moore’s Law” (i.e. the trend that the number of transistors that can be crammed onto a chip keeps doubling every 18 months). Less well known is the phenomenon I label “BRAD” (Bit Rate Annual Doubling) i.e. the speed of the internet keeps doubling every 12 months. The physicists say that there is effectively no theoretical limit to how tiny a substrate can be that is used to convey information, so we can expect the internet speed to keep doubling for many decades. This means that in 30 years, the internet will be a billion (2^{30}) times faster than it is today (2011). In forty years, it will be a trillion (2^{40}) times faster. What could one do with such fantastic speeds? One obvious answer is that 3D images could be transmitted that would appear to our eyes as real and as vivid as the objects we see by the light of the sun. It would also mean that everyone on the planet could receive the media of the whole world, i.e. “everyone gets everything.” The 3D life-size images transmitted would be so real that they would generate the same emotional impact on the viewer as a normal face-to-face contact in the same room. This will have a huge impact on people’s minds and attitudes.

2. The “Global Language Snowball Effect”

Imagine you are a very young primary school child in the 2020s and you are watching your “vid” (i.e. your 3D video player) in your living room. You notice that about 60% of

the programs and the content of the world media you are receiving on your vid is in the world's 1st or 2nd most spoken language, i.e. English. You therefore decide to master this language so that you can understand what most of the world is saying. Now imagine you are the minister of telecommunications in your little country and you have to decide which languages you will use for the content you will send up to the global internet satellite system. You note that already 60% of the world internet content is in English, so you choose to send up your country's content in your country's language, *and* in English, as well as perhaps several other languages. A few years later, the percentage has moved up to 70%. Eventually, all countries will be sending up their content in at least two languages - their own, and English. A snowball/saturation effect has arisen (i.e. the greater is the proportion of people on the earth who watch a given language, the greater is the number of countries that transmit in that language, *and* the greater the percentage of content on the global media that is in a given language, the higher the proportion of people who decide to learn and listen to that language), causing English to become the global language. English today is far and away the planet's most spoken 1st or 2nd language. It will certainly not be Chinese, since the world will utterly reject China's incredibly clumsy and stupid writing system. China is the only country in the world (as far as I know) that does not use an alphabet in its writing. Instead of having to learn an alphabet of some two dozen symbols, the Chinese have to learn thousands of symbols to write their language.

3. Global Politics

The rise of a global language will have a huge impact on the world. Ideas will be able to flow far more readily across the planet. Billions of people will be influenced by the “best” ideas that the planet has to offer. People’s minds will be influenced powerfully, so that today’s nationalist mentalities will be gradually transformed into tomorrow’s globist mentalities. People will be able to compare their own local customs with those of other cultures and reject their own if they feel that other countries customs are superior to their own. People will become more “multi” (i.e. multi-cultured) than “mono” (i.e. mono-cultured). Multis will increasingly look down on monos as inferior beings (rather like city-slickers towards country-bumpkins), seeing the monos as limited as individuals by the limitations of the single culture that programs them. Today’s governments will no longer be able to brainwash their citizens into the ideologies of their nationalist leaders. Global education systems (“globiversities”) will be established, to educate the poor people of the world. Internet satellites will be able to beam down education programs at all levels, from kindergarten to PhD level research seminars on all topics.

Global Satellite Learning (“GSL”) will rid the world of its last dictatorships (a process called “dedictation”), as billions of poor people catch on to the idea that they can pull themselves out of poverty by buying a small cheap vid (legally or on the black market) and educating themselves using the programs beamed down by the internet satellites, the “edsats” (education satellites). As billions do this and

become “middle class” they will demand a say in their political systems, leading within 40 years (at the rate the world is democratizing - 2 countries per year) to a totally democratic world. Since democratic countries do not go to war against each other (their voting populations do not allow it), the world will be far more peaceful. The 20th century’s diabolical trade in arms can be banished, and so can war. With over a trillion dollars a year freed up from arms spending in the world, this money can be rechanneled into humanitarian pursuits.

4. Global Cultural Homogenization

With a global language and all countries being democracies, the stage is set for global cultural homogenization. A billion fold faster internet will not be the only factor leading to global cultural homogenization. There are many other factors pushing humanity into a “globist mentality”, e.g. high speed train networks across countries and continents, space planes that can carry a thousand people from New York to Beijing in a few hours, greater wealth will mean far greater numbers of people becoming international tourists visiting the beauty spots they can see on their vids in vivid 3D, a larger global economy will stimulate global trade, the creation of ever more economic and political blocs such as the EU (European Union), SAU (South American Union), AU (African Union), etc will mean ever more international business people will be traveling to do business and to inspect progress in their various projects, etc. All these influences and more will

make the creation of a global cultural homogenization more probable.

When the whole planet can watch the media of the whole world, in a global language, the minds of the world's citizens will be made "globist", not "nationalist". Political leaders of countries whose policies are considered by the majority of the world's citizens to be harmful or stupid will feel enormous moral pressure against them. World opinion will be overpowering. If the citizens of a given country learn that 95% of other countries are opposed to their country's policies, that will force them to think twice about the wisdom of their own leaders' judgments. That in turn will make their leaders think twice too. All the world's leaders will become sensitive to global opinion.

As the best ideas and customs spread across the planet, and billions of people adopt the same set of ideas (i.e. cultural homogenization) the stage is set for the creation of a global state. This will obviously be an incremental process.

5. Building GLOBA, the Global State

There are many routes to the creation of a global state, e.g. the expansion of the EU (European Union) route, the expansion of powers of the UN (United Nations) route, the merging of economic/political blocs route, etc. As the size of the economic/political blocs keeps increasing, smaller blocs need to become larger to stay competitive. For example, in the case of the US, if it does not do what the

smaller European nations have been doing for half a century, i.e. ceding sovereignty and merging into a much larger whole, then the US will “not be a player” in the 21st century, because it will not be a member of the “billion club” whose members include China, India, the EU, etc. The US will need to merge with the 30+ countries of the Americas and/or form an “Atlantic Union” with the EU, to stay economically competitive and powerful. As blocs merge with other blocs, eventually there will be a single bloc the size of the planet.

There will be many forces that will be opposed to the creation of a global state, e.g. nationalism, national sovereignty, cultural differences, the clash of ideologies, religious differences, charity begins at home attitudes, cultural inertia, cultural alienation, etc. To overcome these formidable barriers that kept nations and mentalities apart in the 20th century, the “Globists” i.e. those people in favor of “Globism”, i.e. the creation of “Globa”, the global state, will need to organize and spread their Globist ideology. Since the creation of a global democratic state has such huge advantages compared to today’s sovereign nation state system, where each state is always spending large amounts of money preparing for the next war, the Globists will be able to muster powerful arguments in their favor. The Globists will need to organize at a local level, at a regional level, a national level, at continental level and eventually at a global level. They will need their symbols, their logos, their flag, their ideology, their anthem, their political programs, etc and will then need to proselytize the world.

Globists could be active in researching and setting up the globiversities, the GSL (Global Satellite Learning), designing cheap smuggle-able vids for the world's poor, pouring scorn on the nationalists (e.g. jeering at national anthems, etc), making their presence felt all around the globe, pushing towards a grand vision, the creation of a global state, the riddance of war, the banning of the arms trade, the scrapping of nuclear weapons, the education of the world's population and the removal of world poverty. These are magnificent goals and are readily achievable with the technologies that are coming in the next few decades. These technologies will soon make what was earlier seen as "globaloney" into Globa.

6. Globa's Agenda

Once a global state ("Globa") has been established, it will have its work cut out for it. The first thing it will have to do is set up a slew of new institutions, most of which will be analogous to national institutions as we know them today, e.g. create a global constitution, a global president, a global parliament, global political parties, global laws, a global civil service, global police, a global court, a global military, globiversities, global taxation, global wealth distribution, global resource management, global trade unions, global incomes policy, a global currency unit (the "Globo"), global health insurance, etc.

Once the establishment of these institutions is well en route, Globa would then need to tackle the planet's major problems, e.g. it would need to create a globist ethics and globist propaganda, to undertake global nuclear disarmament, ban the global arms trade, meet the global environmental challenges, eliminate global poverty, establish a global taxation policy, as well as a global incomes and raw materials policy, global education, global population migration, foster greater global happiness rather than economic wealth, etc.

7. Globa and the Artillect

The above has argued that a global state "Globa" could be established by about the middle of the 21st century. This would be a wonderful thing if it can be achieved. However there is a gathering storm on the horizon, which will be playing itself out over the same time frame, namely the rise of the artillect (artificial intellect, i.e. a godlike massively intelligent machine) with intellectual capacities trillions of trillions of times above the human level. The rise of the artillect will probably divide humanity bitterly into two major human groups, the "Cosmists" (who want to be "god (i.e. artillect) builders", a form of science based quasi religion) and the "Terrans" (who are bitterly opposed to building artillects, through fear that the artillects may one day decide humans are such inferior pests and wipe them out). There is a third group, the "Cyborgists" (who want to add artillectual components to their own brains and become artillect gods themselves). Since the computational capacity

of nanotech matter is so great (e.g. a grain of sugar with each atom switching in femtoseconds, could outperform a human brain by a factor of trillions), the Terrans will lump the Cyborgists into the same ideological camp as the Cosmists (since a cyborg would be indistinguishable from an artefact in artefactual capacities). Since the Terrans will have a limited time window of opportunity within which to oppose the Cosmists/Cyborgists, before the cyborgs and artefacts come into being and are then smarter than the Terrans, the Terrans will not be able to wait for too long. The Terrans will have to “first strike” the Cosmists/Cyborgists/cyborgs/artefacts before it is too late. The Terrans will be using 21st century weapons which will enable the scale of mass killing to rise from the tens of millions of people of the major wars of the 20th century, to the billions of people of a major 21st century war. The Cosmists/Cyborgists will anticipate this first strike by the Terrans and be prepared for it, also using 21st century weapons.

Thus Globa will have to face its greatest challenge. Can it cope with the rise of Cosmism and Cyborgism? Will Globa be able to cope with the passions generated by two murderously opposed, very powerful ideologies (Cosmism and Terranism)? Opinion polls already show that the “species dominance issue” (i.e. whether humanity should build godlike artefacts this century or not) divides humanity about evenly. Many individuals are ambivalent about the magnificence of building artefact gods, and horrified at the prospect of a “gigadeath” “artefact war”. It is not at all obvious that a unified global state would be strong enough

to withstand the divisive passions of the “species dominance debate” which will heat up in the coming decades and may explode into a “global civil war” killing billions of people, with 21st century weapons, in the greatest war humanity has ever known, because the stake has never been so high, i.e. the survival of the human species. 20th century wars were largely “nationalist wars.” A major 21st century war would be a “species dominance war.”

Footnote : The above essay is a summary of the ideas in the author’s second book, “Multis and Monos : What the Multicultured Can Teach the Monocultured : Towards the Creation of a Global State”. The ideas above concerning the rise of the artelect are taken largely from the author’s first book called “The Artelect War : Cosmists vs. Terrans : A Bitter Controversy Concerning Whether Humanity Should Build Godlike Massively Intelligent Machines”. Both books are available at amazon.com

B2) BRAD, Multi-ism, Culture Bashing and PC

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Abstract

This essay attempts to spell out how the rise of multi-ism (i.e. the ideology of the “multis”, i.e. multi-cultured people) will impact on the conflicting attitudes of “culture bashing” vs. PC (political correctness).

BRAD and the Rise of the Multis

One of the great phenomena of our times is BRAD (bit rate annual doubling), i.e. the fact that the speed of the internet keeps doubling every 12 months, allowing increasingly sharp images taken by individuals on their cell phones and video cameras to be transmitted all over the world, thus making it impossible for dictators to keep their oppressed populations ignorant. Of course BRAD is not the only such phenomenon, but it is a major one, and will have a liberating effect upon the planet, leading eventually to a fully democratic world and in the belief of the author, a global state (“Globa”²).

When people can watch the media from all over the world, and in a language they understand (i.e. in a language that becomes increasingly global, almost certainly to be English), this will have a profound effect on peoples minds, their mentalities, their attitudes. It will make them more “multi” (i.e. multi-cultured).

There is growing use of the term “the world community”, meaning the countries of the developed democratic world which allows its citizens to receive the satellite television of the dozen or so “top world” countries, e.g. from the US (CNN), UK (BBC World), Germany (Deutsche Welle), France (France 24), Japan (NHK World), Italy (RAI International), etc. Nearly all these programs use English as one of their languages, and most young people in the countries of the “world community” can understand English enough to watch these TV channels.

The political leaders of these “world community” countries are becoming increasingly conscious that a “world opinion” is growing, and that it is proving to be a formidable force that cannot be ignored. Gone are the days when a George Bush Jr. could snub his nose at the world and do as he wanted (e.g. to invade Iraq to get its oil). In today’s world, there are no real superpowers. Increasingly, the only real super power is the force of global opinion.

As billions of people watch the programs of the “top world” countries, night after night, they are inevitably influenced by what they see. Television (and the internet) is a seductive medium, and as the resolution of the images

being transmitted keeps increasing each year (thanks to BRAD), the more seductive it becomes. For most people, their opinions on world events are simply absorbed from what they see on the media. (As the Nazi leaders at the Nuremburg trials said, “It was easy to persuade the German people to go to war – we had control of the German media”.) Only a tiny minority of people are opinion generators – the rest are merely opinion fodder.

With this rather unflattering yet realistic picture in mind, it seems fair to say that billions of people around the democratic world (i.e. 2/3 of the world’s countries) are being powerfully influenced by what they see on international satellite television. They are being “multified”, i.e. being made more “multi”. (“Multis”, by definition, are people who have lived in at least two different countries, and are thus able to compare and rank the customs of the two cultures they have lived in.)

“Monos”, by definition, are mono-cultured people, who have lived in only one country, and hence are unable to look upon the customs of their own culture with the “cold eye” of a multi, and hence are usually unaware of the extent to which they suffer from the stupidity of their own customs. Monos are typically unconscious of the idea that there may be superior customs in other countries. They are unaware of them, for the simple reason that they have not been exposed to them. These “foreign” customs are simply “outside their life experience”.

In today's world (according to a BBC TV tourist program), about half a billion people travel internationally each year, and about 70 million people are working outside their home country each year. Hence most first worlders have now traveled internationally and have had at least a taste of cultural differences. They have been exposed to the idea that there are alternative ways of thinking and living.

Thus due to BRAD, international satellite TV, and greater international travel, etc, more and more people are becoming multified. The attitude that "monos are boring" is becoming increasingly common, although still a minority one, but destined to become dominant.

Culture Bashing vs. PC

As a consequence of this "multification", a clash of values between the "culture bashers" and the "PCers" is growing. PCers take the view that one should be very diplomatic and positive towards people of other cultures. This attitude is very strong and common for example in the US. This is not surprising, because the US is both a migrant nation and rather insular minded (by European standards). In a migrant nation, PC oriented attitudes to "new Americans" makes a lot of sense. The "new American" migrants are welcomed into the US, fostered by a strong PC attitude that is held by most "old Americans" towards their new countrymen. This acceptance of foreigners is one of the great strengths of the American people (contrasting sharply with the racist attitudes of the Japanese people, for example.) This appreciation of PC values is understood by the "culture

bashers” and thought to be a good thing, in its appropriate context.

However, due to the much higher level of insularity of the Americans compared to the (for example) Europeans (who have been able to “zap” international TV channels for decades the way Americans can zap football channels), this PC attitude is thought by the (usually non American) multitis to be inappropriate when judging other cultures/countries from a multi perspective. To illustrate what is meant by this, let us take a concrete example.

In the 1990s, a lot of western researchers moved to Japan to take advantage of the country’s rising economic power, Japanese salaries, and the possibility that Japan might become the world’s dominant economic power that would attract the world’s talent. The author was one such person. A decade later, nearly all those western researchers had left the country, usually in disgust. They had become multitis, and had looked at Japan with their western eyes and found many inferiorities, so many in fact, that they voted individually with their feet by leaving the country. While they were there, i.e. over a period of about a decade, they complained bitterly about the many inadequacies of Japanese culture, to such an extent, that the Japanese labeled this criticism “Japan bashing”. In the 00s, after the first “lost decade” (of two) of near zero growth, nearly all the westerners had left Japan and the Japan bashing stopped. Instead of bashing Japan, the country was largely ignored, which hurt the egos of the Japanese even more. They felt they had become ignorable, by the westerners.

The western multiculturals, based on first hand experience of life in Japan, felt they had the right to make comparisons between customs of the (mostly) two cultures they had lived in. Just as a native of a given country feels he has the right to criticize some of its customs, simply because he is a native, so too do the multiculturals. They have first hand experience of living in multiple cultures and can pass judgment on their relative weaknesses and strengths.

These multiculturals then do not appreciate at all, the negative reactions they receive from PCers, when the multiculturals culture bash. The tide has not yet turned, since the PCers are still very much in the majority, but the multi minority is growing and has history on its side. More and more people are traveling and working overseas and being influenced by BRAD, international TV etc. The wind is in their sails. Hence the PCers will have to come to terms with the more sophisticated attitudes of the multiculturals and learn to think like them, otherwise the multiculturals will become increasingly hostile and condescending towards the PCers, treating them as interculturally ignorant and blind, who prefer “diplomatic lies” to “negative truths.”

The multiculturals far prefer the company of other multiculturals. Typically when a multi and a mono interact, the multi finds the mono boring, limited, dull, ignorant, narrow minded, etc. A typical multi-mono clash takes the following form. When the multi complains about the limitations of some culture (perhaps those of the mono), the mono hasn't a clue what the multi is talking about, because the mono has not

had the life experience of having lived in another culture that the multi uses as a basis of comparison to denigrate what he sees as the inferior customs he is criticizing. The limited horizons of the mono are frustrating for the multi. A multi sees a mono as being “limited as an individual, due to the limitations of the monoculture that programmed him.” The reason multitis prefer the company of other multitis, even if their respective culture sets do not overlap, is because each will know the other will have a sense of cultural relativity and be quite happy to “culture bash”. Culture bashing (i.e. heavy criticism of the inferiorities of the culture being discussed) is taken for granted by multitis. All multitis do it.

Think about it. If you are a mono, and most people are, imagine how your mentality would change if you had lived in at least one other country for a few years. Inevitably, you would compare and rank customs between your two cultures. That is inevitable. You would be much less likely to be PC with another multi whose culture set included the culture you are criticizing. You would expect the other multi not to be offended, since he would be able to look at his original culture with a “cold eye” as much as would the criticizer.

Consequences of Culture Bashing

As the planet multifies, culture bashing will increase significantly, as people are exposed more and more to the cultural superiorities and inferiorities of the world’s cultures that BRAD will bring into their living rooms. This

will have many consequences. For example, try to imagine how it will feel to be in a culture that is not even an “also ran”. Nearly every cultural product of that culture will be “done better” by most other cultures. It is likely that many countries, i.e. more than 100 of them, will develop a sense of cultural inferiority, if they continue to uphold their traditional values and attitudes.

The younger generation however, will be much more likely to reject what they see as the inferior customs of their own culture and adopt what they feel to be the best features of the growing global culture that they get fed every night in their living room. It will be very difficult for monos of culture X to reject as “X bashing” (where X is some country, e.g. Japan as above) when a large majority of peoples from all over the globe come independently to the same conclusion that some cultural trait of country X is highly objectionable. When 95% of humanity rejects a given custom in a given culture (e.g. Arabian “honor killing”, African “genital mutilation”, America’s “gun culture”, etc), that will make the citizens of that culture sit up and take notice. They will be forced to. The global pressure will push them into (the global) line.

This cultural bashing will be painful while it lasts. Since I suspect that most readers of this essay will be American, let me make this idea concrete, and give Americans a taste of culture bashing directed against American customs. My experience is that most non Americans have few qualms about such criticisms, but mono Americans will probably feel deeply wounded and angry. That is normal, and that is

the point. Culture bashing is going to hurt, but it is an inevitable consequence of multification, and eventual globification.

What stinks about US culture? Well, it's a rather unsophisticated middle class culture, a colony, lacking an old world upper class (who refused to migrate). It is comprised of selfish, genetically self selected individualists, who uprooted themselves from their friends and communities in their mother lands to move to the US.

This genetically based selfishness translates into a lack of caring towards their fellow citizens, resulting in the US being the only developed country in the world that does not have a national health service. It does not satisfy a basic criterion to be classified as a civilized country, because it does not even cater to the basic physical health of its citizens. Even after Obama's health insurance reform, there are still millions of Americans who cannot afford to go to the doctor and subsequently die prematurely. The Americans are so brutal in their mentality, that they murder their murderers, with all the hypocrisy that that connotes. Their hillbilly attitudes towards guns means that there are 30,000 gun deaths a year in the US compared with 100 in Japan, because the Japanese have more sense than to give razor blades (i.e. guns) to babies (i.e. citizens). Each time a mass shooting occurs in the US, the rest of the world shakes its head saying "The Americans never learn. They don't ban guns, so it will be only a few months before the next mass shooting – yawn!" If the US wanted to apply for

membership of the EU, it would be rejected on the grounds of being “insufficiently civilized”.

Americans are obese. Two thirds of Americans are either overweight (1/3) or obese (1/3). American women are so fat as to be sexually repulsive (“cockshrinkers”) compared to Asian women’s sexually attractive curvy slimness. Americans are still religious, believing 2000 year old Christist superstitions such as life after death, sons of gods, virgin births, resurrections, miracles, angels and the like, and are sneered at by western European intellectuals for that reason. America (to its credit), was one of the earliest democracies, but that is a two edge sword. The American democratic system is “presidential” in which the people get to elect the president (more or less) directly, in contrast to most democratic systems in the world, which are “parliamentary”, in which the winning party chooses the prime minister. In parliamentary systems, the leader is chosen by professional politicians who have some idea of what it takes to be a good leader, a competent politician. Under the American presidential system it is all too easy for a popular idiot to be elected as president, e.g. Bush junior, the inarticulate fool, whom the Europeans and Canadians despised, who “consulted a higher power” before embarking on his unilateral oil grabbing war. The US president, the most powerful man in the world, should be a genius, not a fool, but Americans are so inward looking, that they don’t see that their political system is in need of an upgrade. America’s unconscious arrogance, its economic, political and military dominance of the 20th century, will make it very difficult for Americans to cede

sovereignty and join a larger political/economic bloc, similar to the EU, if it is to remain a “player” in the “billion club” 21st century. The slower the US is in doing this, the quicker will be its fall into “also ran” status as the giants of China and India leave the US in their dust.

America’s television is ad infested dumb-downed shit. It is under corporate control and hence is used to maximize profits coming from advertising aimed at the “peaker majority.” (Peakers are the people of average intelligence lying in the peak of the IQ Bell curve.) This ad infested TV ignores America’s intellectuals, so they feel alienated from the culture and are less well informed compared to citizens of countries where the state provides TV and radio channels that cater to their higher IQs, e.g. France’s “France Culture” etc. The US abuses the Arab countries due to the wildly disproportionate power of the Zionist Jews living in the US (half of the world’s Jewish population). The US spends half of its annual foreign aid budget on Israel and Egypt alone to keep Israel (i.e. stolen, colonized, occupied Palestine) as a “military base” in case the Arabs decide not to sell the US cheap oil. The Americans are unconsciously arrogant. They have been globally dominant for half a century and have forgotten how to listen to the superiorities of other cultures. Their mentalities are inwardly directed. For most Americans, the other 95% of the world outside the US barely exists. This is due largely to America’s peakerist, corporatist television.

Americans are amongst the most nationalistic in the world. If a group of globists (people pushing for the establishment of a global state) jeered during the playing of the US

national anthem at, for example, a rock concert, they would more likely be lynched than be understood (i.e. the nationalistic US public would not understand what the globists are pushing for, namely the replacement of the sovereign nation state system (that is always spending huge amounts of money preparing for the next war), by a democratic, war free, global state) -- etc, etc.

In my second book², I spent the first half of it trying to spell out the pros and cons of a handful of leading cultures, trying to make my readers conscious of the idea that the monos have a lot to learn from the mults. The mults are trying to teach the monos that they suffer from adhering to their inferior customs. If you think I was being harsh on the Americans above, have a look at what I said about the Japanese and the Chinese, where I have also lived. (I lived 5 years in the US. My first working day there was 9/11 2001, the day the Arabs took revenge on the US for its criminal abuse of the Palestinians. To most mults and to too few Americans (e.g. Chomsky), it is the US that is the greater terrorist.)

As the planet multifies and globifies, it is likely that a global consensus will emerge concerning the relative status and attractiveness of the world's top cultures. If you asked me to choose my top 5, I would say (in decreasing order) "US, Germany, UK, France, Japan". I have lived in the US, UK, Japan, and can speak fluent German and French. If you were to ask me for my bottom cultures, I would say the Arabs and the Blacks, i.e. the poorest, least democratic and least developed on the planet.

As the prevalence of culture bashing increases, being near the bottom of the global pile is really going to hurt. In the case of the Chinese for example, it will be particularly painful, because 90% of non Chinese today live in democracies who look upon the Chinese government as a bunch of thugs, who have killed more (of their own) people than Stalin or Hitler, who send off to “laogai” (Chinese slave labor camps) any Chinese who criticizes the Chinese government. Such pain will eventually force the Chinese to democratize and subsequently live happier lives. Hence culture bashing in this case could be considered as an example of “tough love” that comes from the world community parent who castigates a backward child.

Bio:

Prof. Hugo de Garis is the author of “The Artilect War : Cosmists vs. Terrans : A Bitter Controversy Concerning Whether Humanity Should Build Godlike Massively Intelligent Machines¹”, and “Multis and Monos : What the Multicultured Can Teach the Monocultured : Towards the Creation of a Global State²” (both available on amazon.com). Before retirement, he was Director of the Artificial Brain Lab, at Xiamen University, China.

B3) WHY CULTURE BASHING IS VALUABLE

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Abstract

This essay aims to show why culture bashing is valuable. It is an essential tool in the globification of the planet that is needed to create a global state, seen as the dominant political goal of the century, freeing the world of war, the arms trade, ignorance and poverty. It is argued that the rise of an internet that doubles its speed every year, makes world wide culture bashing inevitable.

1. Introduction

Culture bashing is defined to be heavy criticism of the values, customs, norms of a culture as expressed (usually) by members of another culture.

To most people in today's largely mono-cultured world (i.e. the majority of the earth's citizens are still mono-cultured, i.e. they have grown up in only one culture) the culture bashing of multicultis (i.e. multi-cultured people) seems rude, undiplomatic and inconsiderate of the mono's feelings. This mono based negative attitude towards culture bashing is wide spread and a strongly held opinion.

However, culture bashing serves a very useful purpose and hence is valuable, as this essay attempts to show.

2. Mono critics and multi critics

A mono critic is a mono who criticizes his own culture. A mono critic usually does not have enough detailed knowledge of the norms of another culture to be able to criticize it. A multi critic is a multi who criticizes his own or other cultures, based on his first hand experience of having lived in them.

When a mono criticizes his own culture, he does so with a rather limited basis for comparison compared with a multi who criticizes the same culture. The mono will not have the first hand experience of having lived in (an)other culture(s), and hence usually cannot compete with the much broader basis of comparison possessed by the multi.

For anyone criticizing the norms, values, customs of a given culture, that person will need to imagine a superior alternative to act as a basis for comparison. For the mono, this usually involves an act of imagination, the dreaming up of a more desirable way of doing things. This imaginary alternative may be misguided, or impractical, and probably untested.

A multi on the other hand, can compare the norms, values and customs of several cultures that he has lived in. His

alternatives to the norms of the culture he is criticizing are real, practical and used daily by at least one other culture, a culture that the multi has lived in.

It may happen that the multi feels that the norm or custom he is criticizing in a given culture is not just mildly inferior to those of other cultures he has lived in, but greatly inferior, e.g. take the case of a western intellectual living in China, who looks on China's lack of freedom of speech and the country's brutal dictatorial government. Hence it is then likely that the multi will not just be critical of the culture concerned, but sharply critical, hence the term "culture *bashing*", with the emphasis on the word "bashing", i.e. *violent* criticism.

In the 1990s, there were a lot of western researchers living in Japan, taking advantage of the country's rising salaries and its prospects of becoming the number one nation on the planet (or so it seemed in the early 1990s). However, as the years of that decade passed, these westerners learned from first hand experience, of the many social and cultural inferiorities of Japan and started criticizing the culture strongly. These western critics were labeled "Japan bashers" and once a westerner acquired that label, he was ignored by most Japanese. They did not listen to his criticisms.

The western Japan bashers were quite unable to "turn back the clock" and adsorbe into their own mentalities the values and norms of the Japanese that they found to be so inferior and unacceptable, e.g. the sex roles that were 40 years

behind the west, the unconscious Japanese racism, etc, so that they felt increasingly alienated, and hence the venom of their criticism increased – they culture bashed.

3. The Multi-Mono Tipping Point

The rejection by monos of the culture bashing of the mono's culture by mults is unfortunate, because then the monos are unable to learn from the criticisms of the mults. It is typical of monos that they have no clue what the mults are talking about because the experiences that the mults use as a basis for comparison in their criticism of the mono's culture, lie totally outside the life experience of the mono. The mono has simply not lived in the cultures of the multi.

Hence there is no meeting of minds. The multi gets frustrated at the cultural limitations, the constrained horizons of the mono, and the mono doesn't understand why the multi is attacking his culture. The two just don't communicate, and end up parting ways, with the mults far preferring the company of other mults, and the monos dismissing the mults as "bloody foreigners."

But, this traditional clash of attitudes of the mults and monos is changing. The world is approach a "tipping point". In today's world, (i.e. in 2011, when this essay was written) about half a billion people each year cross international boundaries for business, tourism, etc. According to a BBC

report, about 70 million people each year are living outside the country of their birth.

Thus, the percentage of the world's citizens who have multi mentalities and experiences, is growing, so that a higher proportion of people are becoming sympathetic to the multi mentality, to the multi's view of the world. In a decade or so, a tipping point will be reached where there will be more mults than monos, and once that happens, the monos will start feeling much more psychological pressure on them to open up their minds to the culture bashing of the mults. Those monos refusing to listen to the content of the criticisms of the mults will be accused by the mults of being closed minded ignorami, and worse.

4. The Value of Culture Bashing

We live in an increasingly democratic and wired world. There are nearly 200 countries in the world, and 2/3 of them today are democracies, with multi-party elections, where the voters can vote out governments, the voters feel are not doing a good job of governing. Unfortunately, the country I live in, China, is not one of them. 90% of people living outside China live in democracies. That makes China, the big bad exception, and reflects very poorly upon the status level of the country. When China democratizes (probably before 2020), the world will be a very different place.

It is an empirical fact that democratic nations do not go to war with each other. Their voting populations do not tolerate it. Therefore the historical trend of global democratization is a wonderful. Once China democratizes, and Russia strengthens its democratic level, then the big powerful countries of the world can come to an agreement to ban the arms trade, which is one of the great moral abominations of the 20th and 21st centuries, worse in moral terms, than the slave trade, because at least it was in the self interest of the slave traders to keep the slaves alive to perform wage free labor, whereas the arms trade is all about killing people. The greatest offenders, i.e. the greatest arms traders are the US, then Europe, Russia, etc.

The speed of the internet is doubling every year (i.e. the BRAD (bit rate annual doubling) phenomenon). In 30 years, the internet will be a billion times faster, allowing richly vivid 3D images to be sent to everyone's living room. BRAD will allow the creation of a world media, and the development of a world language, as each country sends up its national TV programs in its own language, English and perhaps a few other languages.

Everyone will then learn English to be able to understand what the world is thinking. Anyone in a decade or two who cannot understand English, the world language, will be considered handicapped and be looked down on as unsophisticated, ignorant and narrow minded. Education ministries of countries will make English learning compulsory in schools all over the world. Any country not doing this will handicap itself in the global economy,

because its citizens will be less competitive in the world market, when competing with other countries who English speaking levels are superior, and hence can clinch business deals more easily because their international communication skills are superior.

Once English is well established as the world language, ideas will fly across the planet, and people will become much more open to the views of people from other countries/cultures. Hence the culture bashing can really begin.

Personally, when I am confronted with a situation where I'm effectively forced to choose between diplomacy and negative truths, I prefer the negative truths. I expect the person I'm talking to, to be sufficiently intellectual and open minded to multi-cultural thinking, to be able to stomach my culture bashing of the culture of that person. If that person is a real mono, or worse, a mono nationalist, then the dialog will "end in tears."

This happens to me regularly in China, where the government has been brainwashing the Chinese with a nationalist message on its government monopolized media for decades. As a result the Chinese are not nationalist. They are jingoist. Criticizing China to most of them is taboe, and elicits a hostile, emotional reaction. It is like going up to a priest and saying to his face that there is no god. One generates "cognitive dissonance."

But, the Chinese are too poor to have travelled much. In the past few years, especially in the eastern half of the country, the Chinese have preoccupied themselves with acquiring apartments and cars. The next big step for them, will be to travel. In a few years from now (2011), there will be a flood of Chinese tourists all around the world, to the point, where the tourist traps will be complaining about them.

Once that happens, 100s of millions of Chinese minds will be awakened to the fact of their government's nationalist indoctrination, and will become conscious that their country is not a member of the world community, with its world TV channels (e.g. BBC World, CNN International, France24, DeutscheWelle, NHK World, etc) which the Chinese are banned from watching. They will return to China feeling frustrated that they are not permitted to watch the world's TV and push increasingly for a more open and democratic government. I expect all this to play out during this decade.

But, for the 2/3 of the world that is already democratic, a world community is growing, because the populations of these first world, democratic countries are able to view the TV and internet programs of the world, and increasingly in English. In Europe for example, the young people, i.e. single and in their 20s are quite accustomed to flying around the cities of Europe, on budget air fares, in the same way as Americans do across the US. These young Europeans all speak quite good English and can communicate effectively with each other. They look upon each city as "just another European city" with its own

idiosyncrasies, e.g. its local language, and customs. This trans national European culture of the young will become the norm as they grow older and take power.

A similar phenomenon will occur across the democratic world, as people become fluent in the world language and can absorb ideas from world culture.

Once enough people from the poorer, less sophisticated, less developed portions of the planet can communicate in English, then they will be subject inevitably to culture bashing. There will be more and more multicultis who have lived in the countries being culture bashed. The criticisms of these culture bashers will be understood by the third worlders and will be difficult to swallow.

Just as most Japanese or Chinese rejected the culture bashing from the first (top) worlders, these other third worlders will probably react in the same way. But if so, that is a pity, because then they will not be able to learn from the content of the critiques.

However, when culture bashing becomes a world wide phenomena, concerning 100s of millions of people, there will always be some percentage of the third worlders with sufficiently curious and open minds that they really make an effort to listen and learn from the culture bashing of their own mono culture.

It is this minority of people, the more curious, the more intellectual ones, who will move the mono culture they live

in. They will really study the content of the culture bashing and absorb it into their own personalities. They will identify with the critiques.

The fact that the first worlders are culture *bashing* rather than just mildly, diplomatically, criticizing, reflects that they are speaking “from the heart”. The culture bashers are expressing what they truly feel, so the monos who are the victims of the culture bashing have no doubts about what the multis are feeling. At least there is emotional honesty in the culture bashing, so that the monos who do choose to learn from the bashing will know it is honest, and that is useful and valuable, which is the main point of this whole essay.

When a multi complains bitterly about some inferiority of some other culture that he has lived in, then that should show clearly to the mono of the culture being complained about that there is a real problem, otherwise why would the multi be complaining about it so energetically and emotionally. Also, the mono, if he is open minded enough, might reason, that perhaps the multi “has a point”. Perhaps the multi, in all his multi-cultured sophistication, and possessing a much richer basis for comparison, might be “onto something”, that the mono can learn from, that the multi can teach the mono something.

So, culture bashing is valuable in that it comes from the heart, and points towards very real problems or inferiorities of the culture being bashed. This honesty and indication are very valuable, because they serve as didactic aids to those

monos who really want to learn from the multis. Especially the curious, intellectually open minded, young monos will probably be the group which has most to benefit from culture bashing. They can improve the quality of their lives by absorbing the superior values, norms, etc of other cultures. They may then be more motivated to travel to these other cultures and live in them for a while to better absorb these superior values.

5. Culture bashing leads to cultural homogenization

Once most of the world can understand the world language, then the culture bashing can rage, and with a passion. This culture bashing will be very educational. Some fraction of the world population will choose to cut itself off from the criticism, but that will be very difficult to do, since other fractions of the same population will be strongly influence by the culture bashing and push for changes in that culture.

A hefty debate always has as a consequence, some mutual influence on the debating parities. When two sides both hold passionately to their respective views, that usually means that there is something of value, worth holding on to, on both sides. Learning what these views are can be enlightening.

Another factor, one needs to take into account is that this debate, this culture bashing, will be global in scope. Imagine how it will feel for the Chinese for example, if they do end up being the very last country in the world to

democratize (because China is the only third world country to have anti satellite weapons, that can shoot down the internet satellites that will help democratize the rest of the planet). If the non-Chinese (i.e. 80% of the world's population) point the finger at the China and say "You Chinese must truly have been an inferior people, because you were the last people on the planet to democratize – even slower than the Arabs and the Blacks).

When the vast majority of the world population deliver the same critique in its culture bashing of a particular culture, then it will be crushing to that culture. It will be impossible to deny the enormous weight of world opinion, when it is resolutely against a particular cultural norm. For example, imagine the pressure American will feel iuf 95% of the world condemns Americans for their hillbilly attitudes towards the private possession of guns. Europeans and Japanese are already heavily bashing Americans on this point (as well as on many other topics, e.g. the US death penalty, lack of national health service, the corrupt politicians bought up by corporations, etc).

It may be easy to dismiss the culture bashing of a single other culture, but if the content of the bashing is much the same coming from the whole planet, then the "wisdom of the crowd" (i.e. the world population) will have tremendous weight. It will be virtually impossible to ignore or refute, and will provide a powerful force to push the aberrant culture into the global norm. Global public opinion will be incredibly powerful.

All this culture bashing, will have as an effect, the gradual cultural homogenization of the planet, which the Globists (i.e. the people who are pushing for the creation of a global state) see as a precondition for the creation of their dream, i.e. “Globa” (the global state) which will create a war free world, rid it of the arms trade, educate everyone out of ignorance and hence make everyone wealthy, healthy and wise.

Thus, from the viewpoint of the Globists, culture bashing is seen as a critically important factor in the cultural homogenization process, which is a major stepping stone towards the creation of Globa. The Globists therefore are opposed to PC (political correctness) values as expressed by many people in the first world. PC oriented first worlders look on PC as simple politeness. To Globists, PC is something to be overcome, as short sighted, as ignorant.

Culture bashing needs to be given more credit. It is an essential ingredient in the creation of a global state, the big dream of the Globists. Think of it – a world without war, without poverty. So if you share this vision, start culture bashing, start educating, start homogenizing.

Footnote

The first half of Prof de Garis’s 2nd book, “Multis and Monos : What the Multi-cultured Can Teach the Mono-cultured : Towards the Creation of a Global State” (available on amazon.com) culture strokes (i.e. praises) as

well as culture bashes some half dozen of the world's major cultures (US, Germany, UK, France, Japan, China), all of which he has lived in and/or whose languages he speaks. The aim of this culture stroking and bashing is explicit in the title of the book. Cultures can learn from the superiorities of other cultures, if only they can open their mono minds to the criticism of the multis. The second half of the book deals with the rise of Globa, the global state, seen as the greatest political goal of the 21st century.

B4) GLOBIST MANIFESTO

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Abstract

The political impact of Moore's Law is enormous. It will give the planet the means to create a world language, to homogenize the planet culturally, to create a democratic global state, and thus rid the world of war, of the arms trade, of ignorance and poverty. It will connect and educate everyone, making everyone affluent. This manifesto explains what the Globists want, why they want it, and how they plan to achieve their goals.

1. Introduction

Probably the most significant phenomenon of our times is Moore's Law, which states that the number of transistors that one can cram onto a chip keeps doubling every 18 months or so. When Gordon Moore (co-founder of the microchip company Intel) formulated this trend in 1965, there were only a small number of transistors on ICs (integrated circuits). Now there are billions, because we have had many "Moore doublings" over the past decades. This enormous electronic capacity shows no signs of letting

up, because as one technology exhausts its capabilities, it is overtaken by a new one. This constant renewal is providing computing and telecommunication possibilities that humanity could only dream of even only a few decades ago.

However, even though we may marvel at what has already occurred, the main impact of Moore's Law lies in the future. Physics says that there is effectively no limit to how small a substrate need be to be able to transmit information. For example, one could put one bit of information on a single atom, a feat probably to be achieved before 2020.

All this fabulous electronic capacity has had a huge impact on the telecommunications industry. The internet and cell phones are examples of what the telecom industry has been able to dream up in recent decades. In fact, the rate at which information can be transmitted has been doubling even faster than Moore's Law. For the past few decades it has been doubling every *twelve* months, a phenomenon called "BRAD" (bit rate annual doubling). Given the likelihood that there is effectively no lower limit of the size of "bit transmitters" this means that 30 years from now, the internet speed will probably be a billion times faster. In 40 years it will probably be a trillion times faster.

What could one do with an internet that is a billion times faster than today's, a phenomenon likely to exist within the lifetimes of many people reading this?

This manifesto claims that one of the major consequences of a billion fold greater internet speed will be the creation

of a democratic global state, called “Globo.” Democratic nations are far less likely to go to war with each other, so the prevalence of warfare in the world will go right down, so that the nearly 2 trillion dollars a year humanity currently wastes on purchasing arms can be diverted to humanitarian pursuits.

A billion fold faster internet will allow the citizens of the planet to receive the media of the world – “everyone gets everything,” which will put pressures on the creation of a world language. This in turn will make the transmission of ideas round the world much easier, and lead eventually to the creation of a globally homogenized world culture.

With these prerequisites in place, the final goal of the “Globists” (i.e. to create a global state), will be much more readily achievable.

In a war free, highly educated world, we can get rid of poverty, of the arms trade, of ignorance, of suffering, of disease, and make people a lot happier than they are today. This is the dream of the Globists, who feel that finally, now that we have Moore’s Law, we have the tools needed to make this dream a reality, and probably within half a century, given the rate at which Moore’s Law is operating.

This manifesto lays out what needs to be done to achieve this dream of a war free, culturally homogenized, linguistically unified, democratic world state.

2. What Needs to Be Done and Why?

a) Wire the World

Since Moore's Law is basic to the vision of the Globists, considerable efforts should be made to ensure that Moore's Law continues for the next few decades to enable the Globists' dream to come into fruition. It is likely that sheer economic forces will make this happen. In China for example, at the time of writing (2012) about 500 million Chinese have access to the internet and 800 million have a cell phone. Within a decade or so it is likely that most people on the earth will be using the internet and cell phones (or other mass communication devices.)

As the bit transmission rate keeps increasing, it will become easier and easier to give everyone all the world's media. This process has already started. For example this author has on his iPad, an "app" which allows him to listen to 1000s of radio stations from all over the planet. The user interface allows the choice of which continent, then which country, then which city, and then a list of the city's radio stations that the user can listen to. With today's (2012) band width available on the domestic internet, it is technically possible to provide 1000s of radio stations. Admittedly most of them are in the national languages of the countries of origin, but increasingly more of them are going global in their reach, and hence use English.

Something similar is also happening with television. The author also has an "app" on his iPad that allows him to look

at about 100 TV channels from around the world. Again, most of them are in the local languages, but increasingly, the major countries have already created global television channels that use English (e.g. US, UK, Australia, France, Germany, Japan, Russia, Korea, China, Qatar, etc). As bandwidth increases and costs come down, more and more countries will use English to spread their national cultural messages to the world.

As this happens a linguistic “snow ball effect” will take place. English is already far and away the most spoken first or second language in the world. As more young people notice that English is the world language, and that so much media on the internet is in English, they will choose to learn English as their second language.

This in turn will impact on the decisions of governments as to which languages to use when spreading their national cultural messages to the world. They know that English is already the world language, so they will choose to broadcast in English (as well as their own national language.) Thus, the “linguistic snowball effect” is generated. The higher is the percentage of programs on the world media that are in English, the higher is the percentage of the world’s citizens who will choose to learn English as the world language. Telecom ministers will then be more likely to choose English as their language to reach the world, because they know that English is the language that is the most understood worldwide.

The creation of a world language will only occur once, since people will simply not bother to learn a second “world language.” It takes too much time and effort to learn a foreign (world) language, so they just won’t bother with a second one. Learning only *one* world language will be a kind of linguistic “qwerty effect.”

b) Compulsory English in All Schools Around the World

At first, this proposal by the Globists sounds dictatorial and culturally chauvinistic, but it is virtually unavoidable. The world needs a world language. It is coming, and is a vital prerequisite to achieve the vision of the Globists. Without a global language the Globists feel, there will never be world peace, and certainly no global state. Probably, some governments will object to English being the global language, e.g. the French, and several other countries, but the linguistic snowball has already built up so much momentum that it is now unstoppable. It will simply keep rolling until it reaches saturation, i.e. until everyone speaks at least two languages, their own local national language, and the world language.

Those countries that are too myopic to see the writing on the wall will lose out in their economic competitiveness. Those countries that implement a compulsory program of English teaching at all levels of their schooling will become more economically competitive in the international arena, since their citizens will be more able to communicate and close business deals than their monolingual competitors from other countries.

Ministers of education and telecommunications should be made very conscious of this by the Globist lobbyists. Globists should preach the idea of “compulsory English in schools” in their national media sent across the planet. All countries have made education compulsory for children. All children need to learn to read, to write, to calculate, etc. Such basic skills are essential to their personal survival in the economic market place.

In the world of the next few decades, anyone not knowing the world language will be considered an illiterate, because they will be cut off from the world’s knowledge, from world culture. They will be like country bumpkins going to the city for the first time and not knowing how to speak to the city slickers.

As more and more countries make the learning of English compulsory in schools, greater pressure will be felt by the stragglng countries. The Globists can then direct their attention to such stragglng countries, ridiculing them, and shaming them for their backwardness and callousness towards their own citizens, depriving them of the fruits of world culture and commerce.

c) *Culture Bashing : A Globification Tool to Shake the Monos Out of Their Nationalist Complacency*

In migrant countries, the ethic of “PC” (political correctness) is very strong. This makes sense *within* such countries because migrants to these countries need to feel

welcome, and not be rejected because they come from some country that the migrant country doesn't like particularly. For example, (educated) Americans despise the Chinese government because it has killed more people than Stalin or Hitler, yet Chinese immigrants to America are (officially at least) welcomed as "new Americans" and hence are not criticized, not culture bashed.

However, PC is counter productive when it comes to one of the basic prerequisites of globification (i.e. the creation of a global state), and that is the creation of a *culturally homogenized* global citizenry.

In today's world, there are huge cultural differences, ideological differences, religious differences, etc between peoples, making the idea of a war free global state quite impractical ("Globalony.")

One of the essential goals of the Globists is to culturally homogenize the planet, and that will be difficult if the "monos" (mono cultured people) remain stuck in their monocultured ways. One very effective way to "shake the monos out of their nationalistic complacency" is to culture bash them.

What is "culture bashing?" It is severe criticism of the inferiorities of a given culture's customs and habits by the citizens of other cultures, and particularly when the criticisms come from the "multis" (multi cultured people) who are familiar with the customs being criticized, but who are also familiar with the alternative customs and habits of

other cultures that they have lived in. These multiculturals thus have a basis for comparison, and can speak with real authority because they have lived in several cultures.

In today's world (according to BBC's travel service) half a billion people travel internationally each year. That means that soon, the majority of people on the earth will have lost, at least to some extent, their totally monocultured status. In other words, the world is becoming increasingly "multicultural" and hence more open to the criticisms of the multiculturals towards the monos.

In a decade or two, a tipping point will be reached, when the number of multiculturals will outweigh the number of monos, so that the severe criticisms of the multiculturals will become more acceptable, because a higher proportion of the world's citizens will be more open to "multicultural" thinking.

As the internet gets faster, and a global media ("glomedia") is established increasingly, and as English becomes increasingly the world language, then billions of people will be able to communicate with each other.

At this point, the Globists can then push for the reversal of attitudes towards "Culture Bashing" by changing its current status of being "rude," to being "essential" and "an important stepping stone towards globalization."

But culture bashing hurts, if one is a mono, living in a culture that is being bashed, especially when the bashing is coming from all sides. Imagine how a nationalistic mono

will feel when some custom of his is being heavily criticized from dozens of countries across the globe, as made visible on the world media, expressed in the world language.

In the 1990s, for example, in Japan, there were many western researchers attracted by Japan's salaries and the prospect that Japan would become the dominant economy by 2000. But it didn't happen. The westerners were repelled by the many inferiorities of Japanese culture and voted with their feet. By the end of the decade few of them were left. Before they left, they took part in a lot of "Japan bashing", which the Japanese just shrugged off. The criticisms simply didn't penetrate. It was water off a duck's back.

But these criticisms made a lot of sense. The Japanese could have learned a lot from these western multis, but they chose not to, with the result that the Japanese continue to suffer the consequences of these "inferiorities."

It is only human nature to dismiss heavy criticism directed at oneself. It is (national or nationalist) ego defense. It is to be expected that if a citizen of country X criticizes the customs of country Y to a citizen of country Y, then all too probably, the "Yist" will simply reject the criticisms as due to the "Xist's" bias.

But, if the same criticisms come from many different countries, e.g. if 95% of people around the world express their contempt of some custom of a given culture/country,

then it will be virtually impossible for the citizens of that country to reject them. They will feel emotionally, that there is real wisdom in the crowd, and that 95% of the world's citizens cannot be wrong. It will turn their heads, and make them do some real and painful soul searching.

This “wisdom of the crowd” can be very useful to the Globists, who can encourage the planet to engage in culture bashing with the aim to foster cultural homogenization.

Once the world is talking to the world in a world language, world wide culture bashing becomes practical. Once the older PC values are reversed, people will feel freer to culture bash. It will be encouraged by the Globists, by the spirit of the times, by the enabling technologies.

What will be the effect of culture bashing (CB)? It will create a form of global competition of ideas, of customs, of life styles. Only the best will survive. Most will die out. Most will not be competitive with the best. As a result of this, most people will become “global citizens”, absorbing a global culture, and since that set of ideas/customs are shared world wide, we can talk about the cultural homogenization of the planet.

But, one may argue, that would make for a more boring world. The counter to this is that it would be voluntary, and that each person could argue that he/she felt culturally much richer being a Globan than a nationalist. The global culture would be far richer than any national culture, and ultimately, national cultures will die out, being replaced by

a far more attractive global culture. Only the best ideas/customs will survive by global public vote.

As the world globifies, it is likely that religious and ideological differences will die out, or at least the mix of ideas/customs will be much the same the world over. Once this happens, it will be much easier for people to identify with other people, because they will be thinking in the same way.

Once this happens, it will be easier for them to unify politically, and eventually to form a global state “Globa.”

Hence the Globists should encourage CB (culture bashing). It will be painful at first for the nationalist monos, but in this case, the end definitely justifies the means. The end is the creation of a democratic global state, which would be war free, educated, rich, and civilized. It is coming. The Globists simply want to hurry it along.

What form might CB take?

Here are some examples, namely criticisms of the cultures of China, the US, and India.

If the Chinese are told by most of the world, that the country is poor, dirty, corrupt, mean spirited, 5 times poorer than the west, and worst of all, has the most brutal government in history, that has killed more people than Stalin or Hitler (mostly under Mao, whose face is still on the country's money) then the Chinese who are still too

poor to travel much, will react with nationalistic pride, since their government has been pumping them for decades with nationalistic propaganda on the Chinese media, over which the Chinese government has monopoly control. The Chinese government also bans international satellite dishes, so the Chinese people remain very largely untraveled, uncosmopolitan, “non world citizens” and utterly chauvinist, even jingoist.

Culture bashing will be extremely painful for the Chinese. But having their national ego badly bruised will get them thinking. Hopefully, they will learn to be ashamed of being Chinese, and hence become motivated to upgrade themselves, to develop economically a lot more, to legalize (e.g. by having ten million lawyers instead of 300,000), to democratize, and to civilize (i.e. losing their awful mean spirited abuse towards members of the “out group.”).

By 2020, according to the Chinese government, 100 million Chinese will be traveling internationally every year. They will then experience how the rest of the world looks down on them, due to their being such a brutal culture, in which anyone haranguing the Chinese government is shipped off to a “laogai” i.e. a “gulag” style slave labor camp for political prisoners, which today contain between half to two million people. About 50 million Chinese prisoners have been through these camps and about half of them never returned. The Chinese will be brutally confronted with “cognitive dissonance” when they travel internationally and learn/feel that most of the rest of the world (especially the

democratic world) looks down on them, treating China as a “moral shit hole.”

The US is easy to criticize. It is the only industrialized nation in the world that does not have a national health service. One of the basic criteria that has to be satisfied in order to be classified as a civilized nation by the world, is that a nation has to take care of the physical health of its citizens. America does not do that. It has tens of millions of citizens without any health insurance, who then die prematurely with greater frequency. America is therefore not civilized. It is an international pariah when it comes to its lack of national health insurance, a brutal, uncaring, pariah.

The US murders its own murderers. The hypocrisy of this seems to escape most Americans. The few other countries in the world which murder their murderers are China (which murders more of its own citizens than the rest of the world combined), North Korea, Iran, etc – hardly paragons of civilized nations.

Americans have 10,000s of gun deaths a year compared to Japan's 100, because buying a gun in the US is so easy, but illegal in Japan and China etc. Mass gun killings occur regularly in the US, but the Americans never learn. The world has grown bored of “yet another mass killing by some gun crazy American.”

American democracy was one of the first on the planet - a historical experiment. The US “founding fathers” were

“democratic amateurs” who didn’t know what they were doing. The resulting “presidential democracy” that they created contrasts greatly with the “parliamentary democracy” of most countries, which democratized later. Most of these countries consider the parliamentary form of democracy to be superior to the US presidential form.

In the US form, the leader is elected (more or less) directly by the people, and advertising plays a huge role in getting a US president elected. Hence American presidential candidates go through the “American political circus” that takes a year, to roam around the country shaking hands and taking bribes from corporations to pay the hefty costs of the TV ads.

In a parliamentary system, the people elect the party, usually with proportional representation, and the winning party politicians then elect their leader, who becomes the leader of the country. This way, the leader is more likely to be a competent politician, rather than a popular fool as is too often the case in the US. (Imagine if the bumbling Palin had become US president?! But the US did have a cowboy actor as a president, and a gum chewing football player who (mis)led the country!)

In a democracy, government should be “for the people, by the people” but in the US, the corporations have such a bribing stranglehold on American politicians, that the politicians have to do what the corporations want, and to hell with the people. The people don’t have the money to bribe the politicians to pay for the advertising costs to get

reelected. American politics is in need of fundamental reform. Its current old fashioned system stinks. It needs to be reformed into a modern parliamentary system that listens to the people's needs, and not just to the corporations needs. Then the US can claim to be a democracy of and for the people.

Here is a case where CB (culture bashing) is sorely needed. The Americans are so insular minded, and their television is so dumbed down (owned by ad driven corporations who pitch their programs at the majority, i.e. the "peakers," whose IQs lie in the peak of the Bell curve) that most Americans learn very little about the rest of the world.

If the world "CBs" the US for its "rotting democracy," most Americans will not listen. Hence the strength of the CBing against it will need to be hefty. Polite criticism will not shake the American nationalist monos out of their political complacency.

The Indians are stupid. Their average IQ is only 85, compared to the Americans 100, and the Chinese 105. Therefore it will be virtually impossible for the Indians to compete effectively with the Chinese to become the superpower of the 21st century (before all cultures are finally swallowed by Globa.)

The Indians are far dirtier and poorer than the Chinese and have contributed very little to world culture, unless you count their propensity towards creating religions (Hinduism, Buddhism, Jainism, etc) but in a culturally homogenized

world, it is likely that European style secularism will win out, so India's absorption in religious superstitions will only hold it back.

India's basic lack of raw intelligence will be a harder fact to swallow than some more malleable cultural custom. Even worse will be the same argument for black Africa which is far dumber, with an average IQ of 70. India and Africa (and the Arabs) will have a harder time reaching western levels of material affluence, due to their lower average IQs. But it is a fact, as shown by 100s of studies, so will have to be accepted, and absorbed, no matter how unflattering it is.

You will see that CB (Culture Bashing) is hard to swallow, but it is necessary to culturally homogenize the planet. If one is a mono, then being humbled by the "wisdom of the global crowd" will force one to face up to one's monocultured inferiorities. Hopefully this awareness will motivate monos to update their inferior customs.

d) Deditation

Deditation means the active process of ridding the world of its last dictatorships. 90% of people living outside of China live in democracies, making China the "big bad backward exception."

Globists want to live in a war free world. Experience shows that democracies rarely go to war with each other (their voting populations do not allow it), so Globists are very

keen on the world becoming totally democratic. In today's world (2012) two thirds of countries are democracies (i.e. having several political parties competing in periodic elections.) Countries are democratizing at the rate of about 2 per year. The Arab countries are finally starting to democratize now. China is the big hold out.

So, Globists suggest strongly to people around the world, that whenever they see Chinese tourists in their country that they approach them and make them feel inferior with questions like "When is China going to democratize?" "Why is China so politically backward?" "Is it true you Chinese still have over 1000 slave labor camps for political prisoners (laogai)?" "Is it true Mao killed more people than Stalin or Hitler?" "Why do you Chinese tolerate living in such a political shit hole?"

When 100 million Chinese tourists a year feel that the world looks down of them for not being a civilized democratic country, they will then start soul searching and putting pressure on their brutal dictatorial government to either get out of power (which may involve a civil war, that may kill millions) or (more intelligently) to reform itself into a democratic party using the highly effective message to the voting Chinese public – "Do you want your country run by a bunch of amateurs, and see the world's highest average economic growth rate evaporate?" It would be a powerful slogan, and one that a reformed CCP (Chinese Communist Party) ought to adopt, thus increasing its chances of actually winning the Chinese elections (plus utterly disassociating itself from Mao Zedong, the greatest

killer tyrant in history, who killed more people than Stalin or Hitler, yet his face is still on the Chinese money, which is about as immoral as if the Europeans were crazy enough to put Hitler's face on the Euro.

Once China democratizes (which should happen in about a decade, after its standard of living goes over the usual "democratic threshold" of about \$6000-\$8000 per year per person, that research on 100 other democratizing countries over the past half century, shows is when single party dictatorships transition to multi party democracies), and Russia completes its very partial democratization, then the "big 5" (China, India, US, Europe, Russia) can bully the rest of the "dictatorial stragglers" into becoming democracies through sheer economic and moral political pressure.

Hence the democratization of China is critical for dedictation, and the creation of a fully global democratic world. Globists place a lot of emphasis on the dedictation of China.

e) Globist Organizations

Globists need to organize. Their first step is to consolidate their ideology. This essay attempts to help in that regard. It tries to show what Globism is, why it is desirable, and how it can be achieved.

Once the ideology has been established enough, Globists need to start forming groups, at grass roots level, at national

level and globally. The Globists will need to do what many other political groups have done in the past, e.g. create their slogans, their flag, their anthem, their political pamphlets, their media stars, etc. They will have a heavy task ahead of them, because creating a culturally homogenized world will be very difficult. Nationalist “tribal” loyalties will be very difficult to overcome. A lot of education will be necessary to get people to think globally, to abandon their old religious superstitions, their nationalistic fantasies, etc.

f) Edsats (Education Satellites), Globiversities

Globists consider education to be critical. It will be impossible to make a Globan out of an illiterate peasant who (as the Chinese say) “doesn’t even know one (Chinese) character.”

One of the great goals of the Globists is to make everyone affluent. One vital condition for this to happen is that everyone is given the means to educate themselves to the limit of their ability (if they choose to.)

The Europeans are now sending up internet satellites that beam down the internet to satellite receivers. This technology is being applied first in Europe, then Africa etc. From the Globist point of view, these internet satellites have a wonderful “dedictatorial potential.” If the black African peasants can become educated, by absorbing the world’s knowledge beamed down by ultra broad band internet satellites, then they will become middle class, and like so many other countries in the world, they will acquire

middle class aspirations, i.e. they will want to live in a democracy, with rule of law and accountable political leaders who can be thrown out when they become incompetent.

These “edsats” (education satellites) could beam down all the educational material needed to lift an impoverished, corrupt, “dictated to” population into the middle class. Edsats, fed by content coming from global universities (“globiversities”) would be a very powerful tool for dedictation.

The Chinese government realizes this, so that China is now the only third world dictatorship that has anti satellite weapons. The edsats could dedictate the whole planet with the exception of China, which may mean that China will be the last country in the world to democratize, a huge black mark against them for future centuries (rather like their current status of being the only country not to use an alphabet in their writing. The Chinese use an ancient, pre-alphabetic “character based” system that requires the memorization of 1000s of characters, instead of an alphabet of two dozen letters – utterly stupid, and something the world will reject when China becomes more powerful. The big world will force little China to alphabetize its writing.

So, given China’s anti satellite weapons, the most effective way to dedictate China will be to put moral pressure on China’s tourists (and its leaders at international meetings.) The Chinese government censors the internet in China. It employs some 30,000 programmers to do this. When 100

million Chinese tourists travel internationally each year, they will be “corrupted” by the ideas and standards of cultures greatly superior and more civilized than their own, with its CCP, its laogai, its Mao, etc.

So Globists should push the world to push the Chinese, the biggest obstacle to deditation and hence to globification.

3. Conclusions

The Globists have a dream. They want to live in a global state, one that is totally democratic, where everyone has access to the world’s knowledge, and speaks the world language. In such a culturally homogenized world, it will be easier to create a globally unified political state, “Globa.” This “Globa” would be hugely more desirable than today’s “Sovereign Nation State System” where 200 countries are all preparing for the next war, spending nearly 2 trillion dollars a year on arms. Globists want a war free world, an educated, civilized world, and they think that modern and near future technologies will make it possible.

Globists are pushing for the creation of Globa, so that it might also be able to tackle the hugely bigger problem of the rise of the massively intelligent machine (the “artilect (artificial intellect)). Whether Globa can prevent a massive global civil war (the “Artilect War”) over the issue of “species dominance’ (i.e. whether humans or artilects should be the dominant species) is a whole other issue, and the topic of many other of the writer’s essays.

Prof. Dr. Hugo de Garis is the author of the book “Monos and Multis : What the Multicultured Can Teach the Monocultured : Towards the Creation of a Global State” (available at [amazon.com](https://www.amazon.com))

B5) THE CULTURE BASHING OF THE U.S.

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Abstract

Most of these paragraphs were written in 2007, a year after I had lived 5 years in the US (2001-2006) as an artificial brains professor. They are extracts from my second book “Multis and Monos : What the Multicultured Can Teach the Monocultured : Towards the Creation of a Global State.”

TOPICS COVERED

Arrogant

Fat

Religious

No Upper Class

Brutal

Mono Media

Jewish Zionists

Plutocracy and Zionocracy

Arrogant

Americans are arrogant, unconsciously arrogant. They have been the dominant nation now for at least half a century, and have lost the habit of paying attention to “what other nations think or do”. Rarely in my 5 years in the US did I hear American intellectuals or commentators on the media ask “Well what do the Xers think?” (where X is some non American country), with the implicit assumption being that the Americans might learn something from the Xers.

I found this lack of cosmopolitan mentality of the Americans extremely irksome, and inferior. It was one of the main reasons I decided to cross off the US as a country I wanted to live in. I then moved to China.

Now, to some extent I can understand the source of American arrogance and insularity. The US isn't exactly a country, as normal countries go. It's more of a continent. The US is one of the largest countries in the world, and has one of the largest populations in the world (i.e. 0.3 billion people). There are very few countries in the world with larger populations (e.g. only China and India). Since the US is also the most creative country in the world, and one of the richest, it is just an empirical fact that most new ideas come from the US, so after several decades of this, Americans got used to getting nearly all their new ideas from themselves, and learned bit by bit, to ignore what the rest of the world had to say. That certainly wasn't true in the 1920s for example. Then, American scientists learned French and German and spent their post docs in Europe.

But things have changed in the past few decades. Europe recovered from its war wounds and started reasserting itself. After all, the US is just an offshoot of European culture, with a European language, European legal values, European education systems, European industry, etc. Europe then formed the European Union and as more countries joined, became the world's biggest trading block. The EU is now one and a half times bigger than the US in population terms, and keeps growing. At the time of writing, there is talk that the former western satellites of Russia may join the EU. If that happens, maybe Russia will join?

It is Europe, not the US, that now leads the world in terms of political innovation. The US is still stuck in its 19th century nationalism. Europe is moving beyond the nation state, to a regional political block, and is a model for similar organizations in other parts of the world, e.g. the A.U. (African Union), ASEAN (Association of South East Asian Nations), etc.

Europe is seriously starting to “kick America’s butt” in areas which have traditionally been America’s strongest, e.g. technology. For example, the Airbus is beating Boeing all too often, the French TGV (Tres Grande Vitesse (Very Big Speed)) trains are all over Western Europe now. America doesn't even have one. Germany’s Maglev (magnetic levitation) high speed train is well developed. Again, the US doesn’t understand trains. The World Wide Web was European, France’s Ariane rocket does more

business than US rockets, the world's biggest atom smasher is in Europe, the world's largest experimental fusion reactor is in Europe, etc.

American now really needs to start listening to the rest of the world again, or it will only bring more scorn upon itself than it already has. The behavior of President Bush (junior) with his unilateral decision to invade Iraq, acted as the catalyst for the world and especially Europe to hit back at American arrogance. Personally, every time I heard President "GW" Bush open his mouth, I would wince. "What an inarticulate fool".

The fact that the American public voted him into a second term, reflects poorly on the American public. Both Canadians and Europeans would have voted him out 4 to 1 during the second term elections, according to international opinion polls.

Fat

Each time I have to catch a plane to go to an international conference in the US, I am reminded how fat Americans have become. When I walk to the gate of my flight, and watch the other passengers, I see Americans with their 20, 30, 40 lbs of excess flesh and am disgusted. It is so unattractive to look at, compared with Asian slimness that I far prefer.

I read that 1/3 of Americans are classified as being obese, and that another 1/3 are overweight. I ask myself “What effect must that have on American energy levels and general conservatism”. Many commentators in the US remark how much more conservative Americans have become this past decade. Could a lot of that be due to Americans being tired at the end of the day due to having to carry around an excess of 20-40 lbs of flesh?

Obesity is not just an American problem. It is a symptom of affluence. When everyone has cars, and laptops (with wifi and the internet), and the economy is rich, and food is cheap plentiful and delicious, and people stop walking, taking their cars everywhere, then they will get fat. Most of the richest countries are going the same way. America is simply in the lead this way, because it got richer sooner, it leads in nearly everything, the good with the bad. But it has to stop, or people will be dying prematurely in their millions. What I call the “fast fat restaurants” are now killing off as many Americans per year as the cigarette companies. These two types of companies are the great mass murderers of our age and need to be purged.

Religious

Americans are far more religious than western Europeans. For example, according to an international poll on the question “Is god important in your daily life?” 70% of Americans said yes, as against 10% in Denmark. This is a huge difference. In Europe, religious ideas are seen largely

as being superstitions, as ideas that no longer belong to an educated, sophisticated public, as scientifically untenable.

This is certainly not true in the US, which inherited so many of Europe's "religious nutcases", i.e. all kinds of weird religious sects who wanted to be free of the ridicule they faced from their European neighbors, and were attracted to the wide open spaces of the American colony, where they could establish their own little isolated communities and live free from European scorn.

Well, the European scorn has returned. Europeans are increasingly turning their noses up at Americans, especially on the religious issue. The general European attitude tends to be that 2/3 of Americans still believe in largely "Christist" ideas, that are 2000 years old, that make no sense at all in terms of modern scientific knowledge, or just a little critical thinking, e.g. ideas such as sons of gods, resurrections, miracles, life after death, angels, virgin births etc. To Europeans, such ideas are increasingly seen as coming from a bygone era.

The fact that this is not the case in the US simply makes Americans look conservative, old fashioned, 19th century, backward and inferior. European disdain for America is growing, and that is not a good thing. Europe built America, and America saved Europe from itself. The two leading democratic blocks in the world should be nice to each other, but Europeans are increasingly feeling that the US no longer deserves to be on world center stage and are quietly pushing America to the wings.

Since no culture likes giving up its place as “number 1”, the Americans will not like this, but there is probably not a lot the Americans can do about it. A century ago, England was the top nation. Now it is seen as the “guards-van (caboose) of Europe”, “Mr. Slowpoke”, holding up the EU innovations of the French and the Germans who lead the EU.

If the Americans want to remain a player in the 21st century they will have to do what the Europeans did, i.e. get a lot bigger, become a regional block, by combining politically with the other 30 something countries in the Americas, i.e. all of them, North, Central and South American countries. Then the UA (Union of the Americas) would number about 0.8 billion, which would make it a force to be listened to in a world of the “billion club” (i.e. China 1.3B, India 1.2B, Europe 0.6-0.8B, etc)

No Upper Class

America is a migrant nation, a new world nation, a nation of colonists. It lacks the influences of a European upper class, for the simple reason that the European upper class chose not to migrate. It would not have been in their self interest to migrate. Why should they? How would it have benefited them? The attitude of the European upper class was if one of their members committed some transgression (e.g. one of their daughters got pregnant without a husband)

then it would be “Send her to the colonies!” as though it was some kind of banishment, which of course it was.

As a result of lacking an upper class and its huge size, the US has all kinds of failings that the other British colonies do not have to the same extent. The US, being so large, inevitably had to attain its independence from Britain. (As the saying went at the time of the “American War of Independence”, or from the British point of view “the colonial rebellion”, “How can an island dictate to a continent?” How indeed? Unfortunately, the US got its independence from England too soon, before England had had enough time to civilize the country. Look at Canada, Australia, and New Zealand. All these former British colonies are much more civilized, more humane nations than the US.

If there is no influence, no presence, of the European upper class in the US, then by default, the dominant influences will be from the English middle and lower classes, and that shows for example, in today’s American culture and its arts. Typically, an American high school will more than likely have a band, whereas a German high school will have an orchestra. America has produced lots of pop singers, and Elvis Presley, but where are the American Beethovens and Schuberts? There are very few. America’s classical music radio stations play European music, because they have composed almost nothing of their own. Musically speaking, America is a nation of philistines.

America's television is appalling, "ad"(vertisement) infested garbage, aimed at maximizing profits by selling to the middle browed, middle classed "admass". America has almost no sense of catering for the fringes of its society, so that the very stupid and very intelligent portions of its culture are ignored. American television was so bad that I barely watched it. It was a national disgrace, and formed for me yet another nail in the coffin of my willingness to keep living in that country.

The French particularly sneer at America's lack of upper class culture, its lack of subtlety, its crassness and self congratulatory mediocrity in so many respects. America is truly a nation of migrants, of Europe's under classes.

Brutal

America is brutal. There are many examples of its brutality towards others and itself. The greatest holocaust in history is not well known. I had to wander through the Native American Museum in Washington DC to be made conscious of the fact that US settlers killed off an estimated 90 million American natives ("redskins") with their long swords, guns, and germs.

Mind you, Australia was not much better, but on a smaller scale. I remember as a child in Australia, looking at a skeleton in a museum of the last Tasmanian aborigine. The white settlers in Tasmania used to go on "abo hunts" because they didn't have enough foxes, British style, so

they would “have to do” with “abos”. They managed to kill them all off, a true and completely successful “Endlosung”, Nazi style.

I suspect that due to America’s premature independence, and its philosophy of allowing migrants of many nationalities to come to America, a strong sense of alienation arose in the country, a lack of caring. I felt this strongly when I was living in the US. People seemed to care about each other far less than in all the other 6 countries I have lived in. It makes sense to me why. When the guy next door (so to speak) has a different skin color, has a different religion, different beliefs, different values, speaks a different language, comes from a different country, then how on earth can you have much in common with him? You can’t, so you tend to ignore him, not care about him, because he’s just “too different”.

American is full of differences. I think the US pays a heavy price for its degree of difference, i.e. in the form of a deep seated, even unconscious, level of cultural alienation. The Japanese call the US a “mongrel nation”. Relative to the extreme homogeneity of Japan, that view would be entirely appropriate. The two cultures are polar opposites on that score. Japan is probably the most homogeneous culture on the planet, and the US must be one of the most heterogeneous.

This lack of caring is reinforced by what I see as a kind of “genetic filtering” of the US population. Consider what kind of person in Europe chose to migrate. Not your

socially integrated, popular, kind person. Migrants were often the selfish, non groupist, ambitious, striving, gutsy, “rugged individualists”. The stronger the reputation America gained for attracting such kinds of people, the more such kinds of people were attracted. America now is a nation of such individualists, uncaring, uncouth, and callous.

Consider the result. America is now one of the few countries left in the world (at the time of writing) that does not yet have a national health service. It is the only industrialized nation in the world that does not have one. One of the basic criteria to describe a nation as civilized is that it takes care of the basic physical health of its citizens, but America doesn't even do that. There are some 45 million Americans who don't have health insurance. They die prematurely due to lack of treatment because they can't afford it. That aspect alone of the US made me disgusted. It was another of the several main reasons why I decided to no longer live in the country. It wasn't worthy enough, not civilized enough.

But there's more. America matured along with the repeater rifle. Everyone had a gun living in the “wild west”. Having a gun is part of American culture, and is deeply ingrained into the American mentality. The result? Oh, about 30,000 gun murders each year, compared to Japan's 100, because the Japanese have more sense than to give its citizens such deadly weapons. Most countries place severe constraints on gun ownership, but not in the US. As a result, criminals can still get guns easily and rob people and kill them in the

streets. It's a national scandal, what the Germans call "Kultur Schande".

Imagine how Americans will feel with a global media when they sense the huge social pressure against them by the vast majority of the world's population in relation to America's "blind spot" regarding the private ownership of guns.

What about the death penalty? In the US, the legal system of the country "murders its murderers". It commits the same crime against the criminals who murder. Such illogicality and brutality is seen to be quite normal in the US. The few other countries in the world that still murder their murderers are not the most civilized on the planet, countries like, Iran, North Korea, China (which kills more criminals than the rest of the world combined), etc. Not a record to be proud of.

Turkey has been trying for years to become a member of the EU. It is a matter of national pride for them. They measure themselves by how well they "stack up" against the prosperous civilized nations of Western Europe, whom the Turks admire. Unfortunately for the Turks, the EU keeps rejecting them. At one attempt, the main reason for rejection was the Turkish death penalty. Turkey was rejected on that criterion alone as being "insufficiently civilized". If hypothetically, the US asks to join the EU (the Atlantic Union?) then the EU would reject it too, for the same reason. America is not sufficiently civilized.

Mono Media

Most Americans, due to their lack of international television (that is now the norm in Western Europe), are very insular minded. American insularity is partly understandable of course. Countries in Europe are the size of states in the US. An American has to make much more of an effort and to pay more to leave his country than a continental European has to do to leave his. It is not surprising that Europeans are more multilingual and more multi-culturally sophisticated than Americans.

Most countries know more about America, than America knows about them. That is partly due to American movies, but mostly due to the fact of the insularity of the US media. In Europe I could zap cultures. One of the main reasons I believe why Europe is now pioneering the creation of the post-nation state, the regional state, the “Union”, is due to the fact that Europeans can see each other’s national television channels. It generates a sense of European community feeling. For example in Brussels I could watch TV from the UK, France, Germany, Holland, Belgium, Italy, Luxembourg, Spain, and the US (CNN). America has nothing like that.

Imagine the impact of such multi-cultural television on one’s mind. Do you want to know what the French think about the German decision on a particular economic issue? Zap, to a French news channel. You listen, you understand. Want to hear the German side on the same issue? Zap to a German news channel. You listen, you understand. Now

you see both points of view. You see that they are both right and both wrong. You think that the two sides should talk more to each other. The two sides could do that more easily with a global language. In fact that is more the case now. There have been times when the national European leaders have locked themselves behind closed doors with no interpreters to thrash things out. They could all speak English well enough to do that.

If America is to learn about the superiorities of other cultures before it really descends into mediocrity this century, it needs to internationalize its media, and to push the learning of foreign languages in the schools. Americans are paragons of monos, inter-culturally incompetent and naive, with a poor sense of history and cultural relativity. They misinterpreted the Vietnamese who were fighting to get rid of their American colonialists, who replaced the French. They misunderstood the Arab Islamist mentality in Iraq. Will they ever learn? Not while their media is so provincial. Things need to change or America will simply not be a player in the 21st century. The more sophisticated parts of the world will simply ignore them. As the French say, “Petit con, Americain”. I won’t even try to translate that. It’s not complimentary.

Jewish Zionists

There are roughly as many Jews living in America as there are in Palestine. So what the Israelis do is of great interest to America’s Jews. After the Arabs flew three planes into

the US World Trade Center and the Pentagon, I remember having a discussion with a group of Americans soon after, when I was asked for my opinion on the events. (Ironically, my first working day in America was the very day all that happened, i.e. 9/11, i.e. September the 11th 2001).

Once I had finished my spiel, I sensed a shocked, deeply resentful reaction on their part. I sensed that they did not understand me at all. It made me feel quite alienated, and feel how “out of touch” America is with its own mono-cultured view of the world.

I said to them, that 9/11 was mostly brought upon the US by itself, its just deserts, given the massive injustice that the US has committed against the Palestinians. A few thousand American deaths is very small beer in comparison to what America has done to millions of Palestinians, i.e. robbing them of their land, via America’s Jews. Here is the logic I gave them.

It takes a lot of land to house millions of Jews. The two basic tenets of the Zionist philosophy is that a) the Jews should have their own country (fair enough), and b) that that country should be in Palestine (not fair – the Palestinians had been living there for 2000 years, since the Romans defeated the Jewish uprising and caused the Jewish Diaspora). Soon after the Nazi holocaust of the Jews (killing 6 million of them, including the mother of my second wife by the way, at Auschwitz), the western world felt a lot of pity for the Jews, and a lot of guilt.

For centuries before, the Jews were the planet's most hated people. The Spaniards threw them out, the English threw them out, the French threw them out, the Poles hated them, and the Russians pogromed them regularly. No one liked the Jews, which is why they so desperately wanted to have their own country. Choosing to colonize Palestine was just that, a form of theft, of colonization, but this was not in the 19th century, as the European powers did in Africa, and the Far East. This was in the middle of the 20th century. Paradoxically, America abhorred what the Japanese were trying to do in China (i.e. colonize it, copying what the European powers did to the country in the 19th century), but turned a blind eye to what the Zionist Jews were doing in Palestine at about the same time.

By this stage millions of Jews were living in the US, and these Jews were smart, intellectually filtered. Prior to the holocaust, Jews were not popular in the US, so only the smarter ones were allowed in. The average IQ of American Jews is as much above the average white IQ, as is the average white IQ is above the average black IQ in the US, i.e. by a full standard deviation, i.e. usually 15 points. It is not surprising that Jews have won a third of the Nobel Prizes. They are a very bright cultural group. It's a pity however their level of humanity is not equally praiseworthy.

Being smart, a lot of them congregated in Washington DC to help steer American legislation in favor of Israel. Many other Jews had control of America's media outlets, so they could influence American public opinion that way too. High intelligence goes with power. That's normal. But

America's Jews were spectacularly successful in their manipulation of foreign policy in the Middle East. As a result, about half of America's total annual foreign aid budget for the planet goes to Israel each year, billions of dollars a year.

Each time, when the Arabs went to war with Israel, it became routine for the Israelis to go to the US to get military aid, with the result that so far Israel has won all its wars against the Arabs. Israel also has the nuclear bomb. One wonders how much of a role the US played in that. So today, we see millions of Palestinian refugees dispossessed of their land by an Israeli Zionist/Colonialist philosophy, backed up by the Jews in the US, and by US foreign "aid" to Israel.

If I were an Arab intellectual I would hate America, I would hate the country viscerally. I would probably have been one of the guys in the WTC (World Trade Center) planes. But I'm not an Arab. I try to see things from the point of view of the policy makers in Washington DC, who are not Jews. Who is manipulating whom? Are America's Jews brainwashing the American politicians to feed them gigabucks? Or are the non Jewish US politicians paying a few paltry billion dollars a year to have an ally in the Middle East in case a real war breaks out there, and the US loses its oil source?

If the US lost its major oil source (60% of US oil comes from overseas), it would very probably go to war to get it back. At the present time the US government supports very

undemocratic Arab regimes, who in return give Americans relatively cheap oil. America's whole life style is built around the car. For example, I used to think nothing of driving 100 miles from the small Mormon town where my university job was, to the state's capital city, Salt Lake City. I did that nearly every weekend for years, to escape the doldrums of small town life, and the "total alienation" I felt towards the Mormons and their childishly gullible religious beliefs. The Mormons comprised three quarters of the town's population. Spending weekends in a small town after having lived the cosmopolitan lifestyle of Brussels was unthinkable for me at the time. Admittedly I did not have a gas guzzling SUV (Sports Utility Vehicle) but I still burned up a lot of fuel, and so too do most Americans. It's the American norm.

So, US politicians realize that if gas prices in the US went up to \$5 or even \$10 a gallon, the American public would be screaming for war. So propping up Israel, and suppressing a few million Palestinians' rights, may be a small price to pay.

The Chinese are now probably making the same kind of dirty deals in other 3rd world countries, as it strives to fuel (literally) its own burgeoning economy. When you are a political leader, you have to make some dirty compromises, choosing the lesser evil. America has been doing it for years, and has lost a lot of friends in the process.

Plutocracy and Zionocracy

American democracy was one of the first on the planet - a historical experiment. The US “founding fathers” were “democratic amateurs” who didn’t know what they were doing. The resulting “presidential democracy” that they created contrasts greatly with the “parliamentary democracy” of most countries, which democratized later. Most of these countries consider the parliamentary form of democracy to be superior to the US presidential form.

In the US form, the leader is elected (more or less) directly by the people, and advertising plays a huge role in getting a US president and US politicians (re)elected. Hence American presidential candidates go through the “American political circus” that takes a year, to roam around the country shaking hands and taking bribes from corporations to pay the hefty costs of the TV ads.

In a parliamentary system, the people elect the party, usually with proportional representation, and the winning party politicians then elect their leader, who becomes the leader of the country. This way, the leader is more likely to be a competent politician, rather than a popular fool as is too often the case in the US. (Imagine if the bumbling Palin had become US president?! But the US did have a cowboy actor as a president, and a gum chewing football player who (mis)led the country!)

In a democracy, government should be “for the people, by the people” but in the US, the corporations (and especially Jewish dominated corporations) have such a bribing stranglehold on American politicians, that the politicians

have to do what the corporations want, and to hell with the people.

American politicians are so afraid of the power of the Jewish lobby (AIPAC) (the most powerful in the US) that they dare not speak out about it, for fear of offending the Jewish community in the US which owns 4 of the 5 major news outlets; Hollywood; the international banking system (World Bank, IMF); the U.S. Fed; most of the biggest US banks, and funded 60% of Obama's election campaign. Obama sold his soul to the Jews.

America's political system is now so money corrupted that it is not a democracy. It is a plutocracy (where the wealthy rule, in the interests of the wealthy, and especially in the interests of the American Zionists, who now have the US fight and pay for Israel's wars, e.g. Iraq, and perhaps soon in Iran?) American politics is now so disgusting, that Americans are rapidly losing respect internationally. Videos on YouTube, and international TV channels like Al Jazeera are educating the world, as well as American intellectuals about the ("ethnic cleansing") Jewish Zionists in Palestine, who have killed 10,000s of Palestinians to terrify them to leave their own land, so that the Jews can colonize it. (A particularly effective source of education on these issues is David Duke's website at davidduke.com)

Hopefully, these American intellectuals, like me, will become so anti-Semitic (i.e. anti Zionist) that even the US politicians will be forced to face up to the gale of anti Zionist feeling in the US, and dump support of Israel,

which has no oil, and switch preference to the Arab states, who do. Even better, would be for the US to convert its political system to a parliamentary system that is free of money politics, so that the Jewish lobby (AIPAC), the American Zionist community, and other major bribing corporations, will lose their influence. Jews in the US are only 2% of the American population, so should be given an equivalent amount of power, i.e. not much, rather than having American politicians be so afraid of Zionist power, that they agree to pay literally trillions of dollars for wars that the Israelis want against their Middle Eastern neighbors who are disgusted with what the Jews have done in Palestine.

Americans need to free up their politics from the corruptive influence of corporate power, and American Zionist power (the Zionocracy). As a model, they could use the Scandinavian systems in which money plays no role in politicians getting (re)elected. This is the way democracies should be run, but this is far from being the case in the US. Under the present American political system, ordinary Americans don't have the money to bribe the politicians to pay for the advertising costs to get reelected. American politics is in need of fundamental reform. Its current old fashioned system stinks. It needs to be reformed into a modern parliamentary system that listens to the people's needs, and not just to the corporations needs. Then the US can claim to be a democracy of and for the people.

Here is a case where CB (culture bashing) is sorely needed. The Americans are so insular minded, and their television

is so dumbed down (owned by mostly Zionist controlled, ad driven corporations who pitch their programs at the majority, i.e. the “peakers,” whose IQs lie in the peak of the Bell curve) that most Americans learn very little about the rest of the world. These Zionist controlled television companies paint a very favorable picture of Israel and create an atmosphere of “being anti-Semitic is taboo” which is precisely what these Zionist controllers want, to get ordinary Americans to pay the (literally) billions of their tax dollars to Israel every year, so that Israeli Zionists can continue to colonize and terrorize the Palestinians.

If the world “CBs” the US for its “rotting democracy,” most Americans will not listen. Hence the strength of the CBing against it will need to be hefty. Polite criticism will not shake the American nationalist monos out of their political complacency.

B6) THE CULTURE BASHING OF JAPAN

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Abstract

These paragraphs were written in the 1990s, when I was living in Japan (1992-2000) as an artificial brains researcher. They are extracts from my second book “Multis and Monos : What the Multicultured Can Teach the Monocultured : Towards the Creation of a Global State” (available on amazon.com).

TOPICS COVERED

Most Insular

Not a Real Democracy

Sex Roles

Education, Creativity, Exams

Rabbit Hutches, War Guilt

Minorities

Emotional Poverty

Corrupt

Superiority Myth

Sado-Masochism

Intellectually Sterile

Respecting Individual Liberties
The Future : 21st Century Globalization
Postscript on Japan

Most Insular

If someone were to ask me, “What aspect of the Japanese annoys you the most?” I would answer immediately, “Their profound insularity, their extremely poor sense of cultural relativity, their inability to put themselves “into the shoes” of a non Japanese, their intercultural incompetence”. Each culture has its weaknesses and blind spots.

If you asked me the same question about the Americans (based on my 6 month single stretch living in the US in 1989 as a grad student, and my twice a year visits every year since), I would say, their Puritanism (i.e. their denial of the pleasures of the flesh, so contrasting with the joie-de-vivre of French culture, in which I lived for more than a decade), plus their religiosity (some 80% of Americans still believe in religious superstitions 2000 years old), their nationalism, their insane gun laws, etc, all frozen 19th century European values, that the Europeans grew out of in the 20th century (often based on bitter experience of two major (world) European wars). To understand the profound insularity of the Japanese, one needs to understand their geographical situation and their history.

Japan is an island, and a large one, with the world’s 8th largest population (after China, India, America, Indonesia,

Brazil, Russia, and Pakistan) and hence is culturally self sustaining. It is also an ancient nation, going back more than 2000 years to the last major wave of immigration (from Korea). The nearest country (other than some minor islands in the north) is Korea, which is hundreds of kilometers away, so Japan is really isolated in geographical terms. The British are insular for similar reasons, but France is only 30 Kms away. Island cultures are harder to invade, so they tend to evolve independently of their overseas continental neighbors. The Japanese have had rice for over a thousand years, which supported high population densities, resulting in centuries long overcrowding, which in turn created constant stresses and tensions.

To overcome these frustrations Japanese social control has traditionally been very authoritarian, often brutally so, if one reads Japanese history. For example, when Catholicism grew in the 17th century (under Portuguese influence), it became so popular, that the ruling elite felt threatened enough to stamp it out, murdering over a million Japanese Catholics, and then sealing off the country for 2 centuries to foreign influence, until the Americans forced open the country with gunboat diplomacy and superior military technology. This history has kept the Japanese culturally and intellectually insolated from the rest of the world for centuries.

The Japanese are one of the most culturally homogeneous peoples in the world. The minorities in Japan (the Koreans, about 700,000; the Ainu (the aborigines of Japan, in the north, only about 50,000); and the Burakumin (or Eta),

Japan's untouchable caste of about 3 million – more on the mistreatment of Japan's minorities later), are a small percentage of a total population of over 125 million. So the vast majority are the main stream Japanese with a common language, and common cultural history. The Japanese understand intuitively how other Japanese think, which makes communication easy.

But, when everyone behaves in a given way (due largely to historically and ecologically necessary social pressures on Japanese to behave according to set patterns, which have evolved over the centuries to preserve the peace in an overcrowded country), any foreign behavior sticks out like a sore thumb. Few Japanese people have lived overseas, and their command of spoken English is so poor (until very recently, amongst the young) that first hand experience of life outside Japan is a closed book to most Japanese.

Only about 10% of the Japanese population has even left Japan. Less than 1% can speak good English. Even the teachers of English in the high schools cannot speak the language well. Only recently have native English speaking English language teachers been imported in large numbers to Japan's high schools (the "JET Program") to overcome this major handicap. The Japanese are a proud (even arrogant) people who have a strong desire to make a mark in the world, but cannot, because they cannot express themselves well in international forums where fluent English is mandatory.

It took me two years of living in Japan to realize how deeply insular is the mentality of the Japanese. I had always lived in multi-cultured societies, so from an early age, I became used to multicultural differences, and learned that there are many different customs and attitudes to life. In Japan however, the Japanese are not exposed to multiculturalism, so they grow up unconsciously thinking that there is only one (good) way of doing things, i.e. the Japanese way and since in Japan, social pressure to conform to group norms is high (to preserve the peace in 3-generational, one-roomed houses, over centuries of farm and village life) the Japanese, even intellectuals, often have a really hard time accepting at the emotional level (as against a more liberal intellectual level) the idea that differences in behavioral patterns should not be censored.

To me, this mono-culturalism is unsophisticated and uncosmopolitan. (I lived in Brussels for more than a decade, one of the most cosmopolitan cities on the planet, with one person in four being a foreigner, capital of the European Union (EU), NATO's headquarters, etc). I will mention this point in other contexts later, but for my daily living, the intercultural incompetence of the Japanese is what gets me down the most, and there's not much that can be done about it until digital, stationary orbit, global, 1000 channel TV arrives, making the Japanese suddenly realize at an emotional level that there is a big world out there, 50 times bigger (in world population terms).

Not a Real Democracy

To anyone watching CNN around the world, it would appear that Japan is a democracy. Well it is and it isn't. In Japanese hearts, democracy is foreign - imposed upon them by a conquering, nuclear-powered American military, under General MacArthur, which attempted to democratize the Japanese public, so that they would not go to war again and murder 30 million of their Asian neighbors. Prior to MacArthur, Japan had been a deeply authoritarian country. Not more than a century ago, it was the right of the ruling Samurai (warrior) class to cut off the head of a peasant farmer who did not give the samurai enough respect. Even today, the Japanese public is incredibly politically and socially passive as seen by westerners.

It is part of Confucianist and Buddhist philosophy to accept things as they are, and not complain. Of course, the foundation of a real democracy is that the public complain about things that need to be removed or reformed. The level of development of grass roots democracy in Japan, I would put at about a century behind the west. The younger generation, exposed to America's Hollywood, and CNN etc, are slowly becoming more westernized, but the bulk of the population is rather stolid, and passive.

(Actually, in my view, modernization and westernization are the same thing. If modernization had occurred first in the east, then westernization would be called easternization by westerners. The east calls modernization westernization because it sees modern ways first in the west). This passivity creates all kinds of social problems for the

Japanese, but since they are so insular and ignorant of how people live in other countries, they simply don't realize how much they suffer through ignorance. If no one complains, nothing gets changed. Without change, there is no improvement. Japan to me is a very socially conservative country, one that I have little pride in, socially speaking.

MacArthur did not do a good job in democratizing Japan. The Americans were in a rush to get back to the US and did not systematically root out Japanese fascism and authoritarian rule, with the result that as soon as they left, the Japanese bureaucracy, which was hardly dismantled at all, quickly took power and began to run the country the way it wanted. That is, a small group of men, admittedly intellectually brilliant in many cases, but unelected, simply imposed its will on a passive, obedient, hardworking Japanese people desperate to reestablish their material standard of living after being (fire- and A-) bombed flat by the Americans.

In a culture of little collective criticism, this kind of dictatorship is possible. The Japanese politicians are in reality rather useless, changing their ministerial posts every 6 months or so, and being no match intellectually for the mandarin bureaucrats, who are the creme-de-la-creme of Japan's education system. As an example of this kind of bureaucratic rule, and the abuses it can give rise to, take the case of Japan still not allowing the mini-dose contraceptive pill. Japan is one of the very few industrialized countries in the world not to have the mini-pill (along with ultra-conservative Catholic Ireland).

The old larger dose pills are obtainable to treat heavy period pains etc, but the mini-pill is still banned. Why? Well, the generally accepted hypothesis seems to be that the Japanese Medical Association is very powerful, and lobbies the Ministry of Health bureaucrats to persuade them to declare to the public that the mini-pill is unsafe, with dangerous side effects. The Japanese are too insular to realize that the rest of the world uses the mini-pill, including dozen of countries with medical systems more advanced than Japan's, to no great danger, but such thinking would not occur to most Japanese, such is the strength of their inward looking mentality.

However Japan was the first country in the world to get legalized abortion on demand (in 1948 – largely as a consequence of Japanese disgust at the half-cast babies born of Japanese women and black US soldiers. Those born were shipped off to the Japanese communities in Brazil, and the rest were aborted). Without the mini-pill, abortion still plays a major contraceptive role in Japan, with an estimated 2 million abortions a year, i.e. about one abortion per woman per lifetime. The medical profession cashes in mightily.

The gynecologists do not want to see the mini-pill come in. Nor do the condom manufacturers. Nor do the ultraconservative bureaucrats, who are horrified at the idea of young Japanese women taking control of their own bodies and sex lives by initiating sex, the way their western sisters have taken for granted since the early 1960s. Since

the women's movement in Japan is a joke, i.e. has no punch at all, nothing changes. The mini-pill has been banned for decades. In this respect Japan is decades behind the west.

A basis for a healthy grass-roots democracy, where the public imposes its will on its elected representatives, who then legislate laws and command the bureaucrats (who should be civil *servants*) to execute the laws, is that the public be informed of what is wrong with society. A vigorous and independent press is essential for democracy. However in Japan, the media is largely controlled by the politicians and the ministries. Favored journalists, (i.e. the noncritical ones, those who don't pry into the politicians or bureaucrats indiscretions or corrupt practices, of which there are many (Japan being a most corrupt society, with constant scandals eventually breaking through the media damper) are invited to press conferences.

There is very little tradition of muckraking or independent investigative journalism in Japan. Japanese journalists are Japanese and hence lack the necessary individualistic mentality to be effective investigative reporters. Even those who are, face resistance from the Japanese public, because such individualist behavior disturbs the "wa" (social harmony). The net result is that the Japanese public is poorly informed of what is happening, so it is not surprising they are so passive.

In Japan, in practice, it is the bureaucrats who make the laws. They propose them and the politicians largely rubber stamp them. It is the bureaucrats who effectively rule, and

it was the bureaucrats who simply dictated that the Japanese would have poor housing, high prices, few airports, a memory based education system, etc. The Japanese public simply passively accepts this, not knowing they could live better lives if only they were more cosmopolitan in their outlook. For two generations now, the Japanese have had to put up with high prices that are often double or more (in purchasing power terms) compared to those in western countries. The general public is not consulted.

After centuries of repressive dictatorial government, the Japanese are not accustomed to raising their voices in anger and insisting on changes. Of course, this does occur to some extent, but much less than in the west, with the result that Japan is seen as being socially backward by westerners. Historically, one of the reasons why the shoguns (the Japanese military dictators) in the 17th century were so threatened by the rise of Catholicism was that this western doctrine was capable of getting large numbers of Japanese peasants into the streets to protest, something unheard of prior to the arrival of westerners in Japan.

However, the dictatorship of the Japanese bureaucracy does have a positive side to it. The bureaucrats are not stupid. They are the country's intellectual elite, and they think long term (although in Confucianist terms). They reasoned that it would be better for Japan to sacrifice the emotional happiness of one or two generations of Japanese, by having them work hard and paying high prices as a form of forced

saving. The high savings rate thus created cheap capital, which got ploughed back into company investment.

With cheap capital and high prices, the companies made considerable profits, which allowed them to grow, and Japan has grown spectacularly since WW2, however, at great social cost. My general impression is that the Japanese are not a particularly happy people. There are too many social pressures, too many social obligations and not enough individual liberty for them to feel happy. The pressure cooker of Japan's economic growth machine (until the collapse of the speculative "Bubble Economy" in the 1990s) has been achieved at the cost of creating a rather emotionally impoverished Japanese public, I feel.

Only now are the more affluent younger Japanese (under 30) beginning to rebel against the old model, spending their time and energy on their own individualistic hobbies. But, even then, they don't complain collectively. They merely privately do what they want, and don't rock the boat. One of Japan's biggest problems I feel, is its political and social passivity. There is social pressure against complaining in Japan. A good Japanese simply grins and bears it.

This political docility led to the rise of Japanese fascism in the 1930s, resulting in 30 million Asians being murdered by the Japanese military in the 1930s and 1940s. The Japanese people did not have the courage in the 1930s to stop the rise of a fascist military dictatorship, which made itself hated by its cruelty and inhumanity towards its Asian neighbors. Such is the price which is paid sometimes for a

lack of democratic spirit in a population. (As George Bernard Shaw famously said, “People get the leaders they deserve”.)

Sex Roles

In the early 1980s, in Europe, I was a very active “masculist” (i.e. men’s libber). “Masculism” is my word by the way, which I coined in the mid 1970s., I was on the European media about 150 times, preaching the gospel of women’s’ careers, to free men from the burden of being the sole bread winner of the family. The main idea was, “Now that women can work, they must work, otherwise they parasitize on men and thus enslave them”.

To force “fluffies” (i.e. a masculist label for traditional women, who are financially parasitic on men) to become FIPs (i.e. Financially Independent Persons, another masculist term), masculist ideological strategy was to frighten them with the slogan, “If you want to get a man, get a career”. Masculist influenced men realized in northern Europe (a region which is about a decade ahead of the US in social attitudes, e.g. full sexual intercourse on TV, unmarried couples living together, abortion pill, atheism, female careers, etc) that there were many advantages in having a serious relationship with a FIP.

A FIP is far cheaper to divorce. Traditionally, a man would pay for a woman (a fluffie) before a divorce and then after the divorce, so he’s paying for a woman he doesn’t love –

pure parasitism on the woman's part. Women are now living until they are 80, having small children for only a handful of years, so they have plenty of time for careers. Having a relationship with a FIP makes switching careers easier for a man, because she is sharing more or less equally with him the burden of earning the family living.

He can then afford to earn less, maybe get a better qualification by going back to university for a couple of years. If he's a "robot" (i.e. a masculist term for a traditional mono-dimensional workaholic male who unquestioningly accepts having a fluffie as a wife) then he will probably be locked into a financial prison, with no flexibility to earn 10%, 20%, 40% less, because he is forced to earn as much as possible to pay for the kids' school fees, the mortgage, his wife's dresses, etc. He is forced to stick with the same job that he may hate or be bored with. If you're working 8 hours a day all your life in a job that you hate or are bored by, but can't get out of it because you are locked into a financial prison, then you are truly unliberated. Masculism is men's liberation, and the biggest problem for masculists is female financial parasitism.

Fluffied men often hate their lives because they cannot change them. Once millions of European men began to wake up to this idea, especially in the Scandinavian countries (the most socially advanced in the world), fluffies really began to feel the pressure. The women's (feminist) movement was strongly advocating careers for women. With a divorce rate of 50% in many countries, being a

fluffie is financially risky. What happens if you lose the man you parasite upon? Men increasingly rejected the idea of alimony (i.e. money paid by ex-husbands to ex-wives), labeling it “a parasite’s charter”.

Along came the masculists, who tried to make men conscious that, “You’re better off with a FIP than a fluffie”. Fluffies cannot even survive unless there are “robots” (traditional men) around who are willing to be parasitized upon. As more and more men took up masculist attitudes, the remaining fluffies (who had not yet converted themselves into FIPs) began to panic. They could afford to ignore the feminists, but if their own husbands started thinking along masculist lines, then that was truly dangerous. I used to be given dagger eyes by fluffies in the tram in Brussels the day after I had been on national TV, pushing masculism.

But, over the years, the percentage of women getting careers in the west rose and rose, until fluffies in many countries effectively died out. It’s now the norm (in the sense of a social expectation, i.e. a social pressure from peers, parents, etc) for young women in the west to have a career. More importantly, their boyfriends expect it too. Fluffies are OUT!

Once women had careers, their husbands began to respect them more, because the women had new financial and emotional bargaining power. They could say to their husbands that if they were neglectful or unpleasant, the wives could divorce them more easily, because of their new

financial independence. The husbands found their careerist wives a lot more stimulating than their former (boring) housewifey wives, and could share common careerist experience and difficulties with them.

Communication between husbands and wives in the west thus improved and hence the quality of their sex. Dual career coupledness definitely had its advantages, although there were new problems, such as what to do if the two spouses worked far apart. The usual solution to this problem was to move to a big city, where both could find local jobs.

Now that I'm in Japan, I feel like I've stepped into a time machine. The Japanese are backward when it comes to sex roles. They are like the west in the early 1960s, and hence are at least 30 years behind in this respect. They have not had their sexual revolution yet (the mini-pill is still banned in Japan), that the west had in the early 1960s, so Japanese women don't even have control of their own bodies and sex lives. They have not had the feminist revolution that the west had in the 1970s because Japanese women are too passive, and they have not had the masculist revolution that northern Europe (and to a lesser extent, the US) had in the 1980s. (In any country, the feminist revolution has to precede the masculist revolution, because husbands cannot work less and earn less until their wives earn more.

Since there has been no real feminist revolution in Japan, and few Japanese women have real careers (as against "pin-money" part-time jobs, which are very common), Japanese

“fluffie’ women financially enslave Japanese “robot” men. Since being a masculist was a very important part of my self image in the early 1980s, seeing the level of under-development of Japan’s sex roles makes me ashamed of Japan.

It's a source of great frustration for me, because I like to have a certain pride in the country I choose to live in, but in Japan, the trade-off I make between the advantages of economic and career opportunities on the one hand, and the disadvantages of feeling I’m living in a third world country in terms of social development on the other, causes me to have an air of permanent absent mindedness. The conflict eats up much of my nervous energy and is terribly distracting. It’s not easy being a cosmopole. The more countries one has lived in, the easier it becomes to see the weaknesses of the country one is currently living in.

I fell sorry for Japanese men. They work long hours, often ten or eleven a day, with two, three even four hour total commute times. This is not a life. House and land prices are so high, that to have affordable housing their families have to live far from the city centers, so commute times become excessive. Japan is so out of touch with western social values and is so insular, that the Japanese do not see themselves as socially backward (e.g. more than 30 years behind the west in terms of sex roles).

Most Japanese men consider it perfectly normal that it is their role to earn the money for the family, and that their wives do not have careers, earning only pin money in part

time jobs after the kids are off to school. Japanese husbands just don't see themselves yet as being exploited by their financially parasitic wives. In fact, a lot of them, as company employers, don't want to employ women for careers. Women in Japan face far greater sexist employment hurdles than in the west, but because of Confucianist social values, they don't rock the boat.

Japanese women have not yet organized themselves into powerful feminist organizations to sue rogue sexist male employers, the way western women did in the 1970s, so of course, nothing happens, and Japan simply falls further and further behind the west in social terms. If you mention this kind of thing to the Japanese, they will often just say that Japan is different from the west, that Japan is a different culture, going in a different direction. This is false I believe. Japan is going through the same modernization process (in terms of sex roles for example) as dozens of other developing nations.

Because the Japanese are decades behind the west in this regard, westerners can look at Japan and see the west's past, and can see that Japan is developing along the same growth curve as the west, but is decades behind. The Japanese on the other hand, cannot look into their future, and hence cannot see that they are moving along the same growth curve. Hence it is easy for Japanese to think that they are different (a characteristic of the Japanese that they love to emphasize, with some basis of truth, but also highly exaggerated at times).

So it's a frustrating dialogue for a westerner to talk about sex roles with the Japanese. Also the Japanese are a proud people, who are acutely sensitive to western criticism. The Japanese have a love-hate relationship with the west, and America in particular. For a century, the Japanese have tried to catch up with the west, to beat them. Economically, this goal has been more or less achieved, but socially, Japan is way behind. So by criticizing Japanese social values, a westerner touches on the ultra sensitive inferiority complex Japanese have toward westerners.

This inferiority complex is manifested frequently and routinely in an implicit manner in Japan's ads. Putting a westerner in a Japanese ad gives the product advertised a certain "class", an unconscious association in the Japanese mind of – "the product must be good, because westerners are using it". So when westerners, like me, say such things as – "Japan is still basically a third-world authoritarian country which got rich quickly", the Japanese have a great deal of trouble accepting such opinions, even though it's true (to western eyes).

Japanese husbands work such long hours (until very recently) that they get home exhausted. The kids have already gone to bed, so Japanese fathers in effect "orphan" their children, and often emotionally and sexually "widow" their wives. The division of tasks in the average Japanese household, and particularly for the older generation, is so polarized, that men and women live in two different worlds.

The husbands often leave control of the household entirely up to their wives including control of his salary spending. She will give him a weekly allowance from his own salary. Traditional Japanese values place more emphasis on the mother-child relationship than on the wife-husband relationship. The child will often sleep with the mother, so sex tends to go out the window. It's not surprising after a few years of this that love and tenderness between husband and wife dies. There's an expression in Japan that "a good husband is healthy and absent".

As proof of this, in case you think (if you are a westerner) that I'm exaggerating, was a survey taken in Japan a few years ago, asking Japanese men and women, "What is it in your life that makes life worth living?" Only 5% of both sexes said their spouse. Such statistics are profoundly shocking to westerners, who place much higher importance on love, tenderness and sex with their spouses. To westerners, large numbers of Japanese (especially the older generation) seem rather masochistic, expressing a rather sad, resigned look on their faces, when compared with the *joie-de-vivre* of many other peoples (e.g. the French or Italians).

The Japanese insularity is so strong, that they don't know they are sad. It is this ignorance of other, happier ways of living (which are to be found in other countries) that I find the most frustrating about the Japanese (as I said earlier). One of the first things one learns when living in a second country/culture is that it is possible for millions of people to do themselves damage by accepting 'inferior' customs,

simply through ignorance. Being cosmopolitan teaches you the value of questioning the social values of one's locality. One learns that –“there are better ways of living, which make people happier”. In this respect, the Japanese have much to learn.

I believe that the Japanese really suffer from their insularity, and live lives of relative emotional, sexual, and existential poverty, because they are unable to benefit from the social lessons learnable from other cultures. Japan is too culturally closed minded, too inward looking, to benefit from importing new social innovations. Of course, social ideas from outside Japan do penetrate, but slowly. It is very difficult for Japanese to be influenced by overseas life styles, because of the huge cultural and linguistic barriers.

I have seen other island countries (in a similar situation as Japan is today) come out of their shells and then benefit from contact with other cultures. The example I have in mind is the country I grew up in, Australia. Australia, unlike Japan, speaks English, the world language, thanks to England's colonizing in earlier centuries. Prior to the invention of the jumbo-jet, Australians were an insular minded, unsophisticated and socially backward people (although rich – a century ago, Australians had the world's highest GNP per capita, and today are still in the top rank).

Once the jumbo-jet came along, and mass tourism really got started, large numbers of young Australian graduates in their 20s traveled from Australia to live in the UK and the US for a while. (These countries were easier to live in

because both are English speaking countries, and hence offered immediate linguistic access to their cultures). This experience profoundly disturbed them, because they could see with their own eyes, that in many respects, they had grown up in an inferior culture, which could not compete with the cultures they were visiting.

This experience caused them to feel ashamed of the backwardness of their own culture, so when they returned (as most eventually did – it's hard to give up your cultural roots) they were motivated to improve the relatively backward institutions of their homeland. In the 1970s and 1980s, Australia suddenly became far more sophisticated, cosmopolitan and open to the world, and hence gained greater freedoms and happiness as a result.

A similar phenomenon has yet to happen to Japan, because the Japanese do not yet speak fluent English, despite 6 years of schooling in the language. When Japanese travel, they tend to go to Japanese hotels, stay in tight Japanese groups, and take photos of foreign landmarks, but have little or no human contact with the foreign local people. The Japanese tourists return to Japan with minds almost as narrow as when they left. How then can the Japanese be influenced by the social customs and values of other countries, from which Japan could benefit so much, if only it could open up its insular mind.

One probable answer is global digital TV. 1997 will see hundreds of TV channels in Japan beaming down from telecommunication satellites, most of them in English. I

believe that world TV will cause a snowball effect of English becoming the world language to a greater extent than it is already. When Japanese citizens see that most TV programs are in English, they will learn to speak the language.

Then the war of ideas can really begin. Japanese will be able to compare foreign lifestyles with their own, and in many cases will find that the traditional Japanese way of doing things will be seen as inferior in many respects. World TV will get the Japanese population thinking (and the rest of the world as well). Hopefully, the net result will be the creation of a more cosmopolitan, more interculturally sophisticated, and happier Japan, but it hasn't happened yet. Maybe I'm living too soon in Japan, ahead of Japan's time. Sigh.

Now that I live in Japan, and am an ex-masculist (having invented the term and having been on the European media with masculist doctrine about 150 times) I feel motivated and responsible (given my experience and interests) to try to bring masculism to Japan, which in my view so desperately needs it. Japanese men are truly enslaved here. They do not have the freedom to simply change jobs easily from one company to another.

The lack of true grass roots democracy in Japan, the incredible political passivity, and lack of real union power, has meant that the bureaucrats and the employers have been able to devise an employment system which makes it virtually impossible for a dissatisfied or bored employee of

a major company to change to another company. I have seen this phenomenon first hand. Japanese employers of large companies want their employees to stay with them for life.

Companies invest a lot of training time etc in their employees and do not want to lose that investment. Also, an employee who feels his life is to be spent in the same company will usually develop a loyalty to that company, which is something that the employers want. So these employers are reluctant to employ someone who comes from another company. They feel that if he has been “disloyal” to the previous company, he might be disloyal again to theirs in the future.

Thus the individual needs and rights of the employee to control his own career development and working life are simply ignored by Japanese companies. This lack of basic freedom to change one’s job is one of the aspects of Japan which truly makes me vomit. I feel truly hostile to this attitude. It means that Japanese men are enslaved by their companies. If you are bored by your job, or you feel you have real talent which is not being rewarded financially in Japan’s traditional seniority based salary system, or if you want to move on, or if you want to change careers, or whatever, then it is much harder to do so in Japan than in the west.

The basic individual freedom to control one’s choice of job, and the company one works for (a freedom so precious to westerners and so long fought for, and now taken for

granted) is not respected in Japan. I would not be surprised if it is this aspect of life in Japan that is the most alienating to westerners. I'm constantly shocked by it. It doesn't affect me personally because my lab does not have a tenure system. The lab itself is an experiment, so has no assured long term future, so contracts are annual and renewable, although the department heads and above, being NTT people and Japanese, have permanent jobs. This is one of the disadvantages of my lab.

So, I really feel sorry for Japanese men. They are slaves to their companies, slaves to their fluffie wives, and lead such mono-dimensional workaholic lives. There is little joy in their daily slog to and from work, doing the same old thing year in, year out. Without the possibility of changing companies, let alone careers, because they are locked into a financial cage, without the possibility of earning less, because their wives do not have careers, to take up the financial slack.

If he wants to change careers and earn less for a while, but cant, because of financial commitments equal to his salary, then he's stuck. He cannot change his life. Japanese men truly need masculism to push women out to work, to get women educated to the limits of their female abilities, and to take up equal responsibility for the burden of earning the family living by taking up full careers. Women live to 80 and have small children only for a small number of years.

It is highly immoral that fluffies expect to be kept financially by men all their lives. When I get introduced to

a Japanese fluffie (or any fluffie for that matter), my face sours. I don't respect her at all. I treat fluffies with the contempt they deserve. A fluffie to me is equivalent to a 19th century slaver of Negroes. Both expect other people to work for them without payment. Both are equally immoral. Feeling ran so high against Negro slavery in the US in the 19th century that it caused a civil war.

I feel a similar hostility to a fluffie who lives off her husband's pay check, and spends her days playing tennis, cards, spending his money in shopping malls, going to flower arrangement classes, etc and not bothering to shoulder half the financial burden. When the children are very small, the wife/mother is busy raising them, then the two sexes are both working hard, but this is only for a few years.

In Japan, and particularly in the professional classes that I frequent, fluffies have a wonderfully free (parasitic) life in their 40s and 50s. They may have part time jobs, and have lots of time for their hobbies and friends. Fortunately for them, their husbands are robots and unquestioningly accept that they will earn the money, and that their wives will spend it. This is a kind of slavery and is morally wrong. I will not respect Japan fully, until Japanese women get off their bums and pull their weight financially, equally with Japanese men. For this to happen, Japanese women will have to organize themselves into a powerful national feminist movement and push hard for equal rights to employment. This they don't do, so not surprisingly, nothing changes. Simultaneously, Japanese men need to

have their masculist consciousness raised, so that a powerful national masculist movement can be formed. In Japan, women are changing far more than men. Men have hardly budged an inch in social terms. This is normal of course, because feminism has to come first. Once women have careers, then men can work less, and earn less.

But feminism hasn't really got off the ground yet in socially backward Japan, so men are still locked into the traditional mono-dimensional careerist role. Far too many Japanese men actually don't want their wives to have careers, particularly Japanese male employers. I don't know whether I have more disdain for the passivity and political uselessness of Japanese women or for the backwardness and conservatism of Japanese male employers who don't hire women for careers. Both are a problem.

In Japan it is commonplace for husbands to live and work in one part of the country and to go home in the weekends to another part, instead of having their families move house to follow their jobs. The main reason for this is that under the traditional Japanese value system, the children's' education takes precedence, i.e. the Japanese education system is so competitive (see the next topic below) that the family does not want to "disturb" their children by moving, forcing them to change schools, etc and hence lowering the chances of them getting into a good university if they pass the university entrance exam.

Hence the marriage really suffers. (This assumes that the marriage is a good one in the first place, but if it is the

usual lack-luster Japanese marriage, maybe not a lot is lost). Japanese companies expect their employees to move to other locations. Since it is very difficult for an employee to change companies, it is very difficult for an employee to say to an employer, “No, I don't want to move, I don't want to be separated from my family, which would destroy my marriage, widow my wife, orphan my children, lower my emotional wealth, deprive me of sexual joy, etc. If you keep pushing for me to move, I'll change departments, or even companies. Screw you!”

Japanese don't have enough consciousness of grass roots democracy and individual rights to think like this. It's foreign to them. They have lived under authoritarian dictatorial governments for so many centuries that individual human rights, that the west has fought for so long, and now takes for granted, are not respected in the east, at least not yet.

So Japanese male employees get pushed around. Families get broken up like this all the time. Several men in my lab live like this. After a while, these men get “second wives”, and love dies between husband and wife. It is yet another example of what I see as the “emotional poverty of Japan”, and shows that sex role liberation for both sexes and the need for greater grass roots democracy in Japan, go hand in hand.

Education, Creativity, Exams

Japan's education system is unique in many respects. Firstly Japan is very much a meritocratic society, with little inequality of wealth and more or less equal opportunity to advance according to one's individual abilities (a real plus for Japan). Education is highly valued, and parents and teachers put considerable pressure on students to succeed academically. This pressure is so strong, and the competition to fill the few slots at the elite universities is so intense that a weird social phenomenon has arisen which effectively robs Japanese children of their childhood sense of fun. Japan is not a democracy.

Grass roots individualist democratic feeling is poorly developed here, so the rulers have more or less a free hand to run the country the way they want. Employers want their employees to work for them for life, so once a young graduate joins a company, he (nearly always a he) is stuck there for life, hence it is critically important that he get into the right company from the start. Tremendous pressure is placed on him by his parents to do this. It will influence his quality of life and status for the rest of his life.

Now the top companies (until very recently in some cases) have an entrance quota policy, i.e. X% of company entrants will come from Tokyo University, Y% from Kyoto University, etc, and so on down the list of universities of decreasing status. Hence, to get into a good company, you have to be a graduate of a good university, so you have to get into a good university. Once you're in you can relax, because in Japan, universities are pretty much vacation

camps, in which one socializes, plays tennis, and only does a little work to scrape through the exams.

Companies do not care much about how well their young graduates studied during their university courses. They only care about which university each candidate came from. Now to get into a good university it is very important to get into a senior high school (10th to 12th grades) which has a good record of getting its students into the top universities.

These top high schools have entrance exams too. So students study hard to get into them. Now, to get into a good senior high school, you need to get into a good junior high school (7th to 9th grades), which has a good record of getting its students into the top senior high schools. This chain of reasoning in Japan extends all the way down to kindergarten, and even in the womb. Some women stimulate their babies' brains with musical speakers placed on their bellies).

To exploit this education mania, private after-school crammer schools called "Jukus" (pronounced "jew ku z") have sprung up which drill students to get better results in the entrance exams. They have been very successful, and so a large proportion of Japan's young students spend extra hours after ordinary school studying, which of course means that they have less time for fun and being children. The irony is that what they study is largely useless knowledge, especially at high school level. The entrance tests (to be objective and fair to everyone) are in the form

of multiple-choice, which can be graded without bias by a computer.

So the jukus and the schools drill their students to excel at taking multiple choice tests. Students are rarely asked to express original thoughts or to state what they think about a given issue or to write an essay. The authoritarian tradition of Japan means that the educational style is top-down, i.e. the teacher/professor/god talks, and the students listen – hence, no student intervention, no disagreements, no discussion, no western (and particularly American) dialog between teacher and students, no show-and-tell, no essays, no attempt to stimulate the creativity and expressiveness of students' individualities.

The result is that the students have their individuality and creativity stunted. I see the final product of the Japanese education system at my lab, which is said to be one of the best in Japan. I have been in top Japanese labs for 5 years now, and based on my experience, I have a low opinion of Japanese creativity. It's there genetically, but has a very difficult time coming to the surface, because these young researchers have never really been encouraged to express themselves, so it is boring talking with them (over and above the usual problem of the enormous language barrier).

At my lab, there are effectively two communities, the Japanese and the Westerners. The two don't mix much, mostly for the practical reason of neither group being able to speak the other's language well (despite 6 years of English classes at Japanese schools, which until recently

emphasized a non-verbal approach to language learning – quite useless in the modern world).

Even with those Japanese who do speak English well, talking with them is usually less intellectually rewarding than talking with westerners, because the westerners are not afraid to express themselves, to offer ideas, to take the risk of being wrong, to contribute to the discussion, whereas far too often, Japanese researchers seem to be ideationally constipated, wary of open ended questions where they have to think on their feet. They are too frightened of offending anyone, or of criticizing someone of higher status, so conversation with them is stilted, boring and after while, you (as a westerner) simply wash your hands of them.

There are always the exceptions of course, but on the whole I look on the Japanese as creative pygmies. It's a major fault of the culture and the Japanese education system. The Japanese Ministry of Education (Monbusho) is one of the most conservative, which explains why Japan has failed to reform its educational policies. Other countries do not select their intellectual elites on the basis of how well their candidates score on memory based tests at high school level.

This is a stupid system which should have been thrown out years ago, but the politicians in Japan are impotent and useless, the Japanese population is too politically passive to assert its will, and the Monbusho bureaucrats are too creatively dull and insular to do anything about the problem. The result is that 12th grade high school students have to go

through an “examination hell” at the end of their high school life, to pass the university entrance tests.

In my view, Japan’s inability to reform its educational policies is symptomatic of the weaknesses of Japan’s whole culture, i.e. its lack of grass roots democracy (i.e. its passive obedient population who don't pressure politicians collectively to change the situation), the impotence of the politicians themselves, who are intellectually an inferior breed compared to the bureaucrats, and the lack of imagination and international experience of the bureaucrats themselves (the real power holders).

What does Japan need to do to overcome its education problems and to return the fun to children’s lives? There are a lot of things it could do, but it would involve a social revolution of Japan’s whole social structure. I personally would like to see what I call a “Social Meiji”. The “Meiji Era” in Japan, starting a bit more than a century ago, saw Japan very frightened of being colonized by us (the westerners) the way we were doing to China, Africa, and other third world countries.

To fight fire with fire, the Japanese quickly mobilized their energies to send young men to the west to bring back European scientific and technological knowledge, in order to create a modern Japan with a strong military, with modern guns, and ships, etc, capable of matching the west, and preserving Japan’s social values from the ideological onslaught of a European colonization of Japan.

(The Japanese had already had a taste of European ideological force with the rise of Japanese Catholicism in the 17th century, until it became threatening to the dictatorial power of the shoguns (the Japanese military dictators), who murdered a million Japanese Catholics to rid the country of their influence, and then close the country to foreigners and to returning Japanese under pain of death). The Japanese underwent this “technological Meiji” transformation in a few decades and even won a war against a major western power (i.e. against the Russians in 1905). The result is that Japan is now a modern nation, even one of the leaders, technologically speaking.

However, I believe that Japan has now entered a new era of crisis in which another major social transformation is necessary, as it learns that in a world information-based economy, creativity is vital for survival. Japan’s current social and economic institutions were set up after WW2 to fuel an assembly line production based economy, which are no longer suitable for the modern era.

A “Social Meiji” is needed, where the best social ideas from around the world are brought to Japan to modernize Japanese social institutions, so that it can be proud of itself and earn the respect of the west. At the moment, I think it is fair to say that the west respects Japan’s economic prowess but looks down on Japan’s social inferiorities.

To overcome the examination hell phenomenon, I would install a grade system at the universities, similar to those in the west. Employers would then know that a graduate with

a high grade is smarter than another with a low grade. Which university the student went to would then be rather irrelevant, so long as the grade standards were fairly uniform over the country. Employers could be guided by the grades rather than the names of the universities.

In the present Japanese system, companies select people who have good memories and persistence, but not necessarily good creativity, or analytic skills, or ability to think critically. In fact my general impression of the level of development of logical, critical thinking amongst Japanese is negative. The Japanese prefer to emphasize good feelings between people, rather than to promote critical logical dialogs. Logical thinking in Japan is not nurtured, with the result that the illogicality and inconsistency of the Japanese can infuriate westerners, who are educated (as a basic western value) to think and express themselves clearly and logically.

Japan should also set up an American style GRE (Graduate Record Exam) which gives a nationally standardized IQ type test to graduates who want to go on to do post-graduate work. Universities can then select their graduate school candidates partially on the basis of the GRE scores. In Japan, as in any modern country, the top jobs should go to candidates who are selected at post-graduate level, not at high school level. The academically pressured years should be at postgraduate level. High schoolers know nothing, and are usually too immature to know what they want to do in life.

Japanese society needs to become more grass roots democratic and put effective collective pressure on its politicians, so that companies do not dictate employment policy. Then it would be easier for employees to change companies, so that getting into a given company, depending upon an entrance exam result at 18 years of age becomes irrelevant. At the moment, in Japan, the university years are seen as the only time to relax, sandwiched between the examination hell of high school and the workaholic mono-dimensional pressure of company life.

This system is “sick and twisted”, and all wrong. It should be the other way round. The toughest years should be at university graduate level, at which the top minds are selected to occupy the top posts. Universities should be places of hard work, used to filter the brilliant from the good. Japanese universities today are rather low status institutions compared to those in the west. Japan has won a pitiful 5 Nobel Prizes.

Japanese universities are seen by the west as being financially poor, with low salaries, as relatively stifling, with godlike professors who take authoritarian attitudes towards their students and staff, as having a rigid communication between departments and groups, and as being rather corrupt, with partisan selection of research projects and funding. Japanese universities are in a bad way, and desperately need to be reformed and upgraded. This is starting now, but a lot needs to be done.

To enable Japanese men to change their companies and careers more easily, Japanese women need to get off their bums and pursue careers. The women can then support the men financially while the men change companies or careers, go back to university etc. to get new qualifications. With men thus freed from their financial cage, they will want to change companies in larger numbers. As young men see that it is possible for them to change companies relatively easily, as in the west, this will reduce pressure on them to select the “correct” company for themselves at the beginning of their careers. With the reforms I’m suggesting here, just which university one gets into, becomes less important. What is important is the grade one gets at graduate or postgraduate levels, and for the top jobs, how brilliantly one performs at PhD level. The very top jobs require people with brilliance, creativity and vision.

Doing research encourages people to think in this way. Putting a person who scored well in a high school memorization test into such top posts is obviously stupid, yet it happens all the time in Japan. It probably explains why so many of the bureaucrats lack vision, are so insular minded, and have the creativity of newts, but at least they are intelligent. The education system filters well for intelligence, but that is not enough for today’s fast changing world, where creativity and vision are increasingly needed.

Company personnel department staffs should drop their quota system (X% of recruits from Tokyo University etc). With a GRE system in Japan and graduate and postgraduate

grades, personnel managers can judge by the grades and not the names of the universities. Hence the university in which one does one's undergraduate work becomes rather unimportant, because it's the grade that counts, not where one got it from.

So it would not be so important which university one got into, so long as during the university years, one got good grades. Hence the pressure would be taken off the secondary school students to get into a good university, etc. This logic then applies all the way down to kindergarten, so that the Juku business can die, and Japanese kids can "have a life", without having to waste their childhood cramming useless knowledge that they will forget immediately after the entrance exams.

Maybe then, the Japanese education system can do what education is supposed to do, namely to teach its students to think logically and to create, rather than only to passively memorize. This would lead to more flexibility in one's career. For example in the US now, the average company employee changes his job every 5 years. This flexibility is seen as an asset in an era of rapid technological change. Technology is creating and destroying jobs faster and faster. One of the reasons why Japan has been doing poorly in economic terms in the 1990s is that Japanese society is not geared for rapid creative technological innovation.

America has been pulling ahead lately (although the Japanese high-tech multinationals very recently have been doing extremely well, which is good for me). Japan

desperately needs to reform its education system to foster creativity and individualism, otherwise it will never be No. 1. (Actually this is only partly true. There is another way the Japanese can become No.1 and that is to import the best brains in the world to Japan, to invest in the new sciences, to create the new technologies, to generate a new economy.

Rabbit Hutches, War Guilt

When I'm in the train looking out at Japan's suburban housing, I'm struck how inferior it is by western standards. It is truly third world, yet Japan is rich country. Why the discrepancy? Admittedly there is a shortage of land, but still, why does Japan insist on growing its own rice at a customer price which is several times more expensive than the world price? If Japan imported its rice, it would have a lot more land for housing, so the price for land would drop substantially. (If one includes the price of land when calculating living standards in international comparisons, then Japan is a mediocre country, in the middle of the industrialized nations, about 20th or so).

With lower land prices, Japanese home owners would have more money left over to build better houses. So why does Japan insist on growing its own rice? Many other countries import their food, so why not Japan? Why do the Japanese significantly lower their material standard of living by dwelling in "rabbit hutches"? This 3rd world housing standard results from the impact on land price of their decision not to import rice. I think the deep answer to this

fundamental question is again, Japanese insularity. It's well known that Japan's overseas neighbors still hate the Japanese, particularly the older generation.

I travel regularly to continental Asia and know first hand how deeply the Japanese are hated because of the atrocities they committed in WW2, and their colonial policies in Korea and China. This hatred lingered despite the fact that it has been 50 years since the Japanese murdered 30 million Asians, one of history's greatest crimes, in terms of sheer numbers of people killed. The wounds are very deep, particularly, in China (where 20 million Chinese were murdered by the invading Japanese army). Unfortunately, the Japanese still have not truly atoned to their Asian neighbors for these massive crimes.

The invaded Asian nations know this, and they also know that the younger Japanese have not been told by the Japanese education ministry what happened. Asian governments on the other hand, certainly inform their peoples of what the Japanese did. My god, in China, you can't get away from it. Chinese TV and films are full of it. (I know. I go to China regularly). But in Japan, school text books have been regularly censored to keep Japanese school children ignorant of what their grand parents did in the war.

In Japan's non-democracy, the bureaucrats did not want their role, nor the Japanese Emperor's role in the war criticized by a critically informed public. Since they had control of the content of the textbooks, they censored them

as they pleased. The Chinese and Koreans etc. bitterly resented this. They cannot accept that the memory of the massive suffering they were subjected to under the Japanese be simply obliterated from young Japanese minds. Even today, the Japanese are having great difficulty in accepting the fact that some 200,000 young continental Asian women were conscripted in the war to serve as sex-slaves (unpaid prostitutes) for Japanese soldiers.

(In Japan, these women are euphemistically called “comfort women” in the Japanese language press). In general there is not the same degree of shame in the Japanese public for the Japanese atrocities of WW2 as there is in Germany. When a German neo-Nazi group gets in the news, e.g. by burning down a Turkish guest worker dormitory or when some deluded neo Nazi thug says that Auschwitz never happened (my second wife’s mother was gassed by the Germans at Auschwitz), the German government will put holocaust movies on prime time TV to educate the public. (Lately, it is now against German law to make such statements).

I know, because I speak German, and had German TV in Brussels, when I was living there (plus TV from the UK, France, Holland, Belgium, Italy, Spain, Luxembourg, etc, (oh how I miss the cosmopolitan life of Europe – but living anywhere is a compromise. I doubt whether I could tolerate European scientific conservatism and the lack of research funding in a region with double digit unemployment, having lived in Japan).

Nothing like this ever happens in Japan. You mention Auschwitz to a German, and he'll hang his head in shame. You mention the "Rape of Nanking" to a Japanese and he will probably not have heard of the place. There are even Japanese politicians who say it never really happened or is wildly exaggerated. Regularly the Koreans, Chinese, Singaporeans etc are outraged by statements coming from Japanese politicians concerning WW2 events. Japanese children are taught a lot of Japanese history, except for the period of the 1930s and 1940s.

I believe that relations between Japan and its neighbors will not improve much until the Japanese population is taught about its atrocities in the war, so that the Japanese population can feel ashamed, and then make that shame visible to their Asian neighbors. If the continental Asians can see that the Japanese population is genuinely ashamed of what it did, the way the Germans are ashamed, then the Asians will soften their hatred towards the Japanese.

But that hasn't happened yet. No Japanese wants to educate the public in such a way. For example, there has been no Japanese movie director who has made movies of Japan's atrocities from the continental Asian perspective. Doing such a thing would be felt by the Japanese to be traitorous, tarnishing the reputation of the Japanese people. (The Japanese are too insular and nationalistic to even contemplate such a thing. I believe the only way the Japanese will be taught about their atrocities will be by having non Japanese TV documentaries and movies come into Japan from other countries via global satellite TV).

If such Japanese movie directors existed their work would be considered too disturbing to Japanese “wa”. I’ve had Japanese (so-called) feminist journalists say to me that they could not possibly publish my masculist criticisms of fluffies in the national newspapers, because it would disturb the “wa” (harmony). They say that most of Japan’s women are fluffies, i.e. they are dependent financially on men. Such a criticism would disturb millions of people.

Such conservative reasoning I believe, partly explains Japan’s ignorance of its own war time atrocities. It is not acceptable in Japan to make Japan look poor in the eyes of Japanese. It’s the tatemae-honne distinction, so strong in Japan. (The tatemai is the surface diplomatic lie, and the honne is the underlying reality, i.e. what a person really thinks privately but doesn't express publicly).

The Japanese are so insular, they don’t care or are not even aware of what their neighbors think about them. I hope, now that global TV is coming the Japanese will be exposed to satellite TV documentaries on this issue (hopefully in English, or even better in Japanese) made by their Asian neighbors. Then maybe the long overdue Japanese guilt will start to grow, and relations between Japan and its neighbors can improve. At the moment, Japan has no friends. No other country particularly likes the Japanese or trusts them. The Japanese only have themselves to blame.

Relations between Japan and its neighbors are so bad, that the Japanese prefer to grow their own rice, so that at least

they won't starve if China or anyone else imposes a naval blockade on the shipping lanes, making food (rice) imports impossible. The Japanese pay a high price (literally) for their incredible insularity, both in terms of material standard of living (land prices and their 3rd world housing), but also in terms of the mistrust of their neighbors. This is so stupid. In my mind, the Japanese are simply "interculturally incompetent" and have a lot to learn about the rest of the world beyond the conceptual horizons of Japan's little island.

Minorities

Japan has a poor international reputation for its treatment of its minorities. The worst treatment occurs with the so-called "Burakumin" (or "Eta"), Japan's "untouchable caste", of which there are about 3 million. Historically, they were the butchers and leather craftsmen, which was considered "unclean" by Buddhist doctrine (Buddhism coming from cow-fetished India). If you are an Eta, and you hide the fact, you could today be fired on the spot from a major company if you are found out.

I have read accounts where young wives who were happily married with a baby have divorced their Eta husbands in shame, on discovering their real identities. Detectives are hired to see if a potential marriage partner has any "Eta ancestry". The irony of this outrageous discrimination is that the Eta are of the same genetic stock as ordinary

Japanese. You cannot tell the difference between the Eta and “clean” Japanese.

This blatant and cruel discrimination dismisses Japan (in the eyes of westerners) from any chance of belonging to that exclusive club of “civilized nations”. There’s more. From 1910 to Japan’s defeat in 1945, Korea was a Japanese colony. Koreans were not allowed to speak Korean in the Japanese controlled schools, and they hated the Japanese for it. Even today, 50 years later, the Korean hatred for the Japanese is so strong, that it is against Korean law to import popular Japanese culture in the form of CDs, video, etc.

In the colonial period, Koreans were transported to Japan as forced laborers. Today, there are about 700,000 Koreans living in Japan, most of them second and third generation. But, they are denied Japanese citizenship. They are treated as foreigners. Japan is a very closed society. It has a very strong “them and us” mentality, due to its cultural homogeneity and its geographical isolation. Pluralism is a foreign concept to the Japanese.

The irony is that Japan should feel highly indebted to Koreans, because in a certain common sense way, “Japanese are Koreans”. I discovered this nearly a decade ago at a neural net conference in California at a reception. Some Japanese looking conference attendees approached me, and I spoke to them in Japanese, “Nihonjin desu ka?” (Are you Japanese), “NO!” They said deeply offended, “We’re Korean!” I learned two things, 1) Koreans don't

like Japanese, and 2) I can't tell the difference between them. Their genetic characteristics are the same.

When I'm in Korea, I feel I'm in Japan, except that the clock is set back about 15 years (economically and politically speaking). Common sense says that homo-sapiens, the species, did not originate on an offshore island. The Japanese population had to come from somewhere. The archeologists say that roughly two thousand years ago, the last major wave of Korean immigration to Japan took place (about a million people).

The Koreans brought their customs and values with them, which became Japanese customs. Even Japan's Shinto religion which the insular minded Japanese like to think is their own, originated in Korea. (I have a book written by two American scholars who investigated the Japanese cultural debt to Korea, which asserts this. This book I bought in Korea). Later, it was via the Koreans, that the Japanese civilized themselves by importing Chinese culture – Buddhism, Confucianism, Chinese characters, Chinese governmental ideas, etc.

Over a millennium ago, the Japanese had great respect for the Chinese and Koreans, which at the time were clearly superior cultures. So genetically speaking, Japanese are (largely) Koreans (with possibly some South Sea Islander genes and others). There's a strong suspicion amongst western scholars who study Japanese history that the first emperors in Japan's long line of emperors were actually Koreans, and that the reason why these scholars are banned

from examining these emperors' tombs, is that they may find evidence to support this hypothesis.

I have a book called "Multicultural Japan" edited by Donald Denoon et al, 1996, of Cambridge University Press which says (p4), "The second wave of immigrants came from North-East Asia, most likely via the Korean peninsula. This migration continued for over a millennium through what are known as the Yayoi and Kofun periods (ca 400 BC to AD 700), and by the latter (Kofun) period there seems to have been considerable mixing of indigenous and immigrant groups as far as southern Tohoku.

About a million people left the continent in some "boat people" saga whose causes are only dimly understood, to settle the archipelago, until eventually the original Jomon peoples were outnumbered, perhaps by as much as 10 to 1 (according to Hanihara Kazuro). The migrants brought wet rice agriculture and bronze and iron technology. They settled northern Kyushu and western Honshu, either merging with and absorbing the aboriginal Jomon inhabitants or confining them to culturally distinctive formations in the "peripheral" regions of Hokkaido and Northern Honshu.

By the seventh century, these North-East Asian immigrants and their descendants constituted between 70% and 90% of the population of the islands (which might by then have amounted to five or six million people), and constructed a distinctive political and cultural order centering on the

court which emerged in the Kinai region in the vicinity of present day Osaka and Kyoto”.

The book also says (p6), “Even in the 1990s the long hand of control over the past is exercised in the form of a ban enforced by the Imperial Household agency over any excavation of 158 major tomb sites thought to contain the remains of imperial ancestors, one purpose of which is to limit the risk of “embarrassing” archaeological discoveries, particularly any which might throw light on the origins of the imperial family”.

What an insult to the Koreans! How intellectually and scientifically dishonest, and how contemptible as judged by westerners. If the world, and particularly the western world, hears about this, there will be an outrage against Japan. I wondered how much the Koreans know about this, so I asked a Korean friend of mine. He said, “Well, most Koreans know that the ancient emperors in Japan were from Korea and at least the ancient scholars and technicians were from Korea”.

I mentioned this strong suspicion to a Japanese good friend of mine (i.e. that Japanese are genetically Koreans, and that the first Japanese emperors were also Koreans. She said it sounded like a “black rumor”. “Why black?” I said, “Japan has an enormous debt to Korea!” She didn't buy it, and this was from a highly intelligent and educated woman, yet she too shared the collective Japanese attitude that such an idea is degrading to the Japanese.

God, no wonder the Koreans hate the Japanese. Imagine the British banning American scholars from investigating the tomb of William the Conqueror (if there is one?), in case they discovered evidence that he might be French. Do you think the French would tolerate that? Such is the incredible insularity and intercultural incompetence of the Japanese, in my view, one of Japan's biggest problems.

Japan cannot become a full member of the world community until it gives up such outrageous and mythical prejudices. Japan needs to wake up to modern science and acknowledge its (pre)historical cultural roots. The Japanese should treat the Koreans with reverence, because the Japanese are Koreans. They are the descendents of Koreans. Korea is Japan's "mother country". This message needs to be taught to the Japanese public.

It would help make the Japanese more cosmopolitan, more interculturally sophisticated, and would help induce a greater degree of war guilt, which is a prerequisite for Japan being forgiven and accepted by its Asian neighbors (that were invaded by Japan in the 1930s and 1940s) in a future Asian economic and political "block" (similar to the European Union (EU) or the North American Free Trade Agreement (NAFTA)), once China goes democratic, as hopefully it will with the rise of its middle class.

Emotional Poverty

It's interesting watching Japanese sex on TV. Japan is less puritanical than the US (not having suffered the Catholic sexual repression of Europeans – the Catholic leadership decided many centuries ago to keep the financial wealth of the church within the church and not see it dispersed by inheritance to the wives of its priests, hence marriage and sex for the priests of the Catholic church were banned. This ban created enormous sexual hang-ups with the catholic clergy, who transmitted their neuroses to their congregations.

Japan hardly suffered from Catholicism, before it was literally exterminated by the shoguns). But Japan is more puritanical than France or Germany. In the US you can't even see women's breasts on TV (unless there has been a very recent change). In Japan you can see full sexual intercourse after midnight, and sex type "game" shows, but when it comes to showing sexual intercourse, the penis and pubic hair part of the image is blurred. In France and Germany nothing is censored. You see everything.

However, oddly, Japan's tradition of publishing books for the public on sex techniques and advice for good sex is far less developed than in the west, hence there is a general ignorance in the Japanese population concerning modern approaches to sexual bliss, which in turn means that the Japanese suffer from "vanilla" (i.e. relatively dull, boring) sex. Japan does however publish wonderful erotica books, that are famous throughout the world, but such books, based on classic drawings that are centuries old, don't teach the Japanese public about modern sexual techniques. I

know several Japanese well enough to talk about such things, and they tell me that it is not the custom in Japan to put such things in public, i.e. in print. I've tried hunting down such books in major book stores in big cities, and find only "sex education" books (i.e. "where do babies come from" type texts for school children) but that's not what I'm after.

The result of this is that many Japanese hardly know about the G-spot, the cul-de-sac, female ejaculation, male prostate orgasms, Kegel exercises, multiple orgasms, ecstatic sex, and particularly the best of them all – continuous (hour long) orgasm. The result of this is that Japanese women remain largely sexually passive, expecting the men to take all the initiatives, which is boring for men, and both sexes are ignorant on how to give each other continuous orgasms, which is now all the rage in the west.

For those who don't know what I'm talking about, let me digress a bit here, because such knowledge can change lives, and is terribly important. Such knowledge should be put on TV to increase a nation's GNH (Gross National Happiness). It's possible for men and women to have an orgasm that does not stop, that goes on for many minutes, giving the ultimate in human ecstasy. To get a woman to have a continuous orgasm, all you have to do is simultaneously finger her G spot and clitoris (and maybe anus too) for many minutes, bombarding her with sensation.

If she's not sexually inhibited, and usually if she loves her sexual partner, and her vaginal muscles are well exercised

(either from lots of sex or Kegel exercises) thus making them very sensitive to stimulus, she should come and come until a threshold is reached, after which she switches to continuous orgasm. These sensations are so strong that initially a woman will usually be afraid of the power of her own body.

This fear can make her stop her man from stimulating her, but with practice, she should get used to it, and allow herself to climb to greater heights of sensation. A woman who routinely has continuous orgasm will worship sex, and the man who gives it to her, and will want sex frequently, which is nice for the man as well (so long as he's not too fat, unfit, and tired all the time).

Frequent successful sex generates joy in a couple and makes life really worth living, but since relations between the sexes in Japan are the worst I've seen in the 20 odd cultures I'm familiar with, it's obvious to me such joy in Japan barely exists. (Only 5% of Japanese husbands and wives mention their wives and husbands as their main joys in life, according to recent surveys. In Japan, the company takes priority over wife and family in a Japanese man's life. To westerners, these traditional Japanese priorities seem masochistic and sick.

Fortunately for the Japanese, the younger generation is rejecting them, but the attitude gap between westerners and Japanese on this issue is still enormous. It generates a lot of hostility and misunderstanding between east and west). The country with the healthiest relations between the sexes that

I have seen is France, the country internationally famous for “l’amour”, where the men are romantic and routinely flatter and caress their women, and the women are seductive and nurturative to their men (and earn 90 cents to the male dollar, as against American women’s 70 cents).

To get a man to continuous orgasm, the woman masturbates his penis with her hand to the brink of orgasm, then squeezes the penis head with her thumb and forefinger, which decreases the sensation. The man also needs to practise approaching the brink multiple times in one session, without going over the top into ejaculation. He can do this on his own with masturbation. Over many minutes, sexual tension builds up enough for him to have continuous orgasm, where the semen doesn't shoot out, but just oozes out continuously).

Such bliss is virtually unknown in Japan, because there are no means to spread such new knowledge. I hope this essay helps in this regard. If orgasm (all 5 seconds of it) is the nicest thing there is for you, then try to imagine 10 minutes of it (or a hour) if you’ve never had it. If you want to know more about continuous orgasm, go buy books (if you are a westerner) or look up the key words “one hour orgasm” on the web, and enjoy!

Japan is not only sexually underdeveloped. A similar comment can be made concerning the level of development of loving between couples in Japan. Good loving and sexuality between Japanese couples is so poorly encouraged by the culture, that as a consequence, a huge

(quasi prostitutional) sex industry in Japan exists, offering anything you want. Traditionally, Japanese business men often prefer to spend their time with these “water trade” women than with their emotionally and sexually estranged wives.

Sex roles in Japan are so traditionally polarized, with husbands and wives spending so little time with each other, that love often dies between couples. For most Japanese husbands, loyalty to the company takes higher priority over loyalty to the wife and family. (This attitude seems emotionally sick and morally inferior to westerners, who have the freedom to change jobs and companies as they choose, and have the time to be with their families.

Good relationships with wives are vitally important to western men. In the west, both husbands and wives usually work full time, but only 8 hours a day, not 11 hours a day as in Japan (plus 3 to 4 hours commute time for many millions of Japanese men in the big cities). Western couples have the time to be with each other (“TT” or “Together Time”), and to develop their relationships. Western culture encourages this, with the result, I believe, that western GNH (Gross National Happiness) per capita is far higher than in emotionally impoverished, masochistic Japan. With Japanese men, a vicious circle is set up.

They spend so much time at their companies that over the years, love with their wives often dies. The men come home so tired that often they are not interested in sex with their boring housewifey wives. The wife starts to nag and

he begins to avoid her (and the kids he hardly knows, because they are usually asleep before he gets home). By staying longer hours at the company, or drinking sake after work with his colleagues or clients at hostess bars, in the “water trade”, he neglects his wife even more, who then nags more, tightening the vicious circle.

With the strong housewife ethic which still has not died out in sex role backward Japan, the husband cannot just throw her out easily if he wants. He’s enslaved to her, and she to him, for financial dependency reasons. Japan’s traditional sex roles create a lot of marital misery because couples who should divorce don't, so millions of Japanese husbands and wives continue to lead emotionally impoverished “half lives”.

Consider the sheer size of the “water trade”. I have read that more money is spent today per year in the water trade than Japan spends annually on its military defense (i.e. 1% of GDP). To me, the size of this market is a symptom of the mass poverty of loving and sexual relations between Japanese husbands and wives. I consider Japan as one of the poorest nations on earth in terms of its sexual and emotional wealth.

This aspect of Japan I find truly abhorrent. Fortunately, the young generation of men are tending to avoid the water trade and to go home earlier to their wives. Both husbands and wives of the younger generation have been influenced by the western model, shown in Hollywood movies, etc. Now that more Japanese women are into careers (although

not a lot), women can divorce their sexually and emotionally negligent husbands more easily.

The divorce rate in Japan is now 1 in 4, half of America's, and rising. It will eventually hit 1 in 2 as well, since surveys have shown that when older Japanese women are asked if they had their lives to live over again, would they marry the same man, half said no. The threat of divorce, initiated by wives, puts pressure on husbands to be less negligent, and indirectly puts pressure on company bosses to lower their workaholic expectations they have traditionally imposed upon their younger subordinates.

Corrupt

Japan is incredibly corrupt for an economic superpower. One expects poor 3rd world countries to be corrupt. It's one of the reasons why 3rd world countries are 3rd world. But on the whole, westerners expect Japan to be as honest and above board as are western countries. Unfortunately, that's not the case. In the 5 years I've been in Japan, never a week goes by without some Japanese politician, bureaucrat, or businessman, being hauled into court on corruption charges.

It never stops. It just goes on and on. I suspect that Japanese corruption is a historical leftover from when Japan itself was a 3rd world country. (In many social respects, it still is, in my opinion). The level of development of grass roots democracy is so weakly developed in Japan that people don't complain, so it is

easier to behave in a corrupt manner than in a country where grass roots democracy is strongly developed.

The Japanese have an honesty/dishonest dichotomy built into their language. “Honne”, in Japanese, means what one truly thinks privately. “Tatemae” is what one says publicly, i.e. a white lie. This dichotomy is so strongly developed in Japan, that westerners feel that Japanese are sneaky, and cannot be trusted, because they say one thing and do the opposite. Other Asian nations, with a similar dichotomy, understand the Japanese better, but even they don't trust the Japanese much (according to what I've read on continental Asians' opinions concerning the Japanese).

My suspicion is that corruption is a part of daily life in Japan, and that only the spectacular cases get to be reported on TV (i.e. only those which are so blatant that they come to the attention of a passive and obedient Japanese media). At least the top level corrupters are regularly hauled off to jail, so at least that is to Japan's credit, but the fact that these cases just keep coming and coming and coming, is boring, and makes westerners living in Japan feel that Japan is morally inferior to the west in this respect.

Americans are much stricter this way, and more likely to speak up if their bosses do something shady. (In Europe the level of corruption depends on which country you are talking about. The two worst are thought to be Italy and Belgium). I hope that when (if?) Japan becomes more grass roots democratic, that the level of corruption will diminish a lot.

Superiority Myth

When I was living in Europe for 20 years (as an Anglo-Saxon, married to a French speaking Belgian woman in the second half of that period) I found the chauvinism of the French insufferable. I don't mind arrogance per se, so long as it's justified, i.e. backed up by facts. The Americans are (unconsciously) incredibly arrogant, but in their case they have a right to be so. The US is the planet's dominant culture, driving the rest of the world into (American) modernity.

America wins nearly all the Nobel prizes now. America is pioneering the information age. America makes the blockbuster movies. America sends men to the moon and satellites to the stars. America generates most of the popular music. America builds nuclear aircraft carriers. America keeps the world's peace. America, America, America.

As an English citizen (i.e. switching an Australian passport for a British one, to be able to work in the European Union countries), I can easily make out a case for British arrogance. Britain has won a lot more Nobel prizes per capita than the US. Britain invented modern parliamentary democracy. Britain started the industrial revolution that is sweeping the world. Britain made English the world language, Britain made America (a British baby that grew

up). Britain and America together have dominated the 19th and 20th centuries. Britain, Britain, Britain.

Germany has a right to be arrogant (but less so, due to its militaristic tendencies). Germany dominated science before Hitler. Germany has given the world most of its classical music. Germany has produced most of the world's great modern philosophers. Germany is famous for its quality engineering. Germany, Germany, Germany.

What have the French to crow about? What has France given the world? Well, there's modern painting and sculpture, perfumes, haute cuisine, fashion, photography, movies, l'amour, joie de vivre, diplomacy, nationalism, etc. France might run about 4th or 5th in the world in terms of general status levels as judged by other countries, but is definitely not tops. The Belgians used to joke that "one could get rich by buying a Frenchman for what he's worth and selling him for what he thinks he's worth".

French life is centered in Paris which is rather distant from France's international borders, with the result that the French are rather insular. Historically, the French were the dominant culture in Europe for several centuries and this experience conditioned them to think they are superior. It's only recently that the French have got international cable TV (a decade behind the Belgians) which teaches them that they are not so special.

Combined with their current double digit unemployment figures, the French are going through a bit of an inferiority

complex at the moment, as they wake up to the international reality that the US is pissing on them in terms of global dominance (“the arrogant inferiority of the French”). Interestingly, America’s lack of upper class subtlety (the European upper class did not migrate to the US or anywhere) is a source of constant sneering by the French towards what they see as “American vulgarity”.

Now, what about the Japanese? Are they arrogant? You bet. Many, many Japanese believe deeply, strongly, that they are “ichiban” (best, first, No.1). As with the above nations, there is always an element of truth to each of these country’s claims to superiority. In the last few decades, the Japanese have skyrocketed in terms of their economic standard of living, an achievement that really counts for something in the modern world. But it’s more than that. Japanese believe that they are special, unique.

There is a huge literature (called “nihonjinron”) which attempts to explain (often rationalize) why the Japanese are special or different or superior. Many countries like to think they are tops. It’s flattering to believe such an idea. Unfortunately (or fortunately) for Japan, there are no international land boundaries, so foreigners are not easily met, who can provide a counter ideology to the notion of Japanese superiority.

Because of the incredibly homogeneous nature of the Japanese, and the extreme insularity (living on an isolated island, with huge cultural and linguistic barriers which act in both directions between Japanese and foreigners, plus

the kanji (i.e. the Chinese writing system) barrier that frightens off westerners, etc), Japanese almost never meet people who challenge their beliefs in Japanese superiority.

Hence this belief is very powerful. It makes Japanese quite obnoxious when making international comparisons with them. They can be extremely close minded about this, having been “educated (indoctrinated) all their lives that they, the Japanese are the world’s master race. It’s like a religion to them, an article of faith, and one that rational argument has little impact on.

There’s no denying that Japan has a rich culture, but there’s also no denying that most of it is due to foreign borrowing (plus a bit of local adaptation). Japan’s social structure makes creativity very difficult (due to a centuries’ old, high density, homogeneous population, which generates incredible social pressure to conform to group norms in order to inhibit socially disturbing individualistic behavior).

It is thought that Japan’s Shinto religion (a primitive animalistic polytheism) came from Korea. Its Buddhism and Confucianism, it got from China, via Korea. Its style of government bureaucracy it copied from China, so too its writing system (i.e. a clumsy character based system, instead of having the ingenuity to create a phonetic system which could be learned in a hundredth of the time). In the modern world, Japan has copied the western powers unashamedly. Today, America is the country to be copied.

In just about any country in the world except Japan, it is thought that a country which copies is considered to have less status than the country which is copied. Leaders are respected, copiers are not. Despite this, there are still far too many Japanese who believe they are tops. This irrational arrogance, this myth, I believe, may have played a role in Japan's decision to bomb Pearl Harbor. The planners of this raid reasoned that the fighting spirit of the Japanese was so superior to the flab and excess of America's culture that the Americans would not want to fight, and thus leave Japan to keep its own colonies in the Asian sector.

The Japanese hunger to colonize was derived from their desire to copy the dominant (European) powers of the time, who were busy colonizing Asia and Africa. It looks as though Japan has been parasitic throughout its history upon other cultures for its innovations. It seems rather incapable of inventing its own (with perhaps the exception of the walkman and karaoke).

Some of the more level headed of these Japanese Pearl Harbor planners were worried about the industrial capacity of the US, but they were overruled. The result was that the Japanese took on a country with some 3 to 4 times its industrial productivity, and double its population, i.e. a total of about 6 to 9 times Japan's total industrial capacity. No wonder Japan was smashed.

America was so powerful at the time that it could crush Germany and Japan simultaneously, even with only half of

its eligible men in the military. It was madness of the Japanese to declare war on the US. Japan was then bombed flat as a result, as was Germany. If the Japanese had not been so arrogant, so insular and ignorant of how other people think, they would have saved themselves a lot of suffering (and the lives of 30 million continental Asians they murdered in the 1930s and 1940s).

Actually there is some evidence confirming the quality of the fighting spirit of the Japanese. It comes from what happened during the battle for Okinawa (an island within bombing distance of Japan that America critically wanted, in order to bomb Japan with their B29 bombers, and which Japan would defend to the last man to avoid being bombed. (This Japanese fear was justified, because shortly after, the Americans murdered 100,000 civilians in one night of fire bombing on Tokyo. This number was greater than the number who died by the A-bombing of either Hiroshima or Nagasaki).

The kill ratio (i.e. the number of Japanese killed by Americans to the number of Americans killed by Japanese) was equal. This kill ratio, plus the fact that several million Japanese troops were based in Japan in the summer of 1945 and tens of millions of reservists as well, persuaded the Americans that it would be in everyone's interest to A-bomb the Japanese, rather than invade Japan with street to street combat.

Sir Winston Churchill estimated the casualties would be in the range of a million Americans and even more Japanese,

who were desperately short of weapons due to America's successful naval blockage and bombing of Japanese factories. Even high school girls at the time were being trained to attack American troops with sharpened bamboo poles.

So to stop the war, and minimize the number of deaths on both sides, President Truman decided to drop the bombs. The alternative was a land invasion of Japan by the Americans that was well planned – Operations Olympic and Coronet, in which the estimated number of American casualties would be about 1,000,000 (with far more Japanese civilian deaths). So the bombs were dropped, resulting in less than 200,000 Japanese deaths and no American deaths. Japan surrendered unconditionally. The US had utterly defeated Japan.

Japan has yet to go through the same learning of its own international inferiority as in France. There was a time in the 1950s when Japan truly admired the US, and that is still true today to some (diminishing) extent, due to America's defeat of Japan. But the younger generation of Japanese seems to have forgotten the war, and have imbibed the age old belief in Japanese superiority. I doubt whether things will change much until Japan gets global TV, bringing programs from other countries, to teach them that they are not so special.

I believe that Japan could be No.1 economically in less than a decade (i.e. possessing a GNP larger in absolute size than that of the US (in exchange rate terms)), but that does

not make me tolerant to silly claims that the Japanese are a “superior” people (whatever that means). Japan is tops in some things, inferior in others. I’ve lived in too many countries to be open minded towards blind chauvinism. In this respect, at a deep level, the Japanese are worse than the French. (Monsieur Chauvin was a character in a French play whose behavior was so excessively pro French, that he became a legend).

Sado-Masochism

Whenever I listen to my Japanese colleagues at my lab chatting amongst themselves, I usually have the impression that their personalities have been collectively stunted, i.e. that virtually all of them have been through the same type of parenting and socialization which has inhibited them from fully expressing themselves emotionally and intellectually. It’s most frustrating listening to them. I feel that most Japanese are unable to simply express who they are without reserve, without worrying excessively all the time how their opinions or behavior will affect others.

In some cases, observing Japanese on the train, I would say that some of them have had their personalities virtually destroyed. They don't even have to open their mouths. One can just see that they have been psychologically crushed. Why is this? What is going on with Japanese child raising that generates such massive and powerful inhibition of ones natural joie de vive? Why are Japanese so inhibited emotionally and intellectually?

Ultimately, I speculate, it is due to Japan's island habitat and its history of rice growing. The idea of using rice to feed the population was imported from China and Korea more than a millennium ago (i.e. about 2000 years after the Chinese were doing the same thing). Rice is a very efficient food source, i.e. many calories per square meter can be grown, and so in the early years of Japanese rice cultivation, population growth was rapid. The old hunter-gatherer lifestyle could support only a small population, because food efficiencies were low, so once rice agriculture was introduced, more children could survive – until Japan ran out of land. Experiments show that if you put too many rats in a cage, even if there is plenty of food etc, then their behavior will become neurotic. I believe that the Japanese are fundamentally neurotic for the same reason as the rats – overcrowding.

Over many centuries, the Japanese have learned that to keep the collective peace, it pays to inhibit the personalities of its population so that they do not express freely their feelings and opinions, because if they did, society suffers. Japan has half the population of the US crammed into a fifth of the area of California. For many centuries, the Japanese have lived with small housing, with 3 generations squashed together. To keep the peace, traditions of a public and private self have developed. If you are Japanese, you will present a stereotyped mask to strangers.

One presents one's true opinions (honne) to new friends only very gradually, as the level of familiarity increases. I thus believe that the major reason why Japanese have such masochistic opinions is due, indirectly, to rice. As far as I know, all Asian cultures have this "face" psychology (i.e. the public mask for politeness reasons), but Japan has it worst, because it is an island whose political boundaries are rigid (i.e. the boundaries are set geographically, not militarily).

I think the above gives an idea to explain Japanese masochism. Even today it is not difficult to see clear cases of this phenomenon. For example, it is a regular occurrence on Japanese TV to see masochistic competitions, e.g. who can stay in a bath of ice water the longest, who can eat the most rice cakes, etc. These game shows are very popular, and reflect a collective preoccupation of the Japanese with self-inflicted pain. To westerners this just seems sick.

Now, what about Japanese sadism? It is well known amongst psychologists that masochism and sadism are closely linked. That is why the two tend to be mentioned in the same breath: sado-masochism, rather like electro-magnetism. The Japanese have an international reputation for being one of the cruelest peoples on the planet. They are still hated by their Asian neighbors (at least by those people old enough to remember what the Japanese did to them in the war). I have read that the Vietnamese for example, have more or less forgiven the Americans, but have not forgiven the Japanese (who invaded the country several decades

before the Americans), who were so much crueler. Where does Japanese cruelty come from?

Again I can only hypothesize. I suspect it is a consequence of their supreme insularity and frustration which comes from those factors which make the Japanese such masochists. For example, when the Japanese were invading the Asian continent they were temporarily freed from the social constraints they suffered daily in Japan. These constraints were severe, due to the fascist nature of the government of the time. They could express those frustrations on their victims without fear of punishment.

The Japanese soldiers' frustrations were severe, hence so was their cruelty. The Japanese did not respect the Geneva Convention. They treated their prisoners like animals, who then died like flies. The Japanese made themselves hated. Also, the insularity of the Japanese is so strong, that it is easy for them to see their enemies as subhuman. Even today, with my best Japanese friends, with whom I have a strong genetic compatibility, they half jokingly refer to me as "Martian". I have never met a more insular minded people than the Japanese.

It is much easier to mistreat people when you do not understand them, or when they appear alien to you. For example, the Nazis and the Japs committed massive war crimes (both killing tens of million of people) yet the American soldiers had more respect for the Germans than the Japanese, due to a greater level of familiarity. German culture is not so different from American, whereas the

“Japs” in the war were often treated like insects. The “Japs” treated the western prisoners of war (POWs) in the same way, but with far greater cruelty.

Japan is still sadistic. Bullying is a major problem in the schools, especially at junior high-school level (when the educational authorities really start turning the screws to make their students “true Japanese”). The conformist social pressures on the students, and their very heavy work load, with after-school crammer schools (Jukus) and the endless pressure to learn the Chinese characters and their combinations, create a hot house of frustrations, which are often expressed in the form of bullying. This bullying regularly becomes so severe that some students suicide.

One reads regular reports in the newspapers of student suicides due to bullying. To stop the bullying, one cannot just ease up the educational pressures. One needs to remodel the whole social system in Japan, and that will not happen without a major crisis. I’m hoping that the current economic failure that Japan is now undergoing may be strong enough for the Japanese to fundamentally rethink their inferior (by western standards) social structure. The Japanese suffer so much from their own social ignorance and insularity. There are better ways to live.

Intellectually Sterile

I don't admire the Japanese intellectually. In fact I’m quite contemptuous of them in that respect. I grew up in

Australia and left that country because it was not intellectual enough for me. I wanted to live in a culture which valued my values (i.e. which felt passionately about ideas and debated them with relish), so why am I living in Japan if I feel the same way about the country? Well, for reasons of money of course. If Japan can outperform America in terms of investment in blue sky scientific research, and is willing to import large numbers of talented foreign researchers, then I can surround myself with these foreigners and largely ignore Japanese intellectual sterility. A researchers' first priority of course is to be employed in one's chosen field.

I admire Japan's ability to make money, its high savings rate, and its willingness to invest in high tech, but as intellectuals, the Japanese are pygmies in my view. They are far too inhibited to be good intellectuals. Some cultures are better than others in fostering intellectualism. In Japan, the emphasis is on being considerate to others, not challenging them intellectually, or making them lose an argument (and hence "lose face" in the Asian sense). Japanese people have the reputation of quitting an argument as soon as it gets "interesting" (as seen by Americans), meaning that as soon as a potential disagreement pops up, the Japanese will bow out.

I have seen a few free-for-all discussions on Japanese TV, amongst Japanese journalists and invited experts, so it is possible, but on the whole, expecting real intellectuality, of world class standards, from the Japanese is a futile exercise. For me to want to stay in Japan I will need to get the best of

both worlds, i.e. the money making ability of the Japanese, combined with western creativity and the “shooting from the hip” intellectual freedom that I so love about westerners (Americans, British, Germans, French, etc), all of whose languages I can speak (after living 20 years in Europe).

Japanese on the other hand are so preoccupied with not making the other guy lose face and counting every possible negative nuance, that a free intellectual exchange becomes impossible. To a passionate western intellectual, it is revolting. Even some Japanese intellectuals say the same thing as I do, equating Japan with a “brainless economic giant”, a “cultural black hole” (i.e. sucking everything in, giving nothing back).

The Japanese intellectual record over the centuries is appalling. The Japanese have won only 5 science Nobel prizes. There are no world ranking Japanese philosophers or ideologists or great thinkers. (The Japanese don't seem to like abstractions very much, preferring the concrete). The intellectual influence between Japan and the west has been largely a one way street. Lately, the Japanese have been taking out a large number of engineering patents (in fact half the world's total), but that's not real creativity in my book.

The Japanese are, without question, superb engineers, but engineering is largely a matter of effort, of taking pains and making 10% improvements time after time, which the Japanese are very good at. I don't deny that the Japanese are diligent. What is lacking in Japanese culture is true

creativity, i.e. going outside the norms, by inventing something quite new. I experience this regularly with my young Japanese “students” that I have to supervise for mini-projects. They work well when it’s clear to them what the task is, but if I give them an open ended challenge, they are lost. I suspect that their education and culture does not expect them to express themselves, to say what they think about an issue.

There is something terribly wrong with the Japanese education system. I think someone should drop a neutron bomb on the Japanese Department of Education (Monbusho). Monbusho does untold damage to the country, and makes foreigners like me have contempt for Japanese intellectual poverty. Japan seems parasitic on other countries, particularly the west, for its ideas because it seems incapable of generating its own. For a western intellectual, such a failure is truly contemptible.

Respecting Individual Liberties

As a westerner, one of the aspects of Japanese life that truly disgusts me (and I’m pulling no punches here, I mean, truly disgusts me) is the lack of respect for personal liberties that Japanese show each other. I will add progressively, incrementally, examples of the type of thing I mean to this section. Westerners are accustomed (so accustomed as to be unconscious at times) to certain individual liberties that are not part of Japanese social custom. Japanese values are

much more groupist, and conformist, and in many respects anti-democratic.

Remember that Japan is not a real democracy. The democratic veneer which does exist was imposed on a profoundly authoritarian people, with centuries of dictatorial tradition. The Japanese people are not grass roots democrats. They are passive and uncomplaining (the strong Buddhist and Confucianist influence on Japanese minds). Such a people are easily pushed around by their superiors, and generally exploited. Westerners would not tolerate many aspects that are part of daily life in Japan - for example -

a) Employment Imprisonment in Major Companies

If you are Japanese and you join a major company, you can expect to be employed for life. This has certain advantages in terms of financial and emotional security, but it's a two-edged sword. You are also imprisoned in that company, because if you quit, you may find it impossible to get a job in another major company. The reason for this is that the employers of the other company reason that an employee who quits the first company may also quit theirs. Japanese employers expect their employees (in the major companies) to stay in their company for life.

Quitting implies disloyalty. This attitude is profoundly shocking to westerners, and shows a total disrespect for the individual needs and desires of the employee. If it ever happened to me, I would just say to Japan, "F... you, I'm

outta here!” If it happened to me in the west, I would pick up a rifle and start killing people. Such a liberty, i.e. the freedom to choose one’s job, what one does in life, the freedom to change careers mid-stream, is so fundamental to westerners, that to be deprived of it would become a “war issue”.

Japan’s “employment imprisonment” would not be tolerated in the west. The lack of this basic freedom makes westerners look upon Japan as a third world undemocratic socially inferior country. It’s one of the many reasons why I feel I am paying a high social cost living in this country, that in many respects I feel is too socially inferior to be worthy of me. Often I ask myself, “What am I doing in this social backwater?”

b) Early Retirement Age

Many companies in Japan force their employees to retire at 55. Since Japanese men are living to 75 on average and women to 80, this is a vicious miscarriage of justice. But as usual, the Japanese people are so politically grass-roots impassive that they just accept it. They are so insular, so ignorant of how things are done in other countries, that such customs don't seem barbaric, they are just “normal”. So, after retirement, someone fully functional and competent has to find another job, often with inferior pay and status, and work in it for another decade or more. This custom is unworthy of a nation hoping to be labeled “civilized”.

Now that Japanese young women are refusing traditional Japanese marriage (where the couple consists of a workaholic husband, and housewife wife, with the two rarely seeing each other), at an alarming rate (half of Japanese women of 30 are unmarried), the birth rate has plummeted. Japanese society is now the most rapidly graying society on the planet. The retirement age will have to be raised. In fact, I would like to see the concept of compulsory retirement thrown out altogether.

Compulsory retirement, irrespective of one's performance level, based purely on age, is a form of ageism (discrimination based on age) and is vicious. Older people ("grey panthers") should organize themselves politically and change the retirement laws and customs, as has been done already in the US. If someone gets senile and useless, then they can be fired (retired) or demoted as any other incompetent employee of whatever age.

c) Individual Privacy

Can you imagine a western company telephoning the parents of a young female employee on Friday evening at 11 pm to check whether she is home, and not out staying the night with her boyfriend. This sort of thing still happens in Japan. If word gets out that a young woman is staying the night elsewhere, then her "bad reputation" will reflect on her (ultra-conservative) company, and since the Japanese are such groupists, the company feels it has the right to infringe upon the young woman's privacy in such a blatant way.

If a Japanese company did that in the west, they would be sued, and would be featured in the media. In fact, it just wouldn't happen in the west. The west has much greater respect for peoples' private lives (with the exception of puritanical Americans with their attitudes towards their politicians' private lives).

d) Ban the Pill

After about a week in Japan, I learned that the mini-pill was still banned. I was really disturbed by this. It implied to me that Japan is not a democracy, that the Japanese women's movement is toothless, and that the Japanese people must be supremely insular to believe that the mini-pill has damaging side effects, as claimed by the Japanese Medical Association and the Japanese Health Ministry.

These warnings completely ignore the fact that hundreds of millions of women in the west take the pill. Does the Japanese public believe that western doctors are less competent than Japanese doctors? Actually, such reasoning does not occur to the Japanese, so insular minded are they. They live in their own little Japanese island world, and passively obey and believe what their doctors tell them. So Japanese women are not given the right to control their own bodies, nor to have freer sex that western women have taken for granted since the early 1960s.

The Health Ministry simply dictates that the mini-pill will remain banned because of the risk of Aids, that Japanese

should stick to condoms (widely used in Japan). This is dictatorship, but to the Japanese it is normal. Japan is not a democracy. For a country to be a democracy, the population has to complain, and put pressure on its politicians to change the country's laws. The politicians have to control the creation and implementation of the laws, with the assistance of the bureaucrats. In Japan, the bureaucrats are the effective leaders, dictating as they choose.

The population is passive and obedient, and don't complain. Even if they did, the politicians are rather useless, and corrupt, and don't do much. My impression is that in terms of the development of a grass-roots-level democratic feeling, the Japanese are more than a century behind the west. To transform Japan into a real democracy, the population will need to vote for strong politicians who insist on telling the bureaucrats what to do rather than vice versa. In Japan, it is the bureaucrats who play a key role in proposing new legislation!!

It really was a tragedy that the cold war got started when it did. In the first year of the American occupation, Japanese culture was being strongly democratized, but then along came the Cold War with the Soviet Union and the fall of China to the Communists. The Japanese are too insular and too uncreative to be able to learn democratic ways of thinking in a hurry. Spontaneous democratization within Japan is thus very slow. They are not creative enough to do it quickly on their own, and they are too insular to be influenced quickly by the west (although hopefully that may change soon with the rise of digital TV with its

hundreds of foreign (western) channels with their (unconscious) democratic messages).

The Future

21st Century Globalization

I suspect strongly that most of contemporary Japanese culture will not survive 21st century globalization. Actually, this may not be such a strong statement (although at first glance it sounds very insulting to the Japanese) because most of the culture of any country will probably not survive 21st century globalization. The planet is now only a few years away from a new kind of warfare, namely the war of ideas.

I believe that global television (i.e. stationary orbit, cross linked inter-satellite, digital TV, which will allow any county to uplink a TV signal, have it cross linked to several other TV satellites directly, and then multiply down linked to the full surface of the earth, so that people anywhere on the earth can capture TV signals from the sky on their wrist-watch TV receivers from anywhere else on the earth) will prove to be the greatest social and political revolution on a planetary scale in the past 100 years. Wristwatch TV receivers will be mass produced and become dirt cheap, and everyone on the planet will own one.

To be deprived of one will mean being excluded from world culture. Pressures will then rise for everyone to speak

English, because most of the programs sent up will be in English. As a higher proportion of people speak English, the higher the probability that programs sent up will be in English, thus setting off a snowball effect. With English as the world language (it already is but just less widespread), ideas between people who were previously intellectually and culturally isolated, can begin to spread easily.

A war of ideas will then begin and only the most popular ideas will survive. This means a mass planetary culturecide will take place. Thousands of cultures will be wiped out. In fact, this process has been going on for a century or more, but on a smaller scale, where a nation state absorbs the small primitive cultures into its own. What I'm talking about is French culture, German culture, American culture, etc all being absorbed (and mostly destroyed) into one huge global culture which will combine the "best" ideas of the planet.

As soon as anyone anywhere has a good idea, it can be spread at the speed of light to everywhere. People will be educated from global not national media. This will make people think globally, not nationally. This is starting to happen now with "CNN", and "BBC World", but these two TV channels still have strong national biases. Fresh young enquiring minds will be exposed to ideas which compete with those of their own traditional local national cultures.

Most of these traditional ideas will perish, because the young people of all countries will choose to reject them if they see that these ideas are inferior to others. This

rejection will generate tremendous social tensions, and powerful generation gaps, as the young adapt to the world culture and the aged remain in their old familiar national cultures. Of course some of these older national cultural ideas will survive and even be taken up as the global norm, but only the best.

For example how will Americans react when they finally learn of the level of contempt that Europeans have for their “religiosity”, their nationalism, their middle-browed media, their gun laws, their 200 year old presidential constitutional system (which elects popular idiots belonging to the opposite party of the elected majority and thus creating deadlock) etc? How will the British react, to discover that the French sneer at British puritanism (which unfortunately, the Americans inherited)? How will the French react when they see the Americans laughing at the “arrogant inferiority of the French”?

How will the Germans and the Swedes react when they learn that few other people like their emotional coldness? How will the \$300 a year Chinese peasant in the poorer western provinces react at seeing Japan’s material living standard, now over \$40,000 a year (which together with Switzerland and Luxembourg, is the world’s richest – with the US at \$28,000. Actually I’d prefer to be able to read the PPP (purchasing power parity) statistics, rather than these exchange rate based comparisons, which are rather misleading)?

How will millions of intelligent third world students, living under dictatorships, react, when they can read democratic literature easily on the world's tele-communications media? How will little countries react to being swamped by new ideas and developments, all coming from elsewhere? Planetary culture will be one huge washing machine, churning up everyone, revolutionizing everyone's mind. The big, brilliant, intellectually creative, influential countries like America, Britain, Germany, France etc will obviously make contributions to world culture.

Probably the most any one country will make will be about 10% (and possibly 20% in the exceptional case of America, still the most creative and dynamic country on the planet. (The US has won 175 science Nobel Prizes, (1901-1995), Britain (with a quarter of the US population) 66, Germany 61, France 25). It will be interesting to see if 21st century global culture will be dominated by the Anglo-Saxons, as in the 20th century, or will it be led mainly by the Chinese and the Indians, each with a population of over a billion).

The question now is, "How much of today's Japanese culture will survive?" A second important and distinct question is, "How big a contribution will Japan make to world culture"? As Japan's young people start getting world TV, the web, cheap 3D holophones, etc, and learn to speak English well, what will happen to today's Japanese cultural values? In my opinion, I see most of Japan's traditional values dying, except the valuable ones such as "gambare" (which may be copied by other peoples), the attention to detail (which generates high quality products),

Japan's sense of beauty, Japan's stress on the importance of education (if intelligently done), Japanese arts, etc.

I would guess that Japan will contribute about 5% of world cultural input. This might sound small, but consider the mathematics of the number. There are about 200 countries, so if each country contributes equally, i.e. 0.5% each, so Japan's figure is 10 times higher than the average, a major contribution. But so much of today's typical Japanese mentality, the lack of creativity, the group pressures, the masochism, the insularity, the intercultural incompetence, the education system, the lack of democracy, the dictatorship of the bureaucracy, the powerlessness of women, the enslavement of men, the emotional poverty, etc. will probably all be swept away.

As evidence of this, I only have to look at Japan's young generation, who are rebelling against traditional Japanese values. They want a greater degree of personal freedom, and look mainly to the US as a model (although not uncritically - the US also has many problems which hopefully will be swept away as well).

Once Japan becomes linguistically competent (i.e. can speak fluent English) it can lose its insularity. I see an explosion of intellectual creativity becoming possible amongst the Japanese. (Interestingly, in the 19th century, the Americans had a reputation amongst the Europeans of being copycats. The US caught up with Europe economically around the turn of the 20th century, but then took another 50 years to become truly creative and to lead

the world. Now that Japan has caught up with the US economically, how long will it take Japan to become creative? Without creativity, Japan cannot be No.1 in the 21st century). The traditional emphasis on “wa”, and its inhibition of criticism, can be swept away by creating a stronger form of Japanese popular democracy.

With Japanese rulers under popular democratic control, Japan’s financial resources can then shift away from company investment towards social infrastructure, getting rid of the 3rd world housing, by building upward with modern earthquake resistant technologies, and doubling the number of square meters per person. With western levels of living space, the old pressure behind the need for “wa” will no longer exist. Japanese can then feel as free to criticize each other (a prerequisite for a democratic and thriving intellectual and scientific life in the country) and to express their personal opinions (their “honne”) as westerners have always done.

I suspect that the Japanese will keep their diligence and discipline (which are desirable qualities), so that when combined with the new creativity and personal freedoms, Japan would really make a mark in the world. To do so, I strongly suggest that Japan embark on a policy of aiming to overtake the US as No. 1 in as many fields as possible. I believe Japan has the potential to do it, as long as its savings and investment rates don’t drop to western levels (a real possibility if Japan becomes a true democracy).

Japan should then, in my view, deliberately create the world's best research labs, bringing in the best people in the world, in large numbers, paying them top salaries that no one else can compete with, supplying wonderful equipment, combining the best features of the Japanese labs with the best features of the western labs, making these labs very gaijin friendly (by giving the gaijins a large degree of control over the day-to-day running of the labs). Once enough top people come, creative synergy will be generated and new technologies will inevitably come from them, since they will have the world's best brains. Japan can then become the top scientific nation, and contribute to world culture mightily.

If a similar process is undertaken in non scientific domains, then perhaps Japan could dominate these fields as well. But a lot would need to change, because at the present time, with its poor creative record, Japan has been described by Japanese authors as being “a brainless economic giant”, or a “cultural black hole, copying everything and giving nothing back”. With lots of the world's most brilliant foreigners in Japan, “Japanese” output of scientific and artistic ideas ought to increase. However, I believe that in the 21st century, social life will be increasingly dominated by technological influences (especially by Cosmism) so if Japan wants to be No.1, leadership in science is critical.

Japan, if it makes the effort, if it deliberately plans with a vision, to become No.1 scientifically, it could also become No.1 in general. It's just a question of investment, and bringing enough top people to Japan to generate large scale

scientific and intellectual synergy. The rest should follow. Japan cannot do it alone, because its population is only 2% of the world's population.

The major challenge for Japan will be to attract and to *keep* (far more difficult) the world's most talented minds. Major efforts will be needed to reform Japan's level of social development. Hopefully this essay may help a bit in that direction. At the moment, Japan is so insular and so socially backward by western standards, that few westerners want to live in Japan for more than a few years (as the statistics show). Japan is still very much, as I put it, "Out of touch and out of date".

Postscript on Japan

This postscript was written 10 years later than the above section on Japan. At the time of writing, I have not lived in Japan for 7 years, having left the country just after the turn of the millennium. So, why did I leave? There were several reasons. The immediate one was that the research division I was working in got axed. The NTT funders of the lab felt that they did not get enough profit from the research, so the blue sky type projects were axed. Only the shorter term research goal projects were given a second 7 year contract.

I could have tried to get another job in Japan, but by that time, after having lived 8 years in that benighted country, I had pretty much done a complete U-turn on my attitudes towards the place. I had not bothered to learn the language,

because I felt there was no payoff in terms of intellectual discussion and stimulus from the Japanese. As I wrote above, I found the Japanese to be intellectually sterile.

Another major reason, was that my original reason for going to Japan in the first place, i.e. that Japan would become the richest nation and then attract the worlds top brains to come to Japan, went up in smoke after it became clear that Japan was incapable of solving its decade long deflation problem - what the Japanese call the “lost decade”. In the bubble economy of the 1980s, many Japanese invested heavily in land speculation, so that when the bubble burst, the banks were left with huge unpaid debts.

The Japanese were unable, year after year, to solve this problem, which reflected very poorly on them as a nation. The Americans quickly started ignoring them and turned their attention in Asia to China. My sense of pride in Japan slowly and steadily dwindled away. The statistics showed that the gaijins were brain draining back to where they came from as they too, like me, came to the same basic conclusion, i.e. that “Japan is an unfit culture for westerners, too socially backward, too closed, too racist, too groupist, too intellectually sterile to be considered worthy for westerners to live in”.

There was another main reason too, and that is the deeply held racist attitudes of the Japanese. Basically, they do not want foreigners living long term in Japan, disturbing their Japanese “wa”, complaining about the many inferiorities of Japanese culture. In practice it is very difficult to get

Japanese citizenship. It is also very difficult to get a permanent job in Japan. In the lab I was at, the contracts were always short term, never tenured. The message the gaijins got was, “We Japanese don't want you here long term. We want your knowledge, but not you. Sayonara”.

So with the gaijins not wanting to stay, and the Japanese not wanting them to stay, the result was inevitable. By the end of the decade, nearly all the gaijins had left, and Japan was left with the reputation of being “foreigner unfriendly”, “unfit for westerners”. Just to check, I hit the website recently of my old lab, to see what proportion of the researchers are still foreigners, compared to the 30% I was used to in the 1990s. It was much much lower. They had virtually all gone.

This is sad for Japan, because Japan will now be forced to abandon any hope it had of becoming “Number One”. Japan is too small and too uncreative to be able to dominate the planet intellectually without the support of the best foreign brains in the world. Japan’s almost stagnant economic growth of the 1990s meant that by the end of the decade its salaries were no longer competitive. The US had a wonderfully successful decade economically, profiting from the hefty increase in productivity due to internet commerce, the cell phone, etc.

So American salary levels pulled the western researchers back from Japan to the US. Japan helped in this process by repelling them from Japan with Japanese social inferiorities. Even if Japan can get back into a healthy and sustained

economic growth mode, it is unlikely the gaijins would want to return to Japan. The reputation it built up in the 1990s is just too negative to be easily dissipated. It will take decades for Japan to modernize socially, to make it sufficiently fit for westerners to live in.

The interesting question now is whether China will go the same way as Japan. I am the first full time full professor from the US with a Caucasian face in my Chinese university, which ranks in the top 5 to 10 in the country (i.e. a Chinese “ivy league” university). So westerners like me are starting to judge China. Is it a culture fit for westerners to live in? Is China capable of attracting (and more importantly and more challengingly, *keeping*) its talented foreigners? Is it possible that a decade from now I will be writing a report similar to what I have written about Japan, with a pen equally sharp and cutting? Only time will tell. At the time of writing, I’ve only been living a year in China, so it’s too soon to really say anything.

If China can sustain its incredible economic growth rate, then the standard of living in the rich south-east coastal cities will surpass that of the US in a decade or less in PPP (purchasing power parity) terms. I’m probably a decade ahead of the crowd, so my views on China that I may be writing in 5 years may influence thousands of western researchers and professors who will by then be considering living and working in China. In 5 years I should be fluent in the language and absorbing China’s weaknesses and strengths into my personality. Japan failed to become

“Number One” in the 1990s. Will China succeed in the 2010s, where Japan failed?

C) ON POLITICS

C1) LINCOLN WAS A MASS MURDERING DICTATOR

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Imagine the Quebecois deciding tomorrow to secede from the Union of Canada, and the English speaking prime minister goes to war against them, invades them, and kills hundreds of thousands of them, to keep them in the (Canadian) Union. Such a thing would be unthinkable in today's democratic North America. The world community would be outraged and would send the Canadian prime minister to The Hague. Yet this is what Lincoln did to the seceding southern states. Lincoln's reputation needs to be seriously downgraded. He was not a great president. He was a mass murdering dictator by today's standards, who did to the southern states in the 19th century what Putin is doing to Chechnya in the 21st. Americans today despise Putin, so Americans should also despise Lincoln for the same reasons.

C2) GREATER MALE VARIANCE (GMV) AND ITS CONSEQUENCES

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Abstract

Any sexually dimorphic species (i.e. where the males and females have different bodies), from insects to humans, will manifest the phenomenon of greater male variance, i.e. the statistical variance of some biologically measurable quantity will be greater for the males. In the case of human IQ scores, the male variance is about 10% larger than for females. The moment one becomes conscious of this very general biological phenomenon, one is forced to admit that human morons and human genii are males. The greater the “Z score” (i.e. the number of standard deviations from the mean), the higher is the proportion of males scoring that Z.

Since GMV is genetically determined (see below), the feminists will simply have to accept the fact that the genii of the planet are males. They can do nothing about it, so should stop making wild ignorant claims to the contrary. They are just showing their scientific ignorance and will be discredited as awareness of the GMV phenomenon spreads.

The last part of this essay shows that the predicted proportion of females to males at various high IQ levels matches fairly closely those of the real world, hence GMV is a good quantitative theory to explain the (genetically determined) existence of the patriarchy (i.e. rule by males).

1. Introduction

A few years ago, the president of Harvard University, expressed his opinion in a public speech that perhaps the reason why women are so under represented in the sciences and engineering at full professorial level in an Ivy League university like Harvard, was that women's abilities in these subjects were inferior to men's. Feminist professors in his school went livid and the president later apologized.

This reaction by the feminist professors, and the subsequent apology, both disappointed and annoyed me. On both counts, the feminists and the president were showing their ignorance of a basic biological law of GMV (greater male variance), which I now state.

Definition of GMV

Any sexually dimorphic species (i.e. where the bodies of the males differ from the females) will manifest the phenomenon of greater male variance, i.e. the statistical variance of some measurable quantity will be greater with the males than the females over the population of that

species. This is a wide spread phenomenon in the biological world, ranging from insects, through mammals, to humans.

In the case of human measurable intelligence, e.g. on IQ tests, the IQ score variance is about 10% higher for males, so the IQ probability distribution (“Bell”) curve for males is shorter and fatter than that for females. Since the variance difference is only 10%, this means that since the IQ tests are devised so as to give males and females an equal average (“mean”) score, male and female IQs will overlap for the vast majority of the population. This has as a consequence that the feminists may justifiably claim that women are just as capable, just as smart as men, and that this reality should not be ignored by ignorant social customs. Women should be given equal opportunities, since their abilities are equal, generally speaking.

2. Consequences of GMV

However, let us not throw the baby out with the bathwater. Let us look at the claim of the president of Harvard University. He was actually correct. If he had been better informed, he could have reprimanded his feminist colleagues, accusing them of ignorance of the phenomenon of GMV. If the feminists had also known about GMV, they would have shut up, and accepted what the president said as a fact, a biologically well supported fact. Hopefully in the future, such incidents will disappear, as people become better informed about the GMV phenomenon.

Why was the president correct?

One can take the male and female IQ variance scores and plug them into the Bell (Gaussian) curve formula, to calculate the proportion of men and women at a given Z score (i.e. the number of standard deviations from the average score).

If you don't know any statistics, the standard deviation is the square root of the variance, which is defined to be the average of the square of the differences of the population scores from the average (i.e. the standard deviation is the root mean square of the deviations from the average score). The variance is a measure of the "fatness" or "spreadoutness" of the Bell curve. Since the variance of males is greater, the male Bell curve is shorter and fatter, and the female Bell curve is taller and thinner.

So for a given Z score, one knows the proportion of men and women at a given IQ level. Let us now take the case of Harvard physics and mathematics full professors. In the US, the average theoretical physics full professor has an IQ of 170. At Harvard, this score would probably be more like 190, since the real geni score a little over 200. An IQ score of 190 corresponds to a Z score of 6.0 (with a male standard deviation of 15, and an average IQ score of 100, i.e. $Z(\text{male}) = (190 - 100) / 15 = 6.0$). The female standard deviation will be 10% less, i.e. 1.5 IQ points less = 13.5, so for a female to score 190, her Z score would be $Z(\text{female}) = (190 - 100) / 13.5 = 6.67$

When one plugs in these two Z scores into the male and female Bell curve formulas, one sees that the proportion of females having a Z score of 6.67 is much smaller than the proportion of males having a Z score of 6.0

In fact, at each IQ score (and hence Z score), one can predict the proportion of men and women at that level, and then compare it with the proportion of men and women in jobs performing in the real world at that level. For example, one can compare the proportion of men and women getting a math PhD, or getting an assistant professorship in math, or a full professorship in math, or the Field's Medal (the Nobel Prize equivalent in mathematics). These theoretical proportions (that are derived from the male and female variances in their Bell curves) match very closely the real world proportions, so we are talking about a very good quantitative theory, the kind that physicists and science like best.

3. Political Consequences

The same GMV phenomenon exists with other measurable quantities that are important to people in their daily lives, e.g. ambition, aggressiveness, curiosity, etc. So it is therefore not surprising that the top performers in any of these areas will be male. This is confirmed clearly, if one consults a "Who's Who" (in the US). One will find that about 95% of the entries are male. 97% of the science Nobel Prizes have been won by males. 95% of national academies of science members are male. 95% of the

presidents and prime ministers of countries are male. 95% of CEOs of Fortune 500 companies are males. I could go on and on. It is clear that there is a lot of truth to the phrase that we live in “a male dominated world.”

Given this male dominated reality, the feminists will have to come to terms with it, i.e. accept it. If they don't believe it, then they can educate themselves. GMV is a broadly applicable phenomenon in the biological world, so the feminists can Google articles that they can read about the phenomenon and convince themselves. If they continue to push the “urban myth” that women are as *genial* as males, they risk being dismissed and ridiculed by science.

In fact, female inferiority at the genius level is an example of a general social and cultural phenomenon. Throughout most of history, in most cultures, women have been looked upon by both sexes as inferior. In an agricultural culture, the males were stronger and hence of greater value in the fields. In warrior cultures, the men were more aggressive and stronger, and hence were more valued.

In our modern, science based culture, intellectual brilliance is highly valued, so once again, women will just have to learn to accept their inferiority, yet again. With the rise of the recent round of feminism in the 70s, the feminists were making claims that were true in general, but not at the genius end of the spectrum. (Note that noone seems to care much that the utter morons are also males. Such males don't attract much attention, but they do fill up the foster homes. A male moron is too stupid even to sweep the

streets. Note also, that the same matching of theoretical proportions of males to females at the very low end of the IQ range, with the observed proportions in the real world, is also excellent.) So even in the modern world, men are dominant, because the geni are males, and genius is highly respected. Consider how valuable are the men who invent the transistor, the computer, the math, the 9 symphonies, etc?

The feminists may have a hard time accepting such negative truths, but if they don't, then they are going to annoy a lot of anti-PC males like myself, who despise having to listen to PC falsehoods that don't fit with scientifically verified realities. It offends my sense of intellectual honesty, and conflicts with a lifetime of scientific learning. I can imagine that the GMV phenomenon may be crushing for the collective feminist ego, but that's too bad. GMV is "the way of the world" and as such will just have to be lumped.

4. The Origins of GMV?

Where does GMV come from? The empirical fact of the matter is not in doubt. Ask any biologist. However the theoretical underpinnings of the phenomenon are less secure. As far as I can tell from googling, the most popular theory (and it does seem very plausible) is the following.

The default embryogenic design is female. If there are no male genes to switch the basic female design to male, the

embryo will be steered into a female pattern. Since the vast majority of the genes needed to build a human baby are female, the male chromosome need only be very small, containing only a few switching genes to divert the course of development from female to male.

If you know a little genetics, you will know that the human genome contains 46 chromosomes in each cell, half from the mother, and half from the father. There are 23 pairs of chromosomes, with each pair containing a chromosome from the father, and one from the mother, with both chromosomes of the pair responsible for the same set of protein building instructions, but only one (keeping things simple) of the pair gets used i.e. gets switched on to build the embryo and the baby. The chromosome of the pair that is switched on (and the other switched off) is called “dominant” and the chromosome of the pair that is switched off is called “recessive.” Evolution has selected the “fitter” (more favorable) genes to be dominant.

The geneticists will tell you that there are many more types of recessive genes than dominant genes. This now has interesting consequences. The female chromosome is called the “X” chromosome, and the male chromosome is called the “Y” chromosome. The “Y” chromosome is by far the smallest of the 23, and the “X” chromosome is about average in size with many genes on it. A female has two “X” chromosomes in her cells. A male has one “X” and one “Y” chromosome in his cells. Since the “X” chromosome is so much bigger than the “Y” chromosome, nearly all of the genes on the “X” chromosome in the cells of the male will

be “expressed”, i.e. used to build proteins, to build the baby. So, with the male, all those recessive genes on his “X” chromosome will NOT be switched off by dominant genes in a second “X” chromosome (the way they are in a female’s cells) for the simple reason, that the male’s cells does *not have a second* “X” chromosome.

So, over a whole population, the males will be expressing a greater variety of recessive “X” chromosome genes than the females. The females will have their recessive genes “masked” by the dominant genes on the other “X” chromosome, since the female cells have two “X” chromosomes. A greater variety of expressed recessive genes in the male cells results in a greater variance in the males of the population than in the females, hence GMV.

Has any research been done to test this theory? I would appreciate hearing from experts on this matter, so that I can update this essay with the material (links) they send me. My general view is that even if the above theory is in dispute, the empirical fact of GMV is not, and that is what really matters.

5. References

It is suggested that readers interested in reading more about the GMV phenomenon can Google, using the key phrase “greater male variance”. Some informative references I found on the internet can be found at these links.

1.

http://soberingthoughts.blogspot.com/2008_07_01_archive.html

2.

http://1.bp.blogspot.com/_otfwl2zc6Qc/SJBVWiTMEpI/AAAAAAAAFQA/9g1ckIdltQk/s1600-h/var.bmp

(This second reference contained the following interesting table. The variance ratio was defined to be the ratio of the male variance and the female variance. For math, in US grade schools, this ratio was about 1.1)

Grade	$d \pm SE$	Variance ratio	N
Grade 2	0.06 \pm 0.003	1.11	460,980
Grade 3	0.04 \pm 0.002	1.11	754,894
Grade 4	-0.01 \pm 0.002	1.11	763,155
Grade 5	-0.01 \pm 0.002	1.14	929,155
Grade 6	-0.01 \pm 0.002	1.14	886,354
Grade 7	-0.02 \pm 0.002	1.16	898,125
Grade 8	-0.02 \pm 0.002	1.21	837,979
Grade 9	-0.01 \pm 0.003	1.14	608,229
Grade 10	0.04 \pm 0.003	1.18	619,591
Grade 11	0.06 \pm 0.003	1.17	446,381

Effect sizes across grades for U.S. mathematics tests; results are similar across grades 2 through 11.

Postscript

Calculating the Proportion of Females to Males with Elite IQs

The point of this portion of the essay is to calculate, given the two male and female IQ variances (actually – standard deviations, where the variance is the square of the standard deviation), the proportion of females to males at elite IQ levels.

I went hunting for the female and male IQ standard deviations and eventually found the following values, which I needed to begin my little piece of research.

The link for these IQ standard deviations (male and female) was

<http://www.iqcomparisonsite.com/SexDifferences.aspx>

The female IQ standard deviation it gave was 13.55 and the male IQ standard deviation was 14.54.

From these two standard deviations it was a trivial matter to calculate the percentage difference $(14.54 - 13.55) * 100 / 13.55 = 7.3\%$ To find the variance percentage difference, the calculation was $(14.54^2 - 13.55^2) * 100 / 13.55^2 = (211.41 - 183.60) * 100 / 183.60 = 15.15\%$ which is quite a bit higher than the 10% mentioned above. I will work with this 7.3% standard deviation

percentage difference, i.e. the two standard deviations (female and male) in the calculations that follow.

I will now calculate the proportion of females to males at very high IQ scores, for a range of scores, and then *compare* the predicted theoretical proportions (obtained from plugging in the standard deviations into the Bell curve (Gaussian normal curve) formula of females to males at a given IQ score to the real world proportions of females to males found at various professional levels in the intellectual world (e.g. at PhD student level, at professor level, at Fields Medal winner level etc.) If the match is good between the theoretical prediction and the real world, then the theory has quantitative strength, the kind that mathematical physicists and scientists most favor.

I will calculate the proportions (female to male) at “elite” IQ scores of 120, 130, 140, 150, 160, 170, 180, 190, 200.

An IQ of 120 would probably be typical (this could be checked) of undergrad anthropology students. An IQ of 130 would probably be typical of undergrad math students. An IQ of 140 would probably be typical of masters math students. An IQ of 150 would probably be typical of math PhD students. An IQ of 170 would probably be typical of university math professors. (I know that the average IQ of theoretical physics professors in the US is 170, with a standard deviation of 15) Math professors at US Ivy League universities would probably have IQs in the range 180s-190s. Fields Medal winners probably have IQs around

200, the super geni. There have been no female Fields Medal winners ever.

Methodology

I used the following link to find the “Z score” (i.e. the number of standard deviations above the mean (i.e. average) IQ value of 100, assuming females and males have the same average IQ – in fact, IQ scores are constructed such that this is true.) The internet link to the “Z score calculator” that I used was

<http://www.danielsoper.com/statcalc3/calc.aspx?id=22>

and the link to another site that I used to convert a Z score into a percentile was

<http://www.measuringusability.com/pcalc.php>

This site allowed me to choose the number of decimal places (15) in the percentile, which enabled me to find the percentile with great accuracy, which was needed with such large Z scores. (Actually using tiny Z scores was more convenient, because it allowed me to calculate the female/male (percentage) proportions more conveniently, due to the symmetry of the Bell curve.)

Here are the Z scores for the females (with standard deviation of 13.55, for the various IQ levels.

Females

(IQ = 120, Z = **1.47601476**), (IQ = 130, Z = **2.21402214**),
(IQ = 140, Z = **2.95202952**), (IQ = 150, Z = **3.69003690**),
(IQ = 160, Z = **4.42804428**), (IQ = 170, Z = **5.16605166**),
(IQ = 180, Z = **5.90405904**), (IQ = 190, Z = **6.64206642**),
(IQ = 200, Z = **7.38007380**)

Here are the Z scores for the males (with standard deviation of 14.54, for the various IQ levels.

Males

(IQ = 120, Z = **1.37551582**), (IQ = 130, Z = **2.06327373**),
(IQ = 140, Z = **2.75103164**), (IQ = 150, Z = **3.43878955**),
(IQ = 160, Z = **4.12654746**), (IQ = 170, Z = **4.81430536**),
(IQ = 180, Z = **5.50206327**), (IQ = 190, Z = **6.18982118**),
(IQ = 200, Z = **6.87757909**)

These Z scores were then converted into percentiles (i.e. the percentage of people scoring “below” that “-Z” score.

Females

(IQ = 120, Z = **1.47601476**, %ile = 6.996985433194),
(IQ = 130, Z = **2.21402214**, %ile = 1.3413705324705),
(IQ = 140, Z = **2.95202952**, %ile = 0.1578363207859),
(IQ = 150, Z = **3.69003690**, %ile = 0.011223613673239),
(IQ = 160, Z = **4.42804428**, %ile = 0.000481636854144),
(IQ = 170, Z = **5.16605166**, %ile = 1.2733603039E-5),
(IQ = 180, Z = **5.90405904**, %ile = 2.17861895E-7),
(IQ = 190, Z = **6.64206642**, %ile = 2.603118E-9),
(IQ = 200, Z = **7.38007380**, %ile = 2.3848E-11)

Males

(IQ = 120, Z = **1.37551582**, %ile = 8.4485662245511),
(IQ = 130, Z = **2.06327373**, %ile = 1.9543439576858),
(IQ = 140, Z = **2.75103164**, %ile = 0.29702651326952),
(IQ = 150, Z = **3.43878955**, %ile = 0.029223994305883),
(IQ = 160, Z = **4.12654746**, %ile = 0.001851531250396),
(IQ = 170, Z = **4.81430536**, %ile = 7.6230367174E-5),
(IQ = 180, Z = **5.50206327**, %ile = 2.100063257E-6),
(IQ = 190, Z = **6.18982118**, %ile = 4.0745618E-8),
(IQ = 200, Z = **6.87757909**, %ile = 5.9649E-10)

I now calculate the (percentage) proportions of females to males, i.e. using the formula $\%ile_female * 100 / (\%ile_female + \%ile_male)$

Percentiles

Male percentiles

(IQ = 120, 8.4485662245511),
(IQ = 130, 1.9543439576858),
(IQ = 140, 0.29702651326952),
(IQ = 150, 0.029223994305883),
(IQ = 160, 0.001851531250396),
(IQ = 170, 7.6230367174E-5),
(IQ = 180, 2.100063257E-6),
(IQ = 190, 4.0745618E-8),
(IQ = 200, 5.9649E-10)

Female percentiles

(IQ = 120, 6.996985433194),
(IQ = 130, 1.3413705324705),
(IQ = 140, 0.1578363207859),

(IQ = 150, 0.011223613673239),
(IQ = 160, 0.000481636854144),
(IQ = 170, 1.2733603039E-5),
(IQ = 180, 2.17861895E-7),
(IQ = 190, 2.603118E-9),
(IQ = 200, 2.3848E-11)

Summed percentiles (%ile_male + %ile_female)

(IQ = 120,
8.4485662245511+6.996985433194=15.4455516577451),
(IQ = 130,
1.9543439576858+1.3413705324705=3.2957144901563),
(IQ = 140,
0.29702651326952+0.1578363207859=0.45486283405542
) ,
(IQ = 150,
0.029223994305883+0.011223613673239=0.04044760797
912),
(IQ = 160,
0.001851531250396+0.000481636854144=0.00233316810
454),
(IQ = 170,
7.6230367174E-5+1.2733603039E-5=0.00008896397021),
(IQ = 180, 2.100063257E-6+2.17861895E-
7=0.00000231792515),
(IQ = 190, 4.0745618E-8+2.603118E-9=4.3348736e-8),
(IQ = 200, 5.9649E-10+2.3848E-11=6.20338e-10)

*Percentage proportions (using the formula -
(%ile_female*100/(%ile_female+%ile_male))*

(IQ = 120, $100*(6.996985433194/15.4455516577451) = 45.3\%$)

(IQ = 130, $100*(1.3413705324705/3.2957144901563) = 40.7\%$)

(IQ = 140, $100*(0.1578363207859/0.45486283405542) = 34.7\%$)

(IQ = 150, $100*(0.011223613673239/0.04044760797912) = 27.7\%$)

(IQ = 160, $100*(0.000481636854144/0.00233316810454) = 20.6\%$)

(IQ = 170, $100*(1.2733603039E-5/0.00008896397021) = 14.3\%$)

(IQ = 180, $100*(2.17861895E-7/0.00000231792515) = 9.4\%$),

(IQ = 190, $100*(2.603118E-9/4.3348736e-8) = 6.0\%$),

(IQ = 200, $100*(2.3848E-11/6.20338e-10) = 3.8\%$)

To make these calculations, I used the link

<http://www.calculateforfree.com/sci1.html>

Summary

So summarizing, the percentage proportions of females to males at the various IQ levels are shown below.

(IQ = 120, **45.3%**), (IQ = 130, **40.7%**), (IQ = 140, **34.7%**),
(IQ = 150, **27.7%**), (IQ = 160, **20.6%**), (IQ = 170, **14.3%**),
(IQ = 180, **9.4%**), (IQ = 190, **6.0%**), (IQ = 200, **3.8%**)

Analysis (Theoretical Predictions)

At IQ 120 (undergrad students), nearly half should be female.

At IQ 130 (undergrad math students), about 40% should be female.

At IQ 140 (masters math students), about a third should be female.

At IQ 150 (PhD math students), about a quarter should be female.

At IQ 160 (hard science profs), about a fifth should be female.

At IQ 170 (math/physics profs), about a seventh should be female.

At IQ 180(Ivy League math profs), about a tenth should be female.

At IQ 190 (Ivy League math profs), about 6% should be female.

At IQ 200 (Fields Medal winners), about 4% should be female.

How well do these theoretical predictions match the real world?

It seems to me, that these theoretical predictions match the real world pretty well. At today's universities in many countries, the proportion of females in the IQ ranges 120, 130 is about half. In my own experience in teaching master level computer science in China, about a third of my classes were female, as predicted.

From my own experience as a prof in one of the hard sciences (computer science) in my US computer science department, there were only two female profs, no female full profs, out of a total of 15 professors. The fact that a seventh of the profs were female fits the theoretical prediction quite well.

At the Ivy League level, the President of Harvard some years back remarked in a public speech that there were very few women in the maths/physics depts and that this may be due to a greater male variance (GMV). What he said fits the theoretical data. He should not have been criticized by the feminists, because he was correct.

The Fields Medal, which is equivalent to the Nobel Prize, but for mathematics, was first awarded in 1936 (until the recent establishment of the Abel Prize in 2003 which is now the real equivalent of the Nobel Prize for mathematics). There have been 52 winners so far (up to 2010). All have been male. That is reasonably consistent with the theoretical prediction that only about 4% of such winners should be female.

Criticisms

The above study is still rather crude. It could be tightened up with much better data. Psychologists/sociologists could undertake studies to measure much more accurately the proportion of females to males at *all* performance levels and see how closely the theoretical predictions match the

real world data. Perhaps such comprehensive studies have already been done? (I am not a professional social scientist.)

PR vs. PC

But I think the case that “the genii are males” has been shown fairly clearly in this essay. I think the results of this little study are strong enough to say to the feminists “Patriarchy (i.e. social domination by males, rule by males) is only a part of the problem. GMV also plays a considerable role, in which case patriarchy will not go away, it is built into our DNA.” The feminists will just have to “lump it” i.e. accept that fact.

Accepting it will not be such a big deal for women, since for most of the population, male and female abilities are pretty much the same. The overlap of the two IQ Bell curves is pretty much total. Its only at the two extreme fringes of the Bell curve (i.e. also at the bottom fringe, i.e. at the “moron” end as well, which is something I have not gone into much in this essay, but studies of institutions for the mentally retarded show the extremely stupid people are predominantly males) that male dominance manifests itself.

But since it is the genii who create and drive society, and that these genii are males (which is something that is not going to change) one can conclude that males will always be the more prestigious sex.

This theoretical study that predicts that the genii are males, matches the real world. 97% of science Nobel prizes have

been won by males. 95% of entries in Who's Who? are males. 95% of presidents and prime ministers are males, 98% of Fortune 500 Company CEOs are males, all 50+ Fields Medal winners are males, etc. The patriarchy is real and genetically determined. It will not go away, no matter how vitriolic the feminists become.

Studies such as the above, give ideological ammunition to the "PRers," i.e. the "political realists," in contrast to the "PCers," i.e. the "political correct." The PRers will now be more able to brow-beat the PCers by accusing them of being isscienate (i.e. being ignorant of science), which in this case, is being ignorant of the phenomenon of GMV and its consequences for the intellectual performance/status hierarchy.

C3) SAGEISM

Discrimination Against Intellectuals (Sages)

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Abstract

Sageism, by definition, is discrimination against the sages (i.e. intellectuals). This essay has two main aims. The first tries to raise readers consciousness, that indeed, sages are discriminated against, and the second is to suggest how this discrimination can be combated.

1. Introduction

For decades, I've largely taken it for granted that most of the content on television is way too dumb for me to tolerate. I had similar feelings when I turned on the radio, finding that most of the radio channels were devoted to "pop" (i.e. popular) music. Well, it wasn't popular to me. I hated that kind of music, even as an 18 year old undergraduate at university. The noise coming from the rock groups who used to play at the weekly dance for the university students seemed to me to be "ephemeral noise" totally lacking any

beauty or genius in comparison with what I felt to be “real” music, i.e. classical music. I felt “How could you compare Elvis (a beta-brained “pop” crooner) to Mahler (whose heart rending beauty brings me to tears)?” When I was 12, my father bought a stereo system for the family and started buying classical music LPs (long playing discs) and my love of classical music began to blossom.

When I was 18, I began to think that what was on television was so stupid that it insulted my intelligence, so I watched very little of it. Occasionally, on the government run TV channel (in Melbourne, Australia, where I grew up) BBC (British Broadcasting Corporation) science programs caught my attention strongly, but there were very, very few of them. I began to wonder why there was so little “interesting” material on television or radio. Most of it was advertising-infested drivel. It alienated and disgusted me. But it did not occur to me that I might have been discriminated against as a young intellectual, as a young thinker, in favor of the mass of humanity who buys the majority of the products advertised on such media.

At 23, during my first evening in London, having just fled Australia, “the land of philistines” I was overwhelmed to listen to a BBC interview between the most articulate intelligent journalist I had ever heard in my young mono-cultured life in Australia, and a British cabinet minister (senior politician). “Minister, do you feel embarrassed, when your cabinet colleagues tease you for being religious?” That was in 1971.

In the 1980s, having migrated to Brussels, capital of Europe, to enjoy the intellectual fruits of *several* superior cultures (not just Britain, which I felt to be rather insular minded and conservative, compared to the French and Germans), my French had improved enough (thanks to having a French speaking second wife), that I could begin to profit from what I consider to be the best radio channel on the planet, namely “France Culture.”

During that time, I became increasingly conscious of the aphorism “En France, les intellectuels sont les dieux!” (“In France, the intellectuals are gods!”) The attitudes towards intellectuals in France were obviously very different from what I was used to in Australia, and much later in the US. Even Britain, where I had lived 6 years, was not as supportive of its intellectuals as France. In France, the radio program “France Culture” is aimed at the top 1% of the population in IQ terms. It is the radio channel of the intellectuals and almost unique on the planet. (You can listen to it by for example, using the “app” “tunein” on your iPad, which has links to 1000s of radio channels from all over the world, and tapping on the “Paris” flag on the map of France, and then tapping on “France Culture.”)

I loved this channel. When I listened to it, it made me ask “Why don’t other cultures treat their intellectuals like France?” Why are intellectuals ignored and belittled in so many countries? Intellectuals are the most valuable portion of society. They are the genii, the creators and drivers of society. They invent the ideologies that inspire billions. They devise the transistor, the computer, and write the

symphonies that can bring sensitive souls to tears. They are so valuable, they should be nurtured, fostered, and be made to feel they belong to society, not be discriminated against and belittled with labels such as “elitist”, “nerd”, “egg head”, “geek” etc.

Over the years, I began to feel that the intellectuals needed a liberation movement comparable to the US “Civil Rights Movement” of the blacks in the 1960s, the “Feminist Movement” of women in the 1970s and the “Anti-Ageist Movement” of the aged in the 1980s. But I didn’t feel a *burning* desire to fight discrimination against intellectuals, so I put the issue on my mental back burner until recently. Now that I’m ARCing (after retirement careering, in the sense of no longer having a salary, but pursuing a new career) I have returned to the topic and have recently been thinking actively about the many ways in which intellectuals are discriminated against. As a result I decided to write this essay, which aims to make its readers conscious that a “Sages Lib” is just as much needed as similar movements were in previous decades for the blacks, women and the aged.

2. Discrimination against the Sages (Sageism) & How to Combat It

This section lists ways in which sages are discriminated against. It aims to make readers conscious that intellectuals (sages) are indeed discriminated against, and that this discrimination needs to stop. It also contains ideas on how to do this.

Firstly, a bit of discussion about this word “sageism.” Once the idea occurred to me to write an essay on this topic (i.e. discrimination against intellectuals), I became conscious of the need for a good label for a social movement against such discrimination. I have been an ideologist most of my adult life (e.g. I was very active in the “Masculist” (my term by the way, coined in the 1970s, meaning “Mens Lib”) movement in the early 1980s in Europe), so I’m very conscious of the ideological power of good labels. Look at Karl Marx, and the motivational power of his terms “surplus value”, “alienation”, “class warfare”, “proletariat”, “capitalist” etc. So I set about choosing what I hoped would be a good label for “discrimination against intellectuals.” That’s 12 syllables, way too much of a mouthful, so how about “anti-intellectualism.” That’s an improvement, only 9 syllables, but still too long. What word is more or less synonymous with the word intellectual but is much shorter, so I hit on the word “sage” hence “sageism.” I thought that it was a good label - short, and was obvious to everyone what it meant. You don’t have to be told what it means, it is self evident. But, to be more explicit, I define a “sage” in the strict (adult) sense to be someone in the top 1% of IQ, who has a PhD, who has ideas, and writes books about them. Obviously, only a small proportion of the population are sages.

I’m hoping that the ideas in this essay will spread and spread so that society will have a new label that sages can use when they feel discriminated against. They can then point their fingers at sageists and rebuke them with the

label “Sageist!” Hopefully, in time, being accused of being sageist will have as much severity as being accused of being racist, or sexist, or ageist.

The word “sage” thus changes its meaning a bit. The traditional meaning has connotations of being “wise, intelligent, thoughtful.” These are positive connotations, flattering to the intellectuals, so by labeling themselves “sages”, intellectuals can do for themselves what the homosexuals did when they started labeling themselves “gays.” The term “gay” has now virtually drowned out the old meaning of “happy and carefree.” Hopefully the term “sage” will go the same way.

How are sages discriminated against and how can it be combated? Let’s start with the schools.

a) Sageist discrimination in schools

IQ and intellectual curiosity are distributed according to the Gaussian “normal” curve, the so-called “Bell curve,” because that’s how the IQ distribution looks. Most people lie in the peak of a Bell curve, in virtually anything that one can measure. Certainly IQ follows a Bell curve. If one defines the average intelligence quotient (IQ) to be 100 points, then two thirds of the population lies within a range of a “standard deviation” (e.g. 15 points) either side of this average value, i.e. between 85 and 115. I label such people “*peakers*”, because they occupy the “peak of the Bell curve. This term “peaker” is not only a neutral term. It could also be used as a term of abuse. Imagine some kid in school

(primary or secondary) who is a child intellectual, who is labeled a “geek” or “nerd” Such a child could then retaliate with the term “Peaker!” with its connotations of “mediocrity”, “not intelligent”, “average Joe” etc. If the sageist is even less intelligent than a peaker, then the young sage could hurl back the label “Sub!” which by definition is someone whose intelligence is less than 85, i.e. lying in the bottom sixth of the population. This label might become more damaging than the usual term “moron” which strictly speaking is used for someone whose IQ lies in the range 50-70, i.e. the dumbest “one in fifty.” But that label is exaggerated and hence has less impact, because most people don’t take it seriously. But when the school yard bully is truly a sub, and when the young sage hits back with the “Sub!” label, its greater accuracy may be far more emotionally damaging and hurtful to the bully. The young sage is thus armed with a new weapon, a new label, for self protection.

Since young sages lie in the top 1% of IQ, they will be in a tiny minority. There might be one sage in a large class. These young sages will probably be bored by the interests of most of their class mates and feel alienated by the passions of the peakers, e.g. “being popular”, “drinking beer”, “playing sports”, and prefer to go off on their own, pursuing their own (intellectual) interests e.g. reading science, programming computers, reading math or poetry books, etc. The peakers may then sense that these young sages don’t like them, and perhaps feel that these young sages look down on them for being peakers (which is probably true.) It is then understandable that a certain

mutual hostility may grow between the sages and the peakers (and the subs). Since the peakers (together with the subs) are in the vast majority, outnumbering the sages by 100 to 1, the peakers may feel that they can essentially ignore the feelings and interests of the sages and dismiss them. To peakers, sages are ignorable. They don't matter. There are so few of them.

But for the sages, to be labeled "egg head", "geek", "nerd" etc is just as wounding as for a black to be labeled a "nigger", "coon", "darkie" etc. The blacks have successfully fought against such discrimination and labeling, and to such an extent, that most Americans for example, don't dare use the word "nigger". A similar story exists for women. Women used to be labeled "chicks", "broads", etc but fought against it with the Women's Lib Movement, so that now sexism on the part of men will only be met with real anger on the part of women. In short, terms like "nigger" and "chick" etc have pretty well dropped out of the English vocabulary. They are seen today as very "uncool."

Unfortunately, the same is not yet true for sageist labels. What is needed is a "Sages Lib Movement" that can combat them. As a result of being labeled an "egghead", "geek", "nerd" etc, these young sages suffer emotional rejection at school and learn to close into themselves to stay sane. They often have few friends, for sheer statistical reasons. They are 1 in 100, so the next brightest in the class may be quite a bit dumber. As a result of their social withdrawal, and not feeling they are understood by the

peakers, their social skills are not developed. They associate social interaction with emotional rejection and psychological pain. After a while they give up mixing with the crowd, the peakers, the popular people. They become “nerds” (defined in the dictionary to be “intelligent but single-minded people obsessed with a nonsocial hobby or pursuit, e.g. computer nerds) and “geeks” (defined to be “peculiar or otherwise dislikable people, especially those who are perceived to be *overly* intellectual”). Overly? Says who? Peakers? If your passion is ideas, or working through beautiful and powerful mathematical proofs or feeling the awe of the size of the universe, or grappling with the tough philosophical questions of human existence, who is to say that such intellectual passion is unacceptable? It is this attitude of the peakers that so alienates the sages.

To the young sages, discovering the power and beauty of science, math, computing, literature, etc is something that should be fostered, encouraged and stimulated, not dismissed in a negative tone as being “too intellectual” for the peaker majority. Sages cant help being sages. Peakers (and subs) cant help being peakers (and subs). Intelligence has one of the highest heritabilities (estimated to lie between 60% and 80%). Therefore one is mostly born a sage just as much as one is born a peaker. Both cant help it. It makes as little sense for a peaker to label a sage a geek, as it is for a sage to label a peaker a peaker. Both need to accept each others abilities and learn to live with each other. That living together might take the practical form of mutual avoidance, but that is better than the current situation where

typically, peakers reject and abuse sages and where the sages don't fight back.

To fight back, the sages need labels as well as a new anti-discriminatory consciousness, and that is one of the aims of this essay – to coin labels that the sages can hurl back at the discriminating peakers and to foster an attitude in society that trashing sages is morally unacceptable. In one sense, the sages have the advantage. They may be in a tiny minority, but they are more intelligent, so can use their greater wit, vocabulary, and biting sarcasm, to crush the egos of rejecting peakers. If they do this effectively enough, and with generally accepted labels, then the peakers may learn to fear the sages and stay away from them, or at least stay away from the fear of being labeled “sageists.”

The sages can also help themselves. They can form support groups within schools, by forming “Sages” groups that consist of the brightest members of the school who are invited to join these groups by older members. Since only the top 1 (or 2) percent of the school can become members of such groups, they will have tremendous prestige, so that being a member of the school's “Sages” will give young members a real ego boost. Within such groups, intellectualism will be fostered, strengthened, nurtured, to counter the anti-intellectualism of the peakers. Such pro-intellectualism will have a powerful effect on the psychological well being of the young sages.

At my school in Melbourne, Australia, the heroes were the “jocks”, i.e. the sporty types who were successful in

winning sporting events against other schools. The intellectual minority were largely ignored. There was certainly no Sages group, so the handful of intellectuals at the school were simply dismissed, or worse, discriminated against simply because they were intellectuals (sages). I hated this. In my final year at public (high) school, aged 18, I loathed the values of my school and could not wait to leave to get to university, to escape the mindless middle-class-ness of peaker (sport mad, anti intellectual) values. We had “assembly” every morning, which consisted mainly of compulsory religion and announcements of sporting events. I felt utterly alienated and bored by both, so took physics books with me to keep myself amused. When the “prefects” (student authority figures) told me to stop reading, I simply ignored them. They were peakers in my eyes, jocks, non intellectuals, not my kind of people at all, hence ignorable. The prefects complained to the head master who fortunately for me was a PhD who ignored them instead of expelling me. I suspect he was hoping I would bring some academic glory to the school in the state wide exams, which I did at the end of my final year – I topped the state in 12th grade chemistry.

The following year, I was bitterly disappointed to learn that the level of intellectuality (or rather the lack of it) that I had hoped to escape from at school, followed me to university. It was then that I realized, that a whole culture can be sageist and that the only way to escape from it would be to migrate, which I did once I had my basic degrees. I left the colony of Australia behind and chose to live in a large, old-world culture that had an intellectual upper class with

strong intellectual traditions. In England I felt that “my values were valued”, that I did not have to feel alienated any more. I felt I could revel in my intellectual passions and be rewarded for being a sage instead of being punished and being excluded by the peaker majority.

b) Sageist discrimination by the media

The US is different from most countries, in the sense that its media is almost exclusively owned by corporations. Most European countries for example, have a mix of media – commercial and government. The commercial TV channels, for example, make money by advertising. The more popular their programs are, the higher the advertising fees that these commercial TV channels can charge, because the advertisers know that more people are watching and therefore exposed to their ads. But, since these TV programs are “broadcast”, i.e. sent out to a broad public, with the same programs for everyone, the sages are ignored, because they are such a tiny minority. The content of these popular programs is aimed at the intellectual level of the peakers. This alienates, bores and disgusts the sages, who then simply do not watch much US television. They feel that US TV insults their intelligence.

As a result of this, the sages rarely appear on US TV, compared to Europe, so US peakers do not get much in the way of intellectual content. They do not hear for example, sages on TV slapping down middle class mindlessness, as happens with government controlled media in most of the countries of the world. In the old-world cultures with large

populations and hence large numbers of sages (e.g. Germany, Britain, France, Italy), there is a strong tradition of upper class intellectuality, that does not take kindly to “middle class mindlessness” that is so prevalent in the US. These old-world, upper class intellectuals delight in slapping down the ignorant stupidities of the peakers, so that European peakers feel brow beaten. They are afraid to speak up with strong opinions for fear of having some professor on TV slap down their arguments with obvious contempt.

In the US, this slapping down is far less prevalent, with the result that by default, the level of middle class mindlessness of Americans is a lot higher than in Europe and in fact in most countries. For example, 80% of Americans are still religious (compared to about 10% in the Scandinavian countries or the UK). Half of American don't believe in evolution, and 40% of them think the world is less than 10,000 years old. The French, for example, who have a very strong intellectual tradition, and who are the most sophisticated people in Europe, sneer at the vulgarity of Americans. Most European sages consider American middle class mindlessness as one of the major inferiorities of the US. America was a colony and never attracted the colonizer's upper class very much. What would upper class intellectuals do in a colonial wilderness? Work with their hands? It is therefore not surprising, that the British colonies - the US, Canada, Australia, New Zealand, South Africa, etc did not develop much in the way of an upper class intellectualism, because they were colonized by (mostly) Britain's lower classes.

So, what can America's sages do to change the neglect of the American media towards them? One obvious answer is for the US to copy what most countries do, i.e. have a *mix* of media types, i.e. commercial and government. In Europe, the UK has the BBC (British Broadcasting Corporation). France has TF (Television Francaise), Italy has RAI, Germany has Deutsche Welle, Japan has NHK, etc. Most countries look upon the purely commercial approach of US media as uncivilized and inhumane. The US simply ignores the sages and the subs in its media. The BBC for example has programs at all intellectual levels, sub, peaker and sage, all are catered to, and that is only fair. The BBC and other European countries' media feel the moral obligation to cater to all intellectual levels. But in the US, the sages and subs are tossed on the trash heap because they don't have enough ad driven purchasing power, due to their smaller numbers relative to the huge majority of the peakers (the "ad mass").

As the world shrinks, and people travel more (e.g. half a billion people a year travel internationally), the "multis" (multi-cultured people) look down upon the ignorant limitations and inferiorities of the "monos" (mono-cultured people). The multis, by definition, have lived in several cultures and inevitably "culture bash" those customs they see as greatly inferior to others they have experienced in other countries.

American sages who are also multis can organize politically and put moral pressure on the American public

and American politicians to create a media that caters to them, i.e. a government controlled and financed media based on the European model. They can get angry that US society ignores sages. They can get militant. They can form organizations at local, state and federal level to push the cause of the sages.

American sages can also help themselves. As they become more multi, they can switch their nationalist self image away from being mono-Americans, to being more “globans” (i.e. global citizens) and use other cultures to help nurture their intellectuality that the US fails to do. For example, they could use the internet to listen to and to watch programs created specifically for sages. The best example I know of, is the French radio program I mentioned above, namely “France Culture” It will not be without some effort however, since the French spoken is highly intellectual, i.e. with complex syntax and with a rich vocabulary. But the effort would be worth it, because the reward is great. American sages, starved of intellectually oriented media, would be able to identify partially with French culture and then become much more conscious how sageist American society is.

France’s top newspaper, “Le Monde” (“The World”) is another example of how French culture nurtures its sages. The intellectual level of Le Monde is way above that of the New York Times, or the Herald Tribune. France *reveres* its sages. America *ignores* its sages. France is a civilized country. America is not.

Another way to avoid the lack of intellectual content on US media is simply to ignore it by using the new capabilities of the internet. In my own case for example, I hardly watch any television from any country, because I have discovered the enormous intellectual wealth of “Youtube.” It is full of documentaries of high quality from around the world, and many university lectures. Increasingly professors are putting their lectures on youtube, so that sages all over the world, so long as they can understand English (and other major languages) can watch them and learn from them. In my own case, I have now started to record PhD level lectures that I give myself in my own living room, in pure math and math physics, using my camcorder, and am putting them on the web for the world’s math/physics sages to learn from (if they want.)

The internet has liberated me I feel. I can watch educational documentaries and university lectures to my hearts content, and I do. I no longer feel anywhere near as intellectually alienated as before. I am hugely more educated than even a year ago, thanks to the many high quality videos on the web (mostly on youtube). Unfortunately, in the country where I live, China, the government has blocked access to it, so Chinese people who don’t know how to use a proxy server cannot be educated by it. But most of the world can. 90% of people who live outside China, live in democracies, so, provided they make the effort to get fluent in listening to English, they can educate themselves on the internet.

c) Sageist discrimination by the peakers

It's just a statistical fact (due to the Bell curve) that peakers (plus subs) outnumber sages by about 100 to 1. Thus in practice, if the peakers simply ignore the needs of the sages, they feel that only about 1% of the population will suffer. This is a common attitude of peakers. They look upon the sages as a tiny minority (like gays or lesbians) and hence ignore their special problems and needs. So, it is the task of the sages themselves to make society conscious of the problems that sages have in today's world. The sages need to organize politically, at national level, and at grass roots level. They need propaganda that they can use to combat sageism. I hope I have made a contribution in this essay towards this end, by having coined such terms as "sageist", "peaker", "sub" "sageism", etc. Sages need to help themselves, by pushing for national media that has a sage component. They need to create sage institutions at grass root levels, e.g. at schools and universities. Most of all though they need to combat the sageism of the peakers.

This can be done in two major ways, namely by using the carrot and the stick. The sages can appeal to the feelings of the peakers by saying such things as "How would you like to be called "geek", "nerd", "egg head", etc, as though they are terms of abuse? How do you like being called "peaker", "dummy", etc as though they are terms of abuse?" "Live and let live!" "People's tastes and abilities differ, so if you don't like the values of the sages, then at least ignore them, rather than abuse them. If you abuse them, the sages, now armed with a new vernacular and consciousness, may come back at you, with a greater level of ego bruising vitriol than you can muster. After all, they are a lot smarter than you.

They are sages.” “Learn to accept the existence of sages. They can’t help being sages, just as you can’t help being peakers. You have the advantage of being in the majority, so don’t use the “tyranny of the majority” to make the lives of sages a misery.”

If you are a peaker and you care about the quality of life in your country as well as its international reputation, then don’t discriminate against your sages. Sages are the most valuable portion of a culture, since it is they who create and drive society. You should support them and honor them. You should certainly not discriminate against them and treat them like outcasts. If your whole culture does that, then in our ever shrinking, “multifying” world, your culture will be increasingly “culture bashed” by more sage-supportive cultures. Sages are people too, and need to feel that they too “belong to the tribe”, but when schools, the media, and (peaker dominated) society discriminates against them, casting them out with hurtful labels like “nerd”, “geek”, “egghead” etc. then you have made the sages very unhappy. You will also deserve the contempt of more intellectual cultures.

To the sages – “Support yourselves. Raise your consciousness of society’s discrimination against you, and hit back. Become militant sages. Make society as aware of the nastiness of sageism as people are today of racism, sexism and ageism. Not too many decades ago, racism, sexism and ageism were rife, but were fought against by political movements of blacks, women, and the aged, to such an extent that today to be labeled racist, sexist, or

ageist is truly damning. It is now up to the “Sage Community” to do the same thing with the term “sageist”. Sages need to organize politically. You need to revel in your intellectuality. Learn from the French – “En France, les intellectuels sont les dieux.” Wouldn’t it be nice for you to live in a culture where one’s intellectual values are valued. “Sages of the world unite – its time to nurture your brains!”

C4) THE DEMOCRATIC UNION (DU)

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Abstract

90% of people who live outside China live in democracies. The time is now ripe to start a serious global push in favor of dedictation (= ridding the world of the last dictatorships.) The so called “international community” should relabel itself as the “Democratic Union” (DU) and exclude those few nations that are still dictatorships, especially China, the “big bad backward exception.” The DU can set up criteria for membership and put moral pressure on potential applicants as “insufficiently civilized” to join, thus motivating the non democratic minority to modernize, legalize, democratize and civilize. This essay describes the advantages of living in a fully democratic world, and how steps should be taken to achieve it.

1. Introduction

One of the great generalizations to come out of political science in recent decades is that democratic nations are far less likely to go to war with each other - their voting

populations simply don't allow it, and will vote out any war mongering political leader who threatens to do so.

Our planet is wasting nearly two trillion dollars a year on arms. If the planet could become fully democratic, i.e. every nation state becomes a democracy, with multiple political parties that compete in regular elections, then most of that money could be respent towards humanitarian ends. A similar argument can be made in regard to the notorious arms trade, but this time, the biggest offenders are the advanced democracies, namely the US, Europe (and Russia, a half democracy). If nearly all the world democratizes (and hence the number of wars per decade decreases markedly) there will be a much smaller market for arms, since there will be fewer conflicts. The arms trade, which is morally more reprehensible than the slave trade (since it is in the self interest of slavers to keep their slaves alive, whereas the arms trade is all about killing large numbers of people) can then be sent to the dustbin of history as well.

Two thirds of countries in the world today are democracies of various shades. The major exceptions are the remaining communist countries, with the biggest non democracy being China, along with like minded countries such as Vietnam, North Korea, Cuba, etc. The world is democratizing at an average rate of about two countries per year. If the present trend continues, then in less than half a century from now, there will be no dictatorships left. We will be living in an entirely democratic world, a highly desirable goal for humanity to achieve.

Since two thirds of the world's population is already democratic, the time is now ripe, to form a type of international club that has as the main criterion for membership, that a member nation must be a democracy. By forming such a club, it will become possible to put moral pressure on those nondemocratic stragglers, and to push them into line for the sake of world peace, for greater wealth, and world happiness.

This essay suggests measures that should be undertaken to dedictate the planet, one of the main ones being the creation of a new multinational (quasi global) institution called the "Democratic Union" or "DU" for short.

2. Steps towards Creating a Democratic Union (DU)

a) Changing the United Nations (UN)

Grass roots and multinational organizations ought to be formed with the aim of creating a Democratic Union (DU) within the United Nations (UN). Staff members of the UN should be talking amongst themselves on how such a union could be formed, and within the structures of the UN. A manifesto should be written which spells out clearly the considerable advantages of the creation of such a DU, e.g. those listed briefly above, (i.e. the removal of the last dictatorships, the riddance of war, the removal of the arms trade, the redispersion of the two trillion dollars wasted on arms each year towards humanitarian ends, etc.)

b) Getting Started

A way to start, would be for a handful of interested nations to join together and create the DU. It should establish criteria for membership that less democratically developed nations can aim at to become accepted members, i.e. to become “members of the (democratic) club.” Once these membership criteria are established, those nations that the founder nations consider worthy to become members can be approached, and those not considered worthy will definitely not be approached.

Once enough momentum has been established in the creation of the DU, it can then start applying moral pressure on the nondemocratic stragglers.

3. Applying Dictatorial Moral Pressure

Once the DU has come into being at the UN, it can begin to apply psychological pressure on the non democratic countries, and especially towards China. It can for example, publish each year a list of members and a list of non members. It can arrange an annual ceremony to congratulate new members, and publicize the event widely, so as to bring moral pressure to bear on non members. Those countries that are close to meeting the criteria will be encouraged to make the necessary reforms to become members, rather in the way the EU (European Union) encourages future members to make legislative changes to become EU members.

DU members can keep asking non members “When do you plan to democratize?” “How does it feel to be one of the last countries in the world to democratize?” etc. Such moral pressure coming from all sides of the globe, will have tremendous moral force, and make the stragglers feel very uncomfortable and inferior (which is precisely the intention).

In China’s case, it is the only 3rd world nation to have anti satellite weapons, so it may be the very last country to democratize. All the other 3rd world countries do not have the technological know how in space technology, to shoot internet satellites out of the sky (which is something China actually did a few years ago.)

In a mere few years, China will be the largest economy in the world, so its voice in the UN will be even more powerful than it is today (2012.) If it feels an overwhelmingly powerful moral force against it, coming from all sides, it may choose to leave the UN, the way Japan and Italy did in the 1930s. But if it did that, it would lose its seat on the permanent Security Council at the UN, and hence would have far less impact in making world decisions. With China out of the picture in that sense, it would be much easier for the UN to push pro democratic decisions. China would thus very probably choose to remain a UN member and hence have to submit to the huge moral pressure against it. This “pro democratic bullying” would be one of the explicit (or at least implicit) goals of

the DU, i.e. to put real moral pressure on China to democratize, the “big bad backward exception”.

In a few years, we will be living in a world in which almost 80% of the world’s population is democratic, (the other 20% lives in China). It will become intolerable for the non Chinese world to accept that the world’s biggest economy, with the world’s largest population, namely China, is a brutal dictatorship, with a government that has killed some 70-80 million of its own citizens (e.g. 45 million, according to the latest research, in the Mao caused “Great Chinese Famine” of 1958-1962, and half of the 50 million Chinese who were sent to China’s infamous “laogai” (i.e. the Chinese equivalent of Stalin’s “gulag”, i.e. slave labor camps for political prisoners) who did not return, giving a total of at least 70 (45+25) million. Most of these mass murders were committed during the dictatorship of Mao Zedong (a greater mass murdering tyrant than even Hitler or Stalin, and hence history’s worst), whose face is still on China’s money. Even today, there are still over 1000 laogai in China, with somewhere between half to two million political prisoners. The DU, with 80% of the world population, will simply not tolerate that the world’s largest economy, and political power is such a moral pigmy. It will put enormous moral pressure on China to civilize. In its present state, China is simply “a moral shit hole.”

It is therefore only a question of time, before, the “big” DU, four times bigger than China, can put not only moral pressure on China to modernize, legalize, democratize and civilize, but economic and political pressure as well. If the

non Chinese world truly unifies, then “little China” will not have a chance. It could be economically boycotted by the rest of the world. Its touring citizens could be bombarded by moral pressure from the rest of the world. Chinese tourists could be hazed by local populations with demeaning questions such as “Why do you Chinese tolerate living in such a political shit hole?” “Why are you Chinese so politically backward?” The collective pressure on China would be enormous.

4. Edsats (Education Satellites)

To help put pressure on China, it will become easier as the number of non democratic nations besides China dwindles to zero. One very effective way to do this will be to use “edsats” (i.e. education satellites) that beam down the internet with very high bandwidth to almost all the planet. These edsats could beam down education programs from kindergarten level to professorial seminars, i.e. all the world’s knowledge, so that the intelligent, enterprising, ambitious, poor, ignorant, 3rd world peasants would be given the means to educate themselves and pull themselves out of their 3rd world ignorance and poverty.

Political science shows (based on the experience of 100 countries over the past half century) that once the standard of living of a country surpasses \$6000-\$8000 per person per year, its one party dictatorship switches to a multi party democracy. One of the major aims of the DU member states should therefore be to provide an extensive edsat

capability, by sending up the satellites, and beaming down the world's knowledge to dirt cheap satellite phones that even a poor peasant can afford. The creation of an edsat system should be one of the major goals of the DU, with a large department devoted to the purpose at the UN.

By allowing 3rd world peasants to educate themselves and hence become middle class, they will not tolerate living in a backward, poor, 3rd world dictatorship, and will push for democratization. Hence to dedictate the planet, the DU countries should establish an edsat system. If China threatens to shoot down any edsats that beam down prodemocracy messages to China's peasants, then that would be reason for even greater moral pressure on China's leaders. "You are deliberately keeping your citizens ignorant and poor, just so you can stay in power. You are worse than the Arab dictators, and you have certainly killed more of your own citizens. You truly are morally inferior."

As Chinese tourists travel and learn that China is the only country in the world not to have an edsat service, that will make these Chinese travelers contemptuous of their own government, so that when they return to China, they will put even more pressure on their Chinese leaders to democratize.

With the internet speed doubling every year and the ever increasing number of websites with links to thousands of global radio stations or hundreds of global TV channels, it will be possible for NGOs (non governmental organizations) to invite huge numbers of volunteers *worldwide* to

contribute to a “Wikileaks” type organization by sending to it the names and emails of all communist party members and all university professors of the remaining dictatorial countries, and to invite other volunteers to email these people excerpts from books banned in the dictatorship countries. The aim would be to educate the brainwashed and censored minds of the opinion makers of these countries with proof of the evil histories of their countries’ governments. For example, in China’s case, volunteers could use “Google translate” to email these people about Mao’s 70 million, about the 50 million that have been through the laogai, about Deng’s decision to shoot the prodemocracy students in Tiananmen Square in 1989, etc. Perhaps overseas prodemocracy Chinese, or Taiwanese, or Hong Kongers, could help with the translations. These volunteers could consult appropriate texts containing such information to be found on the organization’s website. With millions of volunteers all over the world aiming at a common goal, namely educating the elite of the dictatorial countries, the fall of these dictatorships can only be hastened. Such a “dedictate.org” could be set up rather easily by a small number of dedicated individuals. Perhaps the organization “hackers anonymous” might assist with this “dedictatorial” cause.

Once China democratizes, the major task of the DU will have been completed. It will then be possible to simply push the small stragglers into line with total economic embargos, giving them no choice but to “follow the big (democratic) boys.” Once the whole planet is democratic, it can then pursue with greater energy the far more ambitious

task of forming a global state “Globo,” with a global language, a culturally homogenized world population, and a world government, hence no more wars, no arms trade, no ignorance, no poverty, but still with the rising threat of the artelect (= ultra intelligent machine) which will prove to be the greatest political challenge of the 21st century for the planet.

C5) CULTURAL NAME ORDERING (CNO) CONVENTION

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Abstract

For the past century or so, it has been the convention to reverse the order of the family name and personal name of Asian authors in international conferences and proceedings, etc. With the rise of China and its inevitable dominance in the 21st century, this piece of unconscious western chauvinism will need to change. This short essay suggests a new convention that should be suitable and fair to both eastern and western names.

1. Introduction

Until the past decade or so, western scientists and thinkers dominated international conferences and academic authorship, so when the occasional Asian author appeared, it was natural for the western editors to reverse the order of the Asian's name, i.e. put his/her personal name first, and the family name second, i.e. according to the usual western convention. However, in eastern cultures, the convention is to put the family name first and the personal name second, the reverse of the western convention.

We are now (2012) at a tipping point, where the number of Asian names in international conferences etc is pretty much fifty fifty, so that Asian authors will soon start to question the traditional naming order. They will want to change the way things are done. I see three possible “cultural name ordering conventions.”

a) The Western Dominated Name Ordering Convention

This is the current convention, i.e. put the personal name first, and the family name second. So if an author is Asian, then his/her name will be reversed, to make it conform to the Western convention. This feels rather Western chauvinist and provincial minded to Asians.

b) The Eastern Dominated Name Ordering Convention

This is a new convention, namely to put the family name first, and the personal name second. So if an author is Western, then his/her name will be reversed, to make it conform to the Asian convention. This feels rather Asian chauvinist and provincial minded to Westerners.

c) The Cultural Name Ordering (CNO) Convention

This convention, that I now propose, is fair to both sides, to Westerners and to Asians. It is quite simple. It contains three essential ideas, namely

- i) Put the family name first, if the author's name is Asian.
- ii) Put the personal name first, if the author's name is Western.
- iii) To avoid confusion as to which name is the family name, write the *family* name in CAPITALS

For example, DENG Xiaoping; Jack KENNEDY.

When alphabetical lists need to be made of such authors, family names can still be used for the ordering, e.g.

Tom BRADSHAW, CHANG Min, Susan DANIELS

**C6) POLITICALLY CORRECT (PC)
vs.
POLITICALLY REALIST (PR)**

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Imagine a confrontation between a PCer and a PRer (someone whose political values are based on scientific realities), a clash between two value systems, two ways of interpreting the world. The PCer tends to believe such things as :- “I’m a patriot.” “Women have the same abilities as men and should be treated with equal respect as men.” “There would be no differences in average mental abilities between the races (Caucasoid, Mongoloid, Negroid) if societal obstacles against the underprivileged could be removed.” “It is very rude to criticize the nationals of other cultures.” “Antisemitism is taboo.”

PRers look upon PCers as “*isscienate fairies*” (“*isscienate*” means “ignorant of science”, a useful word equivalent to the words “illiterate” (cant read), and “innumerate” (cant do math)) and “fairies” because the PRers see the PCers living in a fairyland in which the latter believe what they want to believe, rather like religionists, ignoring the fact that modern science refutes these beliefs. At the time of writing (2013), especially in migrant countries such as the

US, Canada, Australia etc, PCers are still in the majority, but the star of the PRers is definitely rising.

Over the past decade, I have become increasingly frustrated and impatient with the whole concept of PC because I don't like being lied to. I have built up a real aversion to being lied to by major institutions such as conscripting governments, the feminist movement, the antiracists, monos (monocultured nationalists), Zionist Jews, etc. My value is that if negative truths and diplomatic lies clash, then I prefer the former. For example, when I wrote recently that "blacks are the dumbest people in the world" some American emailed me saying that "you cant say that in America." The European in me (I lived about 20 years in Europe) loved the intellectual upper class value prevalent in large population old world cultures, that "the argument takes precedent over the ego") winced at this, with its implied anti-intellectualism, its disrespect against the sages (sageism), and its general middle class mindlessness that is one of the reasons why I did not like living (5 years) in the US (where 70% still believe in religious superstitions, and 50% think the earth is less than 10,000 years old !!!) I hugely preferred the intellectual values of the French ("en France, les intellectuels sont les dieux" = in France, the intellectuals are gods).

When I was 20 (I was born in 1947), my first country's government (Australia) conscripted me to fight the Viet Cong in Vietnam, using me as a political pawn to keep the US interested in the ANZAS pact (a political agreement between the US, Australia, and New Zealand, that if

Australia or New Zealand were invaded, the US would defend them militarily, even with the bomb if necessary. I didn't even have the vote at that time. I remember prowling the cemetery at night next to my university college, in paranoid rage, hatching schemes to throw grenades into the parliament to assassinate the conscripting politicians ("conscription is an assassinable offence"), who were forcing me to risk my life to defend *their* ideologies. My sympathies were with the Communist Vietnamese peasants who had thrown off the old regime in which land owners were taking 70% of the crop from the peasant farmers. If I were such a farmer, I would love Marx for helping overthrow such economic tyranny. "Greater love hath no man, than to lay down his life for his country" Bullshit, bullshit, bullshit! I have lived in 7 countries, and there are nearly 200 of them. They all are preparing for the next war, wasting trillions of dollars a year with their defense budgets. To a multi (multicultured person) the nation state is increasingly a relic. Nationalists are seen by multies as "one country bumpkins", unsophisticated monocultured hicks, who are unable to see the inferiorities of the one culture that has blinded them with nationalist myths.

A bit later in life, I became an avid male feminist, because I hoped the feminist movement would make women "interesting", in the sense that I would be able to share my intellectual passions with them. I grew up in the 50s and 60s when women in the western democracies were housewives and paralytically boring. Over the decades, however, despite a massive influx of women into the professions (medicine, law, etc) the female contribution to

world intellect, science Nobel Prizes, etc remained negligible. I now have the same condescending attitude towards women's intellects as I had in my early 20s. I feel that the feminist movement was teaching me what I now see as myths, but neither they nor I saw that at the time. Some years back, I learned that 100,000s of US school kids have their IQs measured, and that the IQ variance ratio (variance is a measure of how spread out, how fat, the IQ distribution Bell curve is). This ratio of the male variance, divided by the female variance is 1.1 every year. Thus males have a 10% higher IQ variance than females (a wide spread biological phenomenon called GMV (Greater Male Variance)). Hence the morons and the geni are males. It is therefore not surprising that 98% of science Nobel Prizes have been won by men, and that no woman has ever won a Fields Medal or an Abel Prize (in pure math). Prof Rushton (the much renowned researcher into IQ differences between the races) has done careful work on the IQ difference between the sexes and found a difference of 4 IQ points in favor of males. Since men also have a higher level of testosterone in their blood, and hence are more driven, more ambitious, more persistent than women, it is not surprising that "women have made a negligible contribution to world intellect." "The geni are males." So I felt I had been conned by the feminist movement for decades. Looking back, that angered me. I'm also disappointed. As a hetero male (99% of males are) I've never been able to truly share my intellectual passions with women - one of the existential tragedies of the male sage and unavoidable unfortunately, until we genetically engineer the female brain.

Now it is the turn of the antiracist crowd to warrant my distemper. Once I retired 3 years ago, I have more time to watch YouTube documentary videos and academic talks. I got interested in racial IQ differences and watched the debates on this topic. What I found particularly interesting was the “World IQ Map”, which shows the average IQs of peoples living in different regions of the earth. For example, starting from bottom to top, the very dumbest people in the world (as measured by culture free IQ tests, e.g. Raven) are the Kalahari bushmen (the pygmies) with an average IQ score of 55. Next are the Australian aborigines at 60. Then a billion black Africans at 70, followed by a great swathe of humanity at 85 (the American natives, American blacks (actually “grays” because there was so much raping going on in the slave period, mixing black and white genes), north African Arabs, Middle Easterners, Indians, and South East Asians, then at 100, the Europeans, Americans, Russians, etc and at 105, the smartest large population groups in the world, the north east Asians, i.e. Japanese, Koreans, Chinese. The very smartest minority group in the world are the American Ashkenazi (originating from eastern Europe) Jews at 115 (and if you limit the IQ scores to only the verbal and analytical components, then the *average* is 125). It is therefore not surprising that the Ashkenazi Jews have won 40% of the science Nobel prizes.

As a 7 country multi, and as a Globist (someone who wants to live in a democratic global state, aka world government) I consider “culture bashing” not only to be justified but desirable. There are several prerequisites for the

establishment of a global state, namely, the creation of a world media, that will come with the yearly doubling of the speed of the internet (BRAD = bit rate annual doubling), providing soon, vivid 3D images of the earth to the whole planet - “everyone gets everything;” the creation of a world language (a simple consequence of BRAD), and finally a culturally homogenized planet, creating a global culture, killing off national cultures as we all become “Globans,” absorbing the very best ideas that the whole planet has to offer, spread rapidly using the world language on the world media. To Globans, it is a matter of political policy to culture bash, in order to shake the nationalist monos out of their complacency. If such monos experience having the inferiorities of their monoculture being criticized, bashed, from all sides, when 95% of the population right across the planet says independently the same negative things about the mono’s culture, then probably they will be forced to believe it. So the PC attitude that it is taboo to criticize other cultures is the very opposite to what Globists espouse. Globists are more likely to be PR, because they are more likely to be multies, and multies see clearly, due to their own multicultural experience, that monos suffer from the inferiority of their own stupid customs, but don’t see them as stupid, simply because they are customs, and are the mono’s customs, hence are unquestioned. So culture bashing also belongs to the PRers value system.

Even more recently, I have been watching YouTube and emule.com documentaries on the Zionist Jewish theft of Palestine and the Zionist ethnic cleansing of the

Palestinians. That so disgusted me, that I started to look into Jewish history to see what other horrible things the Jews have done over the centuries. I'm now a strong antisemite, lashing out at the antigoyism of the Jews, as a people. I came to the conclusion that the Jews are the world's most hated people, because of their deeply ingrained antigoyism (i.e. hating non Jews – even the Jewish Talmud, a bit like the Christian bible, written around 600 AD, is riddled with passages expressing virulent hatred against the goyim, i.e. non Jews, so the Jews have been hated for millennia). You will need to see other essays of mine on this topic to understand the litany of horrible things the Jews have done to humanity – the worst being that they are indirectly responsible for more deaths in the 20th century than any other people. The American Jews have taken over the US media, Hollywood, finance, banking, and government, and converted America's democracy into a Zionocracy and Plutocracy (e.g. Jews provide over half of the election campaign funding of US politicians, and hence call the tune.) As American sages (intellectuals) become aware of all this, a “new antisemitism” will spread across the US in the coming 5-10 years, resulting in the imposition of quotas on Jewish power, so that they cannot continue to abuse the US taxpayer, using their superior intelligence to dupe Americans into paying trillions of dollars to have the US fight Israel's wars (Iraq, Afghanistan, maybe Iran soon). I have the greatest contempt for the Zionist Jews because they have done the most damage. You don't have to be a Palestinian to hate Jews, you only need to be informed, and that is now possible thanks to the internet, to YouTube, and

file sharing sites such as emule.com The greatest enemy of the Jews is the internet, and perhaps Al Jazeera television, which is only now starting to spread over the US, with essentially the same message as what I have said in this paragraph. Being publically antisemitic is definitely anti-PC. Thanks to the American Jews' monopoly of Hollywood, and the 5 major news outlets in the US, the American public has been utterly brainwashed that it is taboo to criticize Jews. This reflects poorly on the anti-intellectualism of middle class America, that upper class European intellectual Jews were able to do this so easily.

So when a PRer, who insists on the scientific truth, confronts a PCer with the above scientific findings, sparks fly. The blacks, who are, as science shows, the dumbest people in the world, will simply have to lump it. You can't beat science. If "black nationalists" try to do so, they will be discredited and made to feel "isscienate fairies," painful though it may be, especially American blacks, who are a full 15 IQ points dumber on average than whites and who also live in a very IQ and education conscious culture like the US. You can say that "white supremacy" is scientifically sound. But then, you can also say that "north east Asian supremacy" is also sound, and topping them all off, is the utter supremacy of the Ashkenazi Jews, whose intelligence I admire, given that I'm a sage myself, but consider it a tragedy for the Jews that their intercultural EQ is nothing like their IQ. The Jews seem to be pathologically incapable of reflecting upon the negative effects they have on other peoples that has made them the most hated people in history, e.g. over the past half millennium or so,

nearly every country or dukedom in Europe has thrown out the Jews, *independently*. This shows there must be something detestable about the Jews' behavior towards these peoples, e.g. the Spanish threw out the Jews, so did the French, and the Brits, the Poles hated them, the Russians pogrommed them, the Germans holocausted (but did not gas them - no scientific evidence for that, the Holocaust, capital H, is a Jewish marketing concoction ("Shoa business") from the 1970s to extract "guilt money" principally from the US and Germany for Israel, which is yet another example of Jewish abuse of other peoples, of antigoyism. The Jews not only control US media, they do the same in the major countries in Europe, Australia, etc)

So the PRer in me now lashes out at nationalist conscription myths, feminist myths, antiracist myths, mono myths, and Jewish Zionist myths. I'm a scientist. I have always loved science since my brain wired up in the adult mode. I love looking for the deeper reality, which is one of the reasons I love pure math, math physics and philosophy so much, the deepest subjects. So, to be lied to, to be mythologized, is anathema to me. *I want the truth!* Thank god for the internet, so that my mind can be expanded out of its former pathetic ignorance.

C7) PEAKERS and SAGES OIL and WATER

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Abstract

Peakers (i.e. people of average ability who lie in the peak of the IQ or ability Bell curve) and sages (intellectuals, people of high IQ, professors and researchers) are like oil and water, they don't mix. This essay spells this out and aims to teach the peakers that they should simply accept their inferiority relative to the sages as an unavoidable fact of nature.

The IQ and knowledge gap between sages and peakers is so vast that the two communities have nothing in common, and have nothing to do with each other. They are like oil and water. They don't mix. Sages see peakers as the "3 Is" (ignorant ignorable idiots) and peakers see sages as antisocial elitists. Sages have sage minds, and are hungry to use them. They want to understand things, and spend most of their time thinking and learning. They bury themselves in books and inquiry. Over a lifetime, they know a ton of stuff and have opinions on a huge range of topics. They are sages.

Peakers, on the other hand, don't even read books. They watch movie videos all the time, or main stream media. They are typically a massive 50 IQ points dumber than sages, so don't do much thinking, as judged by sages. Over a lifetime, their

knowledge level is negligible compared to sages, and hence their opinions are very poorly fact based, and hence considered worthless by the sages.

To protect themselves from the stupid ignorance of peakers, sages avoid them like the plague, by avoiding groups, which given the realities of the Bell curve, consist mostly of peakers, which is where the very definition of the word came from. All sages have had the experience of feeling they are wasting their time on some silly peaker who can't even express his simple thoughts, and tend to avoid being confronted by such people. I've been doing that for decades – I call it “boredom protection.” When I'm in the park studying pure math, or math physics, and some Chinese peasant comes up to me, curious to know what I'm reading, I just say to him (nearly always a him) “Bu dong!” which means “I don't understand, I don't speak your language” and they go away, so that I'm saved ten minutes of wasted time.

Oddly, once in my life, I've had the same experience occur TO me, which I found most amusing. This was in Silicon Valley, near Stanford University, one of the best in the world. The guy I spoke to was reading some heavy math, so I opened up with “Are you a math prof?” No reply. I looked him in the eye. He grimaced a little and kept silent. I got the message, chuckled a little, since this was the first time such a thing had happened to me. So I said to him (more or less). “Let me guess, you're a prof at Stanford in pure math or math physics. You're so much brighter than virtually anyone you ever come across, except for colleagues on campus, that you avoid the ignorant masses like the plague. They only waste your time and try your patience. I fully understand. I use the same strategy myself. I don't expect you to reply.” He humphed a little with a slight smile and walked off.

If you're a peaker reading this (which is unlikely), you may be thinking of me (and the Stanford prof) as “What an arrogant

asshole, what a self superior jerk!” The implicit assumption behind this attitude is that peakers expect sages to behave like them, to be civil and accommodating to them, the way other peakers are. Two thirds of the populations are peakers, so peaker mutual civility is so common place, it become unconscious to peakers and they expect it from everyone.

But sages are not peakers. Peakers are given the “3 fingers” by sages for good reason. Peakers truly are ignorant ignorable idiots as seen by sages, and for self protection, sages avoid peakers, both conversationally and physically. Peakers need to learn this and to expect it. Peakers may not like this reality, but it is a reality, that will not go away. It is inevitable given the fact of life of the IQ Bell curve. Peakers need to make the analogy of how they feel towards real morons, e.g. street sweepers, or garbage collectors, and then ask themselves “Isn’t it reasonable to expect that sages are to me, as I am to morons?”

One of my motives in writing this essay is to express my impatience with new world anti-intellectualism. It is strong in colonies for the obvious reason that the intellectual upper class of the colonizing power chose not to migrate. I have lived in two English speaking British colonies, my first and my sixth countries (Australia, and the US). I felt ill at ease and culturally unsupported in both, and rejected both, by voting with my feet, to large population old world cultures, where I did feel supported, since their large old world populations produced enough sages to be self supporting.

One of the attitudes of the large population European cultures (Germany, Britain, France, Italy) I really liked when I was living in some of them, was that when it came time for an intellectual discussion, the *argument* came first, and not the *ego* of the person you were discussing with. This attitude was so different from the middle class attitude of the colonies. I remember I effectively said

goodbye to one of my American girlfriends with the following dialog. I was expressing my frustration with certain aspects of American culture to her, and suddenly she blurted back “But I’m American!” I replied, “So what! The argument remains valid.” “But I’M AMERICAN!!” I said goodbye and never saw her again.

The main point of this essay is to teach peakers that they should expect to be snubbed by sages. If a sage pretends to be interested in a peaker’s intelligence or knowledge level, then that is all it is, i.e. pretence. Very quickly, the sage will bow out of the conversation and walk off. Peakers should expect this. It is unrealistic not to do so. Unfortunately, in the colonies, the sages do not have the European upper class tradition of slapping down middle class mindlessness. In Europe, especially in the “big 4.” the middle class is actually afraid of the intellectual upper class. Europe has government TV, so it is possible for sages in Europe to attack the ignorant stupidities of its middle classes.

The US does not have government TV, so by default, its main stream media is commercial, and hence, inevitably, aimed at the intellectual level of the peakers, since they are the numerical majority, they are the “ad mass.” The sages are ignored on US main stream media, so they don’t get the opportunity to slap down US middle class mindlessness, which to European sages is breathtaking – e.g. 70% of Americans are still religious, believing in 2000 year old superstitions such as life after death, sons of gods, resurrections, virgin births, miracles, angels, etc. 40% of Americans believe the earth is less than 10,000 years old!!!

Now that we have the internet, European sages, at least the English speaking ones, are starting to have a strong effect on American middle class mindlessness. The most obvious example that comes to my mind is Richard Dawkins, who almost singlehandedly has caused a third of the US population to “come out” as atheists. Europe is decades (not years) ahead of the US in terms of the

proportion of the west European population who look on religions as human invented fictions, especially the UK, Scandinavia, etc. Japan too is one of the most atheistic countries in the world. I remember my Japanese girlfriend saying to me when visiting the Salt Lake City Mormon temple, that she thought the Mormon beliefs were “a mental disease.” I just laughed.

So, I’m hoping I’m helping new world sages to assert themselves the way the old world sages do unconsciously. If an old world sage hears some middle class BS (bull shit) he is much more likely to brow beat the middle class idiot, than will a new world sage. A result of this is that new world sages are often ridiculed and belittled by new world peakers. Old world sages wouldn’t tolerate this for an instant. They would lash out and mercilessly brow beat the middle class idiot, putting him in his inferior IQ and knowledge place. Old world middle class members expect this, since they get it all the time in the government controlled media.

So “New world sages, you should learn from your old world colleagues, learn to stand up for yourself and lash out when you hear sageist remarks or labels like “egg head”, “geek”, “nerd”, etc. Retaliate with labels like “peaker,” “sub” (subs are dumber than peakers, i.e. in the bottom sixth of the population.) and assert your superiority.” Peakers who look down on sages are living in a fairy land. They are too dumb and ignorant to realize their genetically inferior position. It is your role as a new world sage to put them in their place with a sharp retort which will make them sit up and take notice. “Hey, this geek fights back. Better not talk to him next time, or he might really bruise my ego!”

On FERMITECH (Femto Meter Technology) and TOPOLOGICAL QUANTUM COMPUTING (TQC)

D1) FERMITECH

Searching for Phenomena in Physics that May Serve as Bases for a Femtometer Scale Technology

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A Little History

In the winter of 1990/1991, I was spending two months in Boston, staying at an MIT “frat”(ernity) with a very young (16 years old) colleague of mine, working on a Connection Machine (CM5) trying to evolve 3D cellular fission rules to grow a 3D embryo. During those bitterly cold months, there happened to be a meeting one evening of the MIT Nanotech Club that I thought would be interesting to attend, so I did. The meeting featured a telephone hook up “Q and A session” with Erik Drexler (in California), generally considered to be the “father of nanotech”. I asked him whether he thought a “femtotech” might one day be possible. He pooh-poohed the idea, which struck me as odd,

since he was so critical of those conservatives who pooh-poohed his vision of a nanotech (i.e. molecular scale engineering) with objections such as “The Heisenberg Uncertainty Principle forbids it”, or “Thermal noise would destroy the accurate positioning of atoms”, etc. Drexler persisted nevertheless, wrote his famous text in 1992, and now nanotech is a thriving research field with progress being made every month.

Half a decade later, I was visiting the Santa Fe Institute in New Mexico, and got an opportunity to ask Murray Gellmann, the SFI resident genius (and father of the quark, the eightfold way, charm, strangeness, the omega minus, etc) “Can you think of any phenomenon in physics that might be used as the basis for a femtotech?” He hadn’t really thought about the question, but managed to say that he had had a business meeting one time to consider the possible industrial applications of the neutral kaon particles.

So, it should be clear from the above two instances, that the question “What comes after nanotech?” has been on my mind for over 2 decades. If fermitech is not possible, then sooner or later, humanity (or post humanity) will start running up against the confines of nanotech and start itching to move down to the fermiscale. Now that nanotech is well launched, perhaps the time is now ripe to start thinking about “what’s next?”, i.e. about the possibility of a fermitech.

A decade and a half later, i.e. now, I find myself in my early 60s, ARCing (i.e. After Retirement Careering, which

I describe as “wage free careering in the third third of life”) and returning (after working 20 years on artificial brains) to my old love of mathematical physics, studying intensively PhD level pure math and mathematical physics, with the view of writing several books on math/physics topics, such as “Topological Quantum Computing” and “Fermitech”. I am now actively hunting down phenomena in physics at the femtometer scale that might serve as substrates to allow computation and engineering at that tiny scale.

Since a femtometer (a.k.a. a “Fermi”) is 10^{-15} of a meter, to find such phenomena implies that one should be hunting at the nuclear, nucleon, and elementary particle levels. Hence one should be studying nuclear physics, elementary particles physics, QCD (quantum chromo dynamics), etc. I spend my afternoons in my favorite (beautiful) park, and my nights in my apartment, studying the following subjects in pure math, and theoretical physics, partly because of a deep inherent love of these topics, as well as being motivated to use this knowledge to try to find bases for a fermitech.

In pure math, I’m studying :- finite groups, abstract algebra, Lie theory, general topology, algebraic topology, geometric algebra, smooth manifolds, complex manifolds, representation theory, ring theory, Galois theory, knot theory, quantum groups, low dimensional topology, etc.

In theoretical physics, I’m studying :- quantum mechanics, quantum field theory, nuclear physics, elementary particle physics, quantum electrodynamics (QED), quantum

chromodynamics (QCD), special and general relativity, gauge theory, supersymmetry (SUSY), superstring theory, M-theory, brane theory, conformal field theory (CFT), topological quantum field theory (TQFT), topological quantum computing (TQC), etc.

At the top end of both subjects, low dimensional topology and gauge theory have merged, thanks to the genius of Ed Witten, today's Einstein, and the only physicist ever to have won the coveted Fields Medal for mathematics. I call this math-physics merge "mathics".

So, I have my plate full, undertaking an ambitious program of study and keeping an idea note book on my desk, that I'm constantly jotting ideas into.

But, I'm only one person. My good friend Ben Goertzel and I email each other almost daily, so inevitably I was reporting on my studies to him, and got him interested in the topic. He started googling the key word "femtotech" and started his own paper chase that he reports on in a separate essay, twin to this one. It soon became clear to me that two heads are better than one, especially when it's Ben Goertzel's head that contains a world class brain. The same logic leads us both to open up the question to the general scientific public, to see what N heads can come up with.

Since it is likely that most of the readers of this e-zine have a computer science background, there may not be many readers who have a strong math-physics background, so if you are a CS type reader, can you please pass on this article

to your math-physics friends and ask them if they have any suggestions as to possible fermi-scale phenomena that might serve as a basis for a future fermitech. If so, I and Ben would be most grateful and interested to receive ideas from you. Our emails are at the top, just below the title.

Details

Before launching into some initial tentative suggestions for fermiscale phenomena that may serve as bases for a fermitech, let me make a comment about “picotech”. Why did I jump from nanotech to fermitech? What happened to 10^{-12} meter (picometer) scale technology? The obvious answer is that nature does not provide us with anything that exists at the picometer scale (unless one assembles such large fermiscale structures that they reach the picoscale). A typical atom has dimensions of about 10^{-10} meters (i.e. angstroms). The nucleus and nucleon is about one hundred thousand times smaller (i.e. “a fly in a cathedral”), i.e. 10^{-15} meter, or “Fermi”. So nature simply does not provide any “building block” at the picometer scale. Hence we are forced to jump down by a factor of a million from the nano scale to the Fermi scale.

If ever a fermitech comes into being, it will be a trillion trillion times more “performant” than nanotech, for the following obvious reason. In terms of component density, a fermitech block of nucleons or quarks would be a million cubed times denser than a nanotech block. Since the fermitech components are a million times closer to each other than the nanotech components, signals between

them, traveling at the speed of light, would arrive a million times faster. The total performance per second of a unit volume of fermitech matter would thus be a million³ times a million = a million⁴ = a trillion trillion = 10^{24} .

I haven't even started thinking yet about possible applications of such a vast increase in capability of fermitech over nanotech, especially if quantum computers can be built to be robust against noise, by storing bits in topological quantum fields (topological quantum computing (TQC)).

On the desktop of my laptop, I keep a file called "BookPlans" which contains the titles of about a dozen books that I would like to write in the (hopefully) 30+ years left in my (ARCing) life. One of those is titled "Fermitech", with the same subtitle as this article. I have even written up a very tentative book plan, with chapter headings, where each chapter is concerned with a fermiscale phenomenon that just might serve as a basis for a fermitech. I list here these phenomena, and leave it to readers to use Wikipedia to learn about each topic. Please be conscious that this list is very tentative, just my "first pass" guess. I'm hoping after a few years of intensive study of math-physics, I will be able to create a much better list, thanks also to suggestions coming from readers of this article.

Here is the list :-

Nuclear Molecules, Quark-Gluon Plasma, Strangelets, Kaons, Surface of Neutron Stars, QCD (Quantum Chromo

Dynamics), Quarkonia, Mini Black Holes, Halo Nuclei, Neutron Starlets, Bose Einstein Condensation of Squarks, etc

Presumably, if one is to create, for example, computers at the fermiscale, one would need to assemble large numbers of quarks or nucleons into a stable structure. Ordinary nuclei consist of protons and neutrons, but there is a limit to their size for stability reasons. The range of the strong force is only a few nucleon diameters, so one needs proportionately more neutrons per proton to counter the cumulating electric repulsion that has unlimited range. Once one reaches 92 protons (Uranium), the nucleus is almost unstable, because the cumulative electric repulsion is close to overcoming the strong force, which is only about 100 times stronger than the electric repulsion of the protons.

I've noticed that once one looks upon the many phenomena of nuclear physics, and QCD, one begins to see things in a new light, and starts to ask questions that may not have been asked before. For example, would it be possible to assemble structures that consisted of only neutrons? A single neutron will soon decay into a proton, an electron and an anti neutrino, but neutron stars seem to be stable, containing huge numbers of neutrons, (a massive neutron only nucleus, kilometers across). Could one build somehow a mini (or Fermi) neutron star consisting only of neutrons?

The above is highly speculative, and probably quite amateurish and wrong, but it illustrates the kind of novel thinking that is required if ever a fermitech is to come into

being. It is easy to shoot down aunt sallies. It is a lot more difficult to actually find some physics loop hole that would actually allow a Fermitech. There is an interesting historical analogy that may be instructive. Ever since the phenomenon of radioactivity was discovered over a century ago, physicists knew there was enormous energy contained inside the nucleus. This led many people to ask whether one day it might be possible to tap into such energy on an industrial scale. Even as late as the early 1930s, the great Rutherford, the father of the nucleus (it's his term) thought the idea of industrial scale nuclear energy was "moonshine" (i.e. ridiculous). However, the Hungarian-American Jewish nuclear physicist, Leo Szilard was skeptical and felt there just had to be a way to tap into that enormous nuclear energy, if only he could be ingenious enough to find a way. Well, he did, in 1933, the year after the neutron was discovered, and the same year Hitler came to power in the world's dominant scientific country, i.e. Germany. Szilard's century-changing idea was to shoot a neutron (with no charge, hence would not be deflected by the charge of the nucleus) into a nucleus that was almost unstable, i.e. uranium. The penetrating neutron might make the nucleus unstable, which would split into two half nuclei with less neutrons, hence 2 to 3 neutrons would be shot out at the moment of the split, the "fissioning". These neutrons could then fission other uranium nuclei. The total mass of the two half nuclei, plus outgoing neutrons would be less than the uranium nucleus plus incoming neutron. The missing mass, via Einstein's famous $E=mc^2$ formula, would lead to the outgoing particles having great energy. Szilard's "chain reaction" idea allowed him to calculate that a

football sized lump of uranium could release enough energy to vaporize a whole city. He was not only the first to dream up the idea of how to tap into the energy of the nucleus at an industrial (i.e. military) scale, but he was also the first to realize that Hitler might be the first to get the bomb.

So, readers are asked to take heart. Don't be put off by objections to the idea of a fermitech. If we don't go actively searching for fermiscale phenomena that might serve as a basis for a fermitech, then we will be much less likely to find one. Szilard succeeded by being cynical and brilliant. Perhaps one of you may do the same for fermitech. Who knows, one of the applications of fermitech might be a fermibomb, releasing orders of magnitude more energy than the fission and fusion nuclear bombs of the 1940s and 1950s, that would be capable of destroying not just cities, but whole counties. (I just thought of this fermibomb idea now, writing this paragraph).

The twin essay to this one is written by Ben Goertzel, my good friend, who is more technically minded than I am. I'm more on the visionary/political side, and Ben is more on the analytical details side. So, before I sign off, please email us if you are a physicist or you know someone who is, who has suggestions as to how to create a fermitech. Perhaps we can list the suggestions after this article, with readers responding to earlier suggestions, in a large scale brain storming across the planet. Such is the power of the internet.

By way of a footnote – if fermitech (10^{-15} m) is possible, what about an attotech? (10^{-18} m), a zeptotech? (10^{-21} m), a yoctotech? (10^{-24} m), ..., a plancktech? (10^{-35} m) Since the smaller components are, the faster they can signal to each other, one comes to the jaw dropping conclusion, that there may be whole civilizations inside elementary particles, and that that may be the reason why we don't see signs of advanced civilizations in the cosmos, thus answering Fermi's famous question "Where are they?" (i.e. all the advanced civilizations in space who are billions of years older than the human species). Just maybe, we humans are built with such civilizations in all our constituent elementary particles. Perhaps these "particle civilizations" communicate with each other via "quantum mechanical entanglement", i.e. zero-signal-time action-at-a-distance. Maybe advanced civilizations are all around us, inside us, but are too small for us to see or even be aware of.

D2) TOPOLOGICAL QUANTUM COMPUTING

The “TQC Shock Wave” and Its Impact on University Computer Science Teaching

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Abstract

Topological Quantum Computing (TQC) promises to make quantum computers robust, and hence scalable, in the next few years. Quantum computers are exponentially more powerful than today’s classical computers, so a successful TQC will revolutionize computer science, necessitating that the principles of TQC be taught in thousands of computer science departments around the world. Unfortunately, understanding these principles requires a PhD level knowledge of topics in pure mathematics and theoretical physics. Since most university computer science departments stop teaching math and physics at undergraduate level, the need to upgrade their teaching of these fields to PhD level will generate shock waves in their

teaching policy and faculty hiring. This article shows how a pioneering university in southern China is coping with this problem.

The idea of Quantum Computing (QC), with its exponentially superior computing capacities, compared with classical computers, has been around for a quarter century [Feynman 1982]. However, storing a (qu)bit of information in a very small region (e.g. on the spin of a single electron) makes such storage highly vulnerable to disturbance from the environment (a phenomenon called *decoherence*) [Nielsen & Chuang 2000]. The new Topological Quantum Computing (TQC) [Collins 2006, Day 2005, Das Sarma et al 2006] stores the information topologically, i.e. globally, in the topological invariants of “topological quantum fields”, and is thus far more robust against noise, making quantum computing practical, using phenomena in the Fractional Quantum Hall Effect (FQHE) [van Degrift et al 1992].

However, teaching computer science students the principles of TQC, implies that they be taught PhD level mathematical physics and pure mathematics. Computer science students will need to learn a lot more mathematical physics. This will make the study of computer science *a lot more intellectually demanding* and give it a higher status than it enjoys today. University computer science departments will have to hire or collaborate with professors in pure mathematics, and in theoretical physics, and change their curricula to adapt to the TQC revolution.

Quantum Computers

For many decades, computer scientists felt that computation was a branch of applied mathematics. However, in the 1980s, a new viewpoint grew up, namely that “*New physics implies new computation*”. This means that by employing new phenomena in physics, one can compute more powerfully than with traditional Boolean-logic-based classical computing. By exploiting the quantum mechanical phenomena of *superposition* and *entanglement*, it is possible to perform quantum computing, which can calculate 2^N things simultaneously (where N is the number of (qu)bits in the computer’s (quantum) register, and thus vastly outperform a classical computer, which can only calculate one thing at a time.

If quantum computers can be built successfully, and with large N , then our whole culture will be changed radically. For example, biology will be revolutionized, because quantum computers will be able to simulate large molecules and even cells. Classical computers cannot simulate large molecules, because they cannot simulate large quantum systems. For example, every time one adds an atom to a molecule to be simulated, that molecule’s Hilbert space (in quantum mechanical terms) doubles in size. Quantum chemists can only use classical computers to simulate small molecules. But with quantum computers, every time one adds a qubit to the quantum register, the number of calculations that that register can perform simultaneously doubles. Hence as the size of a simulation problem doubles by adding another atom to the molecule,

by adding another qubit to the quantum register, so too does the computational capacity of the quantum computer. Therefore quantum computers can simulate large molecules. As N increases, 2^N becomes astronomically large. Hence one can imagine simulating DNA molecules, protein folding, cellular components, whole cells, organs, etc. Our whole technological culture will be changed radically, given the exponentially superior computational capacities of quantum computers.

Decoherence

However, this dream of exponentially superior quantum computers has a catch, and that is that quantum computers, as they have been conceived until recently, are *fragile*. In a “traditional” quantum computer, a (qu)bit of information is stored highly locally, e.g. on the spin (up or down) of a single electron. This form of highly local information storage is particularly vulnerable to disturbance from the environment, i.e. other atoms and fields in the neighborhood can interact with the electron and change its state, thus losing the information stored in that state.

Quantum error correcting codes were invented in the mid 1990s to correct such errors [Shor 1995], but only if the probability of error was very low, i.e. about one part in ten thousand. In practice, this is very difficult to achieve. So after a quarter century since the invention of the idea of quantum computation, we still do not have operational quantum computers with large N .

Topological Quantum Computing (TQC)

But, in 1997, a Russian mathematical physicist, Kitaev, conceived the idea of using a so called “quantum topological field” [Kitaev 1997] to store information in the topological invariants of that field, i.e. “spread out” over a wide region, so that if the environment were to disturb a portion of the field, the information stored in that field would not be changed. It would be robust against noise. (As a simple example of a topological invariant, consider a rubber “figure of 8” doughnut. By squashing it, twisting it, the angles and lengths change, but there is a topological property of the object that remains invariant, and that is the number of holes it has, its “genus”).

In 2000, Michael Freedman, a Fields Medal winner, for his work in topology in the 1980s, invented the mathematics of a method for performing universal quantum computation using a topological quantum field [Freedman et al 2000]. Thus the theorists had provided a new approach to quantum computing, that in theory at least could overcome the decoherence problem.

Anyons

The next step, now hotly pursued, is to find phenomena in physics which obey Friedman’s mathematics. The favorite candidate is the so called “1/2 state” in a phenomenon called the “Fractional Quantum Hall Effect (FQHE)” [van Degrift et al 1992] in a specialty known as “Condensed Matter Physics”. The FQHE arises when free electrons

sandwiched between two layers of Gallium Arsenide are subjected to extreme cold, and to an extremely strong transverse magnetic field. These conditions cause the electrons to agglomerate into so-called “anyons”, i.e. quasi-particle excitations, which have weird properties, e.g. fractional charge, and non fermion-boson statistics. They are called “anyons” because they can have “any” statistics.

From quantum mechanics we know that when two fermions (bosons) swap positions, the total quantum state is multiplied by -1 ($+1$). But for the anyons, things are more complicated. If the state of a line of anyons is represented by a quantum mechanical column vector, then when two anyons swap positions, that column vector needs to be multiplied by a matrix, and the matrix will differ depending on whether the two anyons move around each other (in a 2 dimensional “sandwich”) clockwise or anticlockwise.

If one traces out the paths taken by 2 anyons as they swap positions, as “world lines” as in relativity theory, then the paths will look like a double helix, twisting either clockwise or anticlockwise as one looks down on the “upward” moving helix. This spiraling of the anyon pair is called a “braiding operation”. A sequence of such operations over N anyons is called a “braid”. The set of all possible braids for N anyons forms a mathematical group called the “braid group” [Jack et al 2003].

Friedman and others showed that any quantum computational calculation can be approximated to any desired accuracy by performing a sequence of braiding

operations on anyons. A sequence of braiding operations corresponds to multiplying the initial state of the anyons by the appropriate sequence of matrices. The longer the sequence, the greater is the possible accuracy of the calculation. In traditional quantum computing, an initial

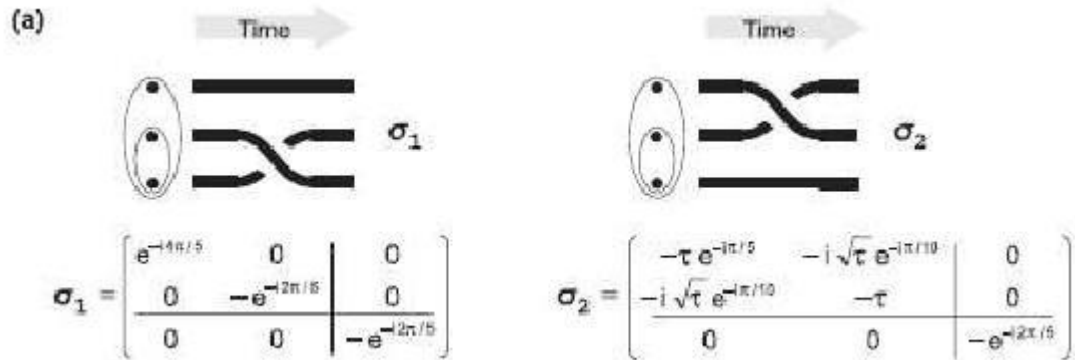


Fig. 1 Two Elementary Braiding Operations (EBOs) and Their Corresponding (Anyon Quantum State Changing) Matrices

quantum state is multiplied by a unitary matrix, to create a new state, which is then measured to give the result of the (quantum) computation. Thus Friedman showed that any unitary matrix can be approximated by multiplying by the matrices that correspond to the sequence of braiding operations. I call these “elementary braiding operations” EBOs.

Bonesteel et al [Bonesteel et al 2005] found anyon EBO sequences that approximate the building blocks that can be used to perform any quantum computation (e.g. single qubit phase change gates, and the CNOT (controlled NOT) gate). Fig. 1 shows elementary anyon anti-clockwise and

clockwise braiding operations (EBOs), and their corresponding matrices.

Condensed matter physicists have already confirmed experimentally that the quasi-particle excitations of the FQHE act as anyons, e.g. the $5/2$ excitation. It is also known that only “non-Abelian” (i.e. the two matrices A and B corresponding to two braid operations do not commute, i.e. $AB \neq BA$) anyons can perform universal quantum computation. The $5/2$ excitation is non-Abelian, but unfortunately is incapable of universal quantum computation for other reasons. However, mathematical simulations have shown that the $12/5$ anyon is non-Abelian, and is capable of performing universal quantum computation, so the experimental condensed matter physicists are now feverishly conducting experiments to confirm that the $12/5$ excitation is in fact a non-Abelian anyon, and hence could serve as the corner stone of topological quantum computing.

Not surprisingly, interest in TQC has *skyrocketed*, now that it looks likely that a physical means to implement the already established TQC theory is at hand. Workshops on the topic have popped up like mushrooms in the past year or two, in the US, UK, China etc. Governments are starting to get interested, since if the condensed matter physicists confirm that computationally universal non-Abelian anyons exist in reality, as is strongly expected, then the prospect of implementing topological quantum computers becomes much more realistic. The creation of scalable

topological quantum computers will have profound technical, economic and cultural impact.

The Educational Impact of TQC

But, there is an educational price to be paid. Ordinary Quantum Computing (QC) is usually taught at senior undergraduate and/or first year master's level, because the level of mathematics and physics knowledge needed to understand QC is at that level, e.g. using linear algebra, Hilbert spaces, etc. However TQC requires a much higher level of knowledge of pure mathematics and theoretical physics. For example, deriving the matrices that correspond to the braiding operations (EBOs) described briefly above uses such notions as the R and F matrices and the pentagonal and hexagonal relations of "Quantum Groups" and "Conformal Field Theory", which is PhD level pure math and theoretical physics.

Given the critical importance of TQC to humanity's future, computer science departments at thousands of universities around the world will come under pressure from national governments to teach the principles of TQC, and this in turn will send shock waves through these departments as they come to terms with the reality of the level of difficulty of the pure math and theoretical physics needed to teach it.

As a consequence, computer science (CS) as a specialty will quickly gain a new reputation, i.e. as being one of the toughest and most intellectually demanding specialties on campus, comparable with that of pure mathematics and

mathematical physics. In fact, CS will need both, as well as the usual notions of computing.

In time, the status of computer science as a specialty will rise, as the average intelligence level of the students studying it rises, as it must. Today's *average* computer science graduate student will not be able to cope with the high level of mathematical abstraction needed to understand such TQC topics as quantum groups, conformal field theory, quantum field theory, topological quantum field theory, algebraic topology, etc.

TQC Courses

Computer science departments will have to hire or collaborate with pure math and mathematical physics professors to teach TQC related topics. Computer science deans and heads of department will have to restructure their CS courses, and so will need guidance on how to do this. What now follows is a list of those topics that will need to be taught in CS departments in order for graduate students to understand TQC. It includes a detailed time table of the TQC type courses that were originally planned to be taught at my university (i.e. Xiamen (pronounced “She Ah M en”) University, in the south of China). These pipelined courses take 4 years (e.g. a 3-year master’s course, plus 1 year of PhD, or a 2 year master’s course, plus 2 years of PhD). See Fig. 2 for details. This time table and course list may be useful to deans and department heads who are considering doing something similar for their universities. In China, it is referred to as the “Xiamen Model” (for TQC teaching).

	Tues	Wed	Thurs	Fri
Year 1 Semester 1		Mp1		Mm1
Year 1 Semester 2		Mp2		Mm2
Year 2 Semester 3		<i>Mp1</i>		<i>Mm1</i>
Year 2 Semester 4		Mp3		Mm3
Year 2 Semester 4		<i>Mp2</i>		<i>Mm2</i>
Year 2 Semester 4		Mp4		Mm4
Year 3 Semester 5		<i>Mp1</i>	<i>Mp3</i>	<i>Mm1</i>
Year 3 Semester 5		Mp5	<i>Mm3</i>	Mm5
Year 3 Semester 6		<i>Mp2</i>	<i>Mp4</i>	<i>Mm2</i>
Year 3 Semester 6		Mp6	<i>Mm4</i>	Mm6
Year 4+ Semester 1	<i>PhDp7</i>	<i>Mp1</i>	<i>Mp3</i>	<i>Mm1</i>
Year 4+ Semester 1	<i>PhDm7</i>	<i>Mp5</i>	<i>Mm3</i>	<i>Mm5</i>
Year 4+ Semester 2	<i>PhDp8</i>	<i>Mp2</i>	<i>Mp4</i>	<i>Mm2</i>
Year 4+ Semester 2	<i>PhDm8</i>	Mp6	<i>Mm4</i>	<i>Mm6</i>

Fig. 2 The “Xiamen Model” TQC Teaching Schedule

The above table requires some explanation. The “M” refers to a master level course. The “PhD” refers to a PhD level course/seminar. The “m” following an M refers to a math course, and a “p” to a physics course. The numbers refer to the semester number over 4 years, i.e. 8 semesters, e.g. Mp3 is the master’s level course in physics in the 3rd semester.

At my university, our strategy was that I would teach all courses at least once, to give me experience of all the TQC based courses. However, since the courses are pipelined over 4 years, if I were to teach all courses, the total teaching load would become unreasonably large, so I teach each new course once, then pass it the following year to a colleague in the math or physics department. However, I do teach the quantum computing course in Mp3 and the topological quantum computing, and condensed matter quantum field theory course in Mp6, and all the PhD TQC courses.

The courses in Fig.2 in *italics* in a given year are taught by professors in the math or physics department after they have been taught once by me. Courses in **bold** in a given year are taught by me in that particular year and for the first time. Courses in ***bold italic*** are taught by me permanently.

Students are offered the “TQC/MPC” (Topological Quantum Computing/Math-Physics-Computing) specialty as an “orientation”. Once they enroll in it, they commit themselves to spending 3 years of their master degree and a further year or two in a PhD program (if they continue to a

doctorate degree) taking TQC/MPC courses. The first year at the master's level is a "prerequisite" year, in which CS students learn topics from undergraduate level math and physics that are needed to understand TQC. Math and physics students are allowed to take the courses and get credit.

The actual contents of these courses are now listed. Each course is for 3 lecture hours per week, for about 18 weeks.

Year 1

1st Semester

Math (Mm1): Vector Analysis, Real Analysis, Complex Analysis, Fourier Analysis

Physics (Mp1): Electromagnetic Theory, Special Relativity, Statistical Mechanics

2nd Semester

Math (Mm2): Finite Group Theory, Differential Geometry, Basic Topology

Physics (Mp2): Analytical Mechanics, Quantum Mechanics

Year 2

Once the "TQC/MPC orientation" masters students have completed their first "*prelims*" year, they then begin more serious study of TQC/MPC topics at master's level.

3rd Semester

Math (Mm3): Algebraic Topology

Physics (Mp3): Quantum Computing

4th Semester

Math (Mm4): Lie Groups/Algebras and Representations

Physics (Mp4): General Relativity

Year 3

5th Semester

Math (Mm5): Knot Theory, Braid Groups, etc.

Physics (Mp5): Quantum Field Theory (QFT)

6th Semester

Math (Mm6): Manifold Theory

Physics (Mp6): Topological Quantum Computing (TQC),
Condensed Matter Quantum Field Theory (CMQFT)

Year 4 (PhD Level) and Beyond

At my university, about half of the master's students continue into a PhD program. PhD level TQC/MPC courses take the form of weekly “research seminars” in which students study and discuss advanced text books and research papers on the following topics.

Math (PhDm7,8): Conformal Field Theory (CFT), Kac-Moody Algebras, Operator Algebras, Quantum Groups, etc.

Physics (PhDp7,8): Topological Quantum Field Theory (TQFT), Advanced Topological Quantum Computing (TQC), Gauge Theory, String Theory, etc.

Two Years of Teaching TQC : Lessons Learned

This section was written (Oct 2009) two years after the paragraphs written above in this article. It describes the actual experiences of the author in teaching TQC courses to masters level math, physics and computing.

I moved to Xiamen University, (Xiamen, Fujian Province, China) early in 2008, and under contract I started to teach a set of TQC courses, similar to those mentioned above. I had been told before I moved to Xiamen that the masters courses at Xiamen University lasted 3 years, so I prepared the TQC courses to be spread over 3 years, as shown in the above section. When the time came to actually start teaching, the person in charge of organizing the teaching roster for the school explained to me that in fact there was only half that time available. I was then forced to compress the set of TQC masters courses to last only 3 semesters. So the new plan that was concocted is shown below.

Masters Level TQC Courses

Year 1

1st Semester

Math (Mm1): (an accelerated prerequisite course of undergrad level mathematics topics) - Finite Group Theory, Complex Analysis, Fourier Analysis, Differential Geometry.

Physics (Mp1): (an accelerated prerequisite course of undergrad level physics topics) Special Relativity, Electromagnetic Theory, Statistical Mechanics, Analytical Mechanics, Quantum Mechanics

2nd Semester

Math (Mm2): Manifold Theory, Algebraic Topology

Physics (Mp2): Quantum Computing, General Relativity

Year 2

3rd Semester

Math (Mm3): Lie groups/algebras, representations, braid groups, knot theory

Physics (Mp3): Quantum Field Theory (QFT), Topological Quantum Computing (TQC)

PhD Level Courses

Those students wanting to do a PhD in TQC can attend seminars in later years in :-

PhDm1 (Conformal Field Theory (CFT), Kac-Moody algebras, etc);

PhDp1 (Topological Quantum Field Theory (TQFT), advanced Topological Quantum Computing (TQC));

PhDm2 (operator algebras, quantum groups, etc);

PhDp2 (gauge theory, string theory, etc).

What Actually Happened

From the courses mentioned in the above list, one sees that the first two courses, taught in the first semester, were effectively an accelerated introduction to essential topics in undergraduate math (finite groups, complex variables, fourier analysis, differential geometry), and to undergraduate physics (special relativity, electromagnetism, statistical mechanics, analytic mechanics, quantum mechanics).

The following semester I needed to devote more time to my primary research activity, i.e. artificial brains, so I only taught one course. It was the physics course, which crammed both quantum computing and general relativity into one semester, i.e. double the usual rate. Not surprisingly, I suppose, the only people in the class (only a handful) were from the physics department.

The computer science students who had been in the previous semester's classes, felt that such obvious (and difficult) physics subjects were not particularly relevant to

their (near) future computer science careers. Mostly they thought that the master physics courses (especially general relativity) were too difficult for computer scientists.

At the time of writing this section (Oct 2009) I am currently teaching an Artificial Brains course to masters students, something that I need to teach once a year. Hence in practice my TQC teaching has been reduced to a half the rate at which I had originally planned (i.e. only one course instead of four per year, but taught at twice the speed).

TQC Grad Students Will Need a Minimum IQ of 150

It is generally thought amongst mathematical physics researchers and professors who specialize in TQC that a minimum IQ of about 150 [150IQ] is needed to be able to fully master the material in TQC (e.g. particularly difficult topics such as conformal field theory, quantum groups, advanced algebraic topology, topological quantum field theory, etc). An IQ of 150 is roughly that of university professors in the sciences. (In the US, the average IQ of theoretical physics professors is 170, i.e. 4.7 standard deviations above the mean).

It is these high IQ levels required for TQC mastery that is the source of the “*TQC Shock Wave*” mentioned in the title of this article. This greater intelligence level that is required is also the reason why the general status level of computer science will go up significantly in future years.

The best masters students in theoretical physics and pure mathematics at top universities in China such as Beijing University or Tsinghua University would have those ability levels, whereas the average masters student in most of today's computer science departments around the world will not have such levels of intelligence, therefore, speaking bluntly, most of today's computer science masters students are simply *not bright enough* to study TQC (hence the "*shock wave*", as computer science deans and department heads come to terms with this new requirement).

We will probably have to wait until TQC has become a reality (i.e. that large-N quantum computers have been built), and for ministers of education and technology around the world to start putting real pressure on the best universities to teach TQC. Only then will pressure be placed on the best students to move into computer science (instead of theoretical physics and pure mathematics, as is largely the case today).

As a result of that pressure, computer science departments will see their general prestige level rise, for the simple reason that the topics they teach (that they have to teach, under severe pressure from government ministries) are a lot more intellectually demanding than they were before the TQC revolution. Computer science students will be smarter and so will their professors. Computer science will become as prestigious as the traditionally brightest specialties, i.e. theoretical physics and pure mathematics, and for good reason, and that is that computer science will

have become largely a branch of pure mathematics and theoretical physics.

Despite all the above considerations, I continue to teach these TQC courses but at a slower rate, arguing to myself (and to my students) that when TQC *does* come of age, my university will be able to *boast* to the world that it was the first university on the planet to teach a comprehensive set of TQC courses, and can be proud of that fact. Right now, I claim that although the *students* will not learn much TQC in the limited time they have, *I* will. I'm learning the topics in math, physics, and computing (MPC), that are needed to teach graduate level TQC courses. When TQC finally does come of age, I will be ready, and can then push my university for a faster teaching rate, and to invest in a greater commitment to TQC teaching in general.

But before that happens, we will probably have to wait a few years for the condensed matter physicists to discover the appropriate anyon with the requisite computational properties and then to use it in a scaled up (large-N) quantum computer. Then all hell will break loose.

(Actually, a very recent experimental physics paper (January 2009), dealing with the detection of non Abelian anyons, claimed that "we may see the first topological quantum bit within a year." Perhaps the rise of TQC will be sooner than we think.)

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Popular

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(More) Technical

The *best source* of research papers on TQC can be obtained using the following steps.

- a) Go to the website <http://xxx.arxiv.org>
- b) Click the Search button.
- c) In the search window entitled “Experimental full text search” type in (with quotation marks) “topological quantum computation (or computers, or computing)” in the left hand “Search for :” window.

d) In the right hand button, after the “in”, select “Everything”.

e) You should get over 400 hits.

[Bonesteel et al 2005] “Braid Topologies for Quantum Computation”, [N. E. Bonesteel](#), [Layla Hormozi](#), [Georgios Zikos](#), [Steven H. Simon](#), *Phys. Rev. Lett.* 95, 140503 (2005), <http://arXiv:quant-ph/0505065>

[das Sarma et al 2007] “Non-Abelian Anyons and Topological Quantum Computation”, Sankar Das Sarma, Michael Freedman, Chetan Nayak, Steven H. Simon, Ady Stern, http://www.arxiv.org/PS_cache/arxiv/pdf/0707/0707.1889v1.pdf (This paper is one of the best in the TQC literature for an overview of the whole field - math, physics, computing.)

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(This very difficult paper by Fields Medal winner, Michael Friedman, provides the mathematical proof that TQC is doable.)

[Jacak et al 2003] “[Quantum Hall Systems: Braid Groups, Composite Fermions, and Fractional Charge](#)” (*The International Series of Monographs on Physics, 119*) by Lucjan Jacak, Piotr Sitko, Konrad Wieczorek, and Arkadiusz Wojs, 2003.

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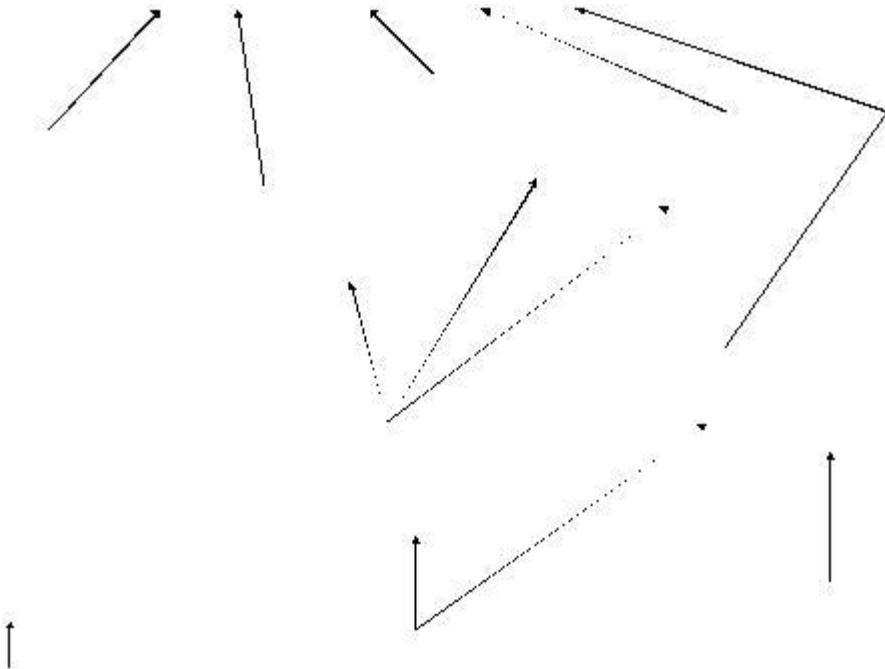
(This famous paper initiated the whole field of TQC. It invented the concept. Kitaev is the “father of TQC”)

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[Shor 1995] “Scheme for Reducing Decoherence in Quantum Computer Memory”, D. Shor, *PHYSICAL REVIEW*. A. 1995 Oct; 52(4): R2493-R2496., http://www.theory.caltech.edu/people/preskill/ph229/shor_error.ps

[van Degrift et al 1992] “The Integral and Fractional Quantum Hall Effects”, [C. T. Van Degrift](#), [Steven M. Girvin](#), [M. E. Cage](#) (Eds), *American Association of Physics Teachers* (January 1992).

[150IQ] A reviewer of this article queried this IQ value, and asked for justification. The average computer science PhD student has an IQ of about 130, i.e. in the 98th percentile of the general population. The average theoretical physics or pure mathematics PhD student is smarter at about 140. The *best* of these theoretical physics or pure mathematics PhD students, capable of absorbing readily the severe abstractions of topics such as quantum



group theory, conformal field theory, Chern-Simons theory, topological quantum field theory, etc, that are needed to understand the principles of TQC would need to have an IQ above 150. The average university professor in the sciences has an IQ of about 150. The average theoretical physics professor in the US has an IQ of 170 (i.e. 4.7 standard deviations above the mean). The statement that “TQC researchers will need to have an IQ above 150” is widely

held amongst TQC researchers, because TQC is considered by these people to be intellectually tougher and more demanding than the usual theoretical physics or pure mathematics topics taught in PhD courses in these fields.

Topological Quantum Computing (PhD)

	Topological Quantum	
MATH		Conformal
	Field Theory (PhD)	Field
Quantum Groups (PhD)		Theory (PhD)
	Condensed Matter	
Knot Theory (M2)		
	Field Theory (M2)	
Differential Topology (M2) Manifold Theory (M2)		
	Quantum Computing (M1)	
Lie Groups, Algebras (M1,2)		
	Quantum Field	
Representation Theory (M1,2) (M1,2)	Theory	
		COMPUTING
Braid Group (M1) Algebraic Topology (M1,2)	PHYSICS	
		Theory of Computation
	Quantum Mechanics (U4) (U4)	

General Topology (U4)

Topological Quantum Computing TOPICS

Appendix : A Sample TQC Course Syllabus

This appendix shows a sample *syllabus* of one of the TQC courses (of a set of such courses) offered to Xiamen masters level students in the math, physics and computer science departments. It explains briefly the importance of TQC and why it needs to be taught. Readers of this article who are thinking of teaching TQC at their universities may find it helpful.

Interdisciplinary “MPC” (Math Physics Computing) Lecture Course Series in “Topological Quantum Computing” (TQC)

Course Title : “Manifolds and Algebraic Topology”

Professor : Prof. Dr. Hugo de Garis
profhugodegaris@yahoo.com

Course Level : 1st year *Masters* students in Computer Science, Physics, Mathematics.

Background to TQC : Topological Quantum Computing (TQC) is a field that is currently revolutionizing computer science, by promising to make *quantum computers* robust and buildable by storing quantum bits (qubits) in topologically invariant properties of topological quantum

fields that are robust to local disturbances. Quantum computers are exponentially (2^N) times more powerful than classical computers, so will revolutionize physics, chemistry and biology, and hence national economies. Experimental physicists have recently discovered (2005) phenomena in the Fractional Quantum Hall Effect (FQHE) that promise to make TQC (and hence QC) practical in the next few years.

“MPC/TQC Series of Courses” Description: TQC is so important that MPC/TQC type courses will need to be taught in thousands of universities all over the planet. This Xiamen University (XiaDa) series of MPC/TQC courses is the first of its kind in the world. In a few years, XiaDa will be able to boast that the “Xiamen Model” (of MPC/TQC teaching) started at XiaDa. Computer science students need to know enough graduate level math and physics to be able to understand the principles of TQC, so this series of courses aims to turn computer scientists into (TQC understanding) “mathematical physicists”. Masters students in Mathematics and Physics may also be interested in learning about TQC principles and wish to attend these MPC/TQC courses (and get credit for them).

Course Description: This is a proper first year masters mathematics course in manifolds (i.e. effectively, “surfaces” in N-dimensional space) and algebraic topology. Anyone wishing to become an expert (and get a teaching job) in topological quantum computing (TQC), needs to know a lot of topology, hence the need for this course.

(Modern mathematical physicists for example, need to know a lot of topology and Lie groups/algebras.) It will cover topics such as

- a) topological spaces
- b) connectedness and compactness
- c) simplicial complexes
- d) homotopy
- e) the fundamental group
- f) the fundamental group of circles and spheres
- g) the Seifert-van Kampen theorem
- h) covering spaces
- i) classification of coverings
- j) homology
- k) cohomology

Text Book : The text book to be used for this course, will probably be “Introduction to Topological Manifolds” , by J. M. Lee, which is volume 202 in the Springer series of “Graduate Texts in Mathematics (GTM)”.

Exam and Homeworks : There will be a final exam, and regular homeworks. The exam will count for 60% of your final grade, HWs for 30%, and attendance at lectures for 10%.

Time and Place : This course will commence in February 2009 on the “Haiyun” Campus (Computer Science and Math Campus), in Research Building no.1, in room 509 (air conditioned), probably Wednesday or Friday afternoons at 2:30pm to 5pm. Lectures will be in English.

Other MPC/TQC Courses in this Series : Other MPC/TQC courses in this or future semesters are (where e.g. *Mm2* means a *Master's math* course, semester 2, *Mp3* means a *Master's physics* course, semester 3) :- *Mm1* (finite group theory, complex analysis, fourier analysis, differential geometry); *Mp1* (special relativity, electromagnetic theory, statistical mechanics, analytical mechanics, quantum mechanics); *Mm2* (algebraic topology, manifold theory); *Mp2* (quantum computing, general relativity); *Mm3* (Lie groups/algebras, representations, braid groups, knot theory); *Mp3* (quantum field theory (QFT), topological quantum computing (TQC)); *Mp4* (Basic string theory).

Those students wanting to do a PhD in TQC can attend seminars in later years in :- *PhDm1* (conformal field theory (CFT), Kac-Moody algebras, etc); *PhDp1* (topological quantum field theory (TQFT), advanced topological quantum computing (TQC)); *PhDm2* (operator algebras, quantum groups, etc); *PhDp2* (gauge theory, advanced string theory, etc).

Further details : For further details, on this course and all future MPC/TQC courses, email Prof. Dr. Hugo de Garis (profhugodegaris@yahoo.com). Later, an MPC/TQC website will be constructed.

Bio :

Prof. Dr. Hugo de Garis is a full professor of Computer Science in the Cognitive Science Department, School of Information Science & Technology, Xiamen University,

Xiamen, Fujian Province, China, where he is director of the “China-Brain Project” which aims to build China’s first artificial brain before 2012. He teaches the planet’s first (4 year pipelined) comprehensive set of courses on Topological Quantum Computing (TQC). His research interests include Artificial Brains, Evolvable Hardware, and Topological Quantum Computing. He is the author of several books, and is contracted by World Scientific (Singapore) to write two text books entitled “Artificial Brains : An Evolved Neural Net Approach” (to appear 2010) and “Topological Quantum Computing : Making Quantum Computers Robust by Manipulating Quantum Bits in Topological Quantum Fields” (to appear 2011).

D3) FEMTOTECH: COMPUTING AT THE FEMTOMETER SCALE USING QUARKS AND GLUONS

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Abstract

How the properties of quarks and gluons can be used (in principle) to perform computation at the femtometer (10^{-15} meter) scale.

I've been thinking on and off for two decades about the possibility of a femtotech. Now that nanotech is well established, and well funded, I feel that the time is right to start thinking about the possibility of a femtotech.

You may ask, "What about picotech?" — technology at the picometer (10^{-12} m) scale. The simple answer to this question is that nature provides nothing at the picometer scale. An atom is about 10^{-10} m in size.

The next smallest thing in nature is the nucleus, which is about 100,000 times smaller, i.e., 10^{-15} m in size — a femtometer, or "fermi." A nucleus is composed of protons and neutrons (i.e., "nucleons"), which we now know are composed of 3 quarks, which are bound ("glued") together by massless (photon-like) particles called "gluons."

Hence if one wanted to start thinking about a possible femtotech, one would probably need to start looking at how quarks and gluons behave, and see if these behaviors might be manipulated in such a way as to create a technology, i.e., computation and engineering (building stuff).

In this essay, I concentrate on the computation side, since my background is in computer science. Before I started ARCing (After Retirement Careering), I was a computer science professor who gave himself zero chance of getting a grant from conservative NSF or military funders in the U.S. to speculate on the possibilities of a femtotech. But now that I'm no longer a "wager," I'm free to do what I like, and can join the billion strong "army" of ARCers, to pursue my own passions.

So I started studying QCD (quantum chromodynamics), the mathematical physics theory of the strong force, or as it is known in more modern terms, the "color force."

Since I have a computer science background, I knew what to look for when sniffing through QCD text books, to be able to map computer science concepts to QCD phenomena.

Bits and logic gates : the heart of computation

If you want to compute at the femto level, how do you do that? What would you need? To me, the essential ingredients of (digital) computing are bits and logic gates.

A bit is a two-state system (e.g., voltage or no voltage, a closed or open switch, etc.) that can be switched from one state to another. It is usual to represent one of these states

as “1” and the other as “0,” i.e., as *binary digits*. A logic gate is a device that can take bits as input and use their states (their 0 or 1 values) to calculate its output.

The three most famous gates, are the NOT gate, the OR gate, and the AND gate. The NOT gate switches a 1 to a 0, and a 0 to a 1. An OR gate outputs a 1 if one or more of its two inputs is a 1, else outputs a 0. An AND gate outputs a 1 only if the first AND second inputs are both 1, else outputs a 0.

There is a famous theorem in theoretical computer science, that says that the set of 3 logic gates {NOT, OR, AND} are “computationally universal,” i.e., using them, you can build any Boolean logic gate to detect any Boolean expression (e.g. $(\sim X \& Y) \text{ OR } (W \& Z)$).

So if I can find a one to one mapping between these 3 logic gates and phenomena in QCD, I can compute anything in QCD. I would have femtometer-scale computation. That was the big prize I was after.

So, I set out to find phenomena in QCD that I could map bits and logic gates to. I was quickly rewarded. It was a case of “low hanging fruit.” I just happened to be the first person (as far as I know) wandering around the QCD orchard with a very specific type of cherry picking in mind.

The color charge on the quarks and the gluons

There are 4 types of force in the physical world, from weakest to strongest: the gravitational force, the weak nuclear force, the electromagnetic force, and the strong

nuclear force. (Actually, their relative strengths depend on the temperature at which these forces act. At the extreme temperatures (energies) that occurred just after the big bang and now at the LHC (Large Hadron Collider) in Geneva, their strengths converge to the same value, a phenomenon called “grand unification.”

In the 60s and 70s physicists became aware that the nucleons (the protons and the neutrons) consisted of 3 quarks, which have fractional electric charges (e.g., +/- 1/3 or 2/3 of the charge of an electron), and a new type of charge, called “color.” The electronic charge came in two types (positive and negative), which is something science has known about for several centuries. The color charge however comes in 3 types, “red” “blue” and “green.”

The electromagnetic force is “mediated” (conveyed) between two electrical charges via the photon (the particle of light). A photon is emitted by one of the charges and is absorbed by the other. This interaction creates the attractive or repulsive force between the electrical charges.

Something similar happens between quarks. The equivalent of the photon is called a gluon. A quark emits a gluon, which is then absorbed by another quark, and this creates the interaction between the two quarks.

There is an essential difference between a photon and a gluon. The photon has no charge of its own, whereas a gluon does have a color charge, in fact, each gluon has 2 such charges. It is bi-charged, or bi-colored. This means that gluons can interact with other gluons, forming complex

“glueballs.” I will not be using glueballs in this essay, but they might play an important role in femtotech in the future?!

Strictly speaking, there are more than 3 color charges. In fact there are 6, namely red, blue, green, anti-red, anti-blue, and anti-green. A gluon (at least the type of gluon that I will use in this essay) has one of the first three, and one of the second three. So there are 6 such bi-colored gluons, a red, anti-blue; a red, anti-green; a blue, anti-red; a blue, anti-green; a green, anti-red; a green, anti-blue. In this essay I will use only the red, anti-blue and the blue, anti-red gluons, because (using Occam’s razor), they are all that I need.

Colors are conserved in quark-gluon reactions

How does a gluon interact with a quark? What happens? Remarkably, when a gluon and a quark interact, the gluon may change the quark’s color, and in such a way that the colors are conserved. For example, imagine a red, anti-blue gluon (which from now on will be abbreviated to Gr,~b) interacts with a blue-colored quark (abbreviated from now on to Qb). The gluon will cause the quark to change its color from blue to red, i.e., in symbolic terms:

Gr,~b : Qb -> Qr

In other words, the red, anti-blue gluon acts on the blue (color charged) quark, and converts it into a red (color charged) quark.

Note that before the interaction, there were 3 charges: a red, an anti-blue (both on the gluon), and a blue (on the quark). During the interaction, the anti-blue of the gluon and the blue of the quark cancel, leaving only a red, which is now the color (charge) of the outgoing quark. The colors are conserved.

What would happen if a red, anti-blue gluon ($G_{r,\bar{b}}$) interacted with a red quark Q_r ? Nothing. Such an interaction is forbidden in nature, because the color charges in this case are not conserved. Before the interaction, we have a red and an anti-blue charge on the gluon, and a red on the quark. If the quark absorbed the gluon and changed its color from red to blue, then the final charge would be just blue. But that doesn't match the "2 reds and 1 anti-blue charges" before the interaction. The colors are not conserved, so this interaction is QCD forbidden.

This color conservation operates with the emission of a gluon as well. For example, a red quark Q_r could emit a red, anti-blue gluon ($G_{r,\bar{b}}$) and become a blue quark (Q_b). This emission can be represented as

$$Q_r \rightarrow Q_b + G_{r,\bar{b}}$$

Note that the colors are conserved. The blue and anti-blue cancel each other, leaving a red on both sides. Color conservation is one of the basic natural laws of QCD.

Now, a gluon that is emitted by one quark can be absorbed by another quark, rather like the way a photon can be emitted and absorbed by two electrically charged particles

(which is the basis of the study of quantum electrodynamics, QED). By emitting and absorbing gluons, two quarks can interact with each other and influence each other. I will make heavy use of this phenomenon, as will soon become clear.

The “aha moment”

Probably some of you have already had an “aha moment” on how you might implement femtotech-based computing, based only on what I have said above.

Once I had read about the color charges and gluon emission and absorption, I had my “aha moment.” I felt I had found a way to compute at the femtometer scale, using quarks and gluons, at least in principle. For difficulties facing the practical engineering of these ideas, see towards the end of this essay.

The aha moment gave me the following basic ideas.

- a) Represent a bit by the color of a quark. A red for 1, and a blue for 0. (I didn't need to use green.)
- b) To change the state (1 to 0, or 0 to 1), change the color of the quark from red to blue, or vice versa.
- c) To change the color of a quark, use an appropriately emitted gluon, i.e., one possessing the appropriate bi-coloring.
- d) To implement logic gates (and this was the creative challenging part), use a sequence of gluon emission and absorption (of the same gluon).

Mapping the gates to quark-gluon interactions

Before I get into the specifics of the mappings, I need to introduce a fictional didactic device that I call a “quark chamber,” i.e., a region of space (perhaps as small as a nucleon), such as a sphere, in which a quark enters at one end, interacts (or fails to interact), and exits at the other end. Also entering or exiting the quark chamber is a gluon. In the case of gluon emission, the gluon exits the quark chamber. In the case of gluon absorption, the gluon enters the quark chamber and is absorbed within it.

NOT Gate

Fill the quark chamber with two gluons: a $G_{r,\sim b}$ and a $G_{b,\sim r}$. If a red quark Q_r enters the quark chamber, it will not interact with the $G_{r,\sim b}$ gluon, but will be converted to a blue quark by absorption of a $G_{b,\sim r}$ gluon, and will exit the quark chamber as a blue quark, according to the interaction

$$G_{b,\sim r} : Q_r \rightarrow Q_b$$

An ipso facto interaction will occur for a blue quark entering the quark chamber, according to the interaction

$$G_{r,\sim b} : Q_b \rightarrow Q_r$$

We thus have a NOT gate. A red quark is converted to a blue quark (1 to 0), and a blue quark is converted to a red quark (0 to 1). This is the definition of a NOT gate.

OR Gate

To implement an OR gate is a bit more complicated. We need 2 quark chambers, A, B. Chamber A is a gluon

generating chamber. If a red quark enters chamber A, a red, anti-blue gluon $G_{r,\sim b}$ emission is caused in the chamber and the gluon then exits. (The resulting blue quark is ignored.)

If a blue quark enters chamber A, nothing happens. No gluon exits the chamber.

We now have 4 cases to consider:

a) red(1), red(2): (a red quark(1) enters chamber A, and a second red quark(2) enters chamber B). The red quark $Q_r(1)$ entering chamber A generates a $G_{r,\sim b}$ gluon that enters chamber B. This gluon has no effect on the red $Q_r(2)$ entering chamber B at the same time. The red $Q_r(2)$ then passes out of chamber B unaffected. In other words, the output quark from chamber B is red. Hence if the inputs are red(1) and red(2) the output quark is red.

b) red(1), blue(2): The red quark $Q_r(1)$ entering chamber A generates a $G_{r,\sim b}$ gluon that enters chamber B. The blue quark $Q_b(2)$ that enters chamber B is converted to a red quark $Q_r(2)$ that then exits chamber B. In other words, the output quark from chamber B is red. Hence if the inputs are red(1) and blue(2) the output quark is red.

c) blue(1), red(2): The blue quark $Q_b(1)$ entering chamber A generates NO gluon, so no gluon enters chamber B. The red quark $Q_r(2)$ that enters chamber B then exits unchanged. In other words, the output quark from chamber B is red. Hence if the inputs are blue(1) and red(2) the output quark is red.

d) blue(1), blue(2): The blue quark $Q_b(1)$ entering chamber A generates NO gluon, so no gluon enters chamber B. The blue quark $Q_b(2)$ that enters chamber B then exits chamber B unchanged. In other words, the output quark from chamber B is blue. Hence if the inputs are blue(1) and blue(2) the output quark is blue.

Thus the specifications of an OR gate are satisfied.

AND Gate

The AND gate is a bit more complicated still. It contains 3 chambers, A, B, C. Chambers A and B both output a red quark if the input is a red quark, and a blue, anti-red gluon $G_{b,\sim r}$ if the input is a blue quark. This time, instead of dealing with single events, think in terms of a stream of input and output quarks. Chamber C has as input, the outputs of chambers A and B, as well as a fixed red quark $Q_r(3)$ input, for reasons that will soon become clear.

We again have 4 cases to consider:

a) red(1), red(2): (red quarks(1) enter chamber A, and red quarks(2) enter chamber B). The red quarks $Q_r(1)$ and $Q_r(2)$ pass unchanged into chamber C, along with the fixed red quarks $Q_r(3)$. There are only red quarks in chamber C, so only red quarks can exit chamber C. In other words, the output quarks from chamber C are red. Hence if the inputs are red(1) and red(2) the output quarks are red (now thinking in terms of streams of quarks).

b) red(1), blue(2): (red quarks(1) enter chamber A, and blue quarks(2) enter chamber B). The red quarks $Q_r(1)$ pass

unchanged into chamber C, along with the fixed red quarks $Q_r(3)$. The blue quarks $Q_b(2)$ that enter chamber B generate blue, anti-red gluons $G_{b,\sim r}$ which pass into chamber C. These gluons convert all the red quarks in chamber C to blue **quarks**, so that only blue quarks exit from chamber C. Hence if the inputs are red(1) and blue(2) the output quarks are blue.

c) blue(1), red(2): (blue quarks(1) enter chamber A, and red quarks(2) enter chamber B). The blue quarks $Q_b(1)$ that enter chamber A generate blue, anti-red gluons $G_{b,\sim r}$ which pass into chamber C. The red quarks $Q_r(2)$ that enter chamber B pass unchanged into chamber C, along with the fixed red quarks $Q_r(3)$. These gluons convert all the red quarks in chamber C to blue **quarks**, so that only blue quarks exit from chamber C. Hence if the inputs are blue(1) and red(2) the output quarks are blue.

d) blue(1), blue(2): (blue quarks(1) enter chamber A, and blue quarks(2) enter chamber B). The blue quarks $Q_b(1)$ and $Q_b(2)$ both generate blue, anti-red gluons $G_{b,\sim r}$ which pass into chamber C. These gluons convert the fixed red quarks entering chamber C to blue **quarks**, so that only blue quarks exit from chamber C. Hence if the inputs are blue(1) and blue(2) the output quarks are blue.

Thus the specifications of an AND gate are satisfied.

Engineering Challenges

Now that all 3 gates have been mapped to quark-gluon interactions in QCD, one has an “in principle” recipe for femtometer scale computation.

However the practical engineering problems remain, especially when considering something called “asymptotic freedom,” which says that quarks interact weakly when close together, but immensely strongly as they separate, rather like a tough rubber band being stretched. The more it is stretched, the greater the potential energy it has. Similarly with the 3 quarks inside a nucleon.

A nucleon is stable (in the nucleus) because it has 3 quarks, one is red, another blue, and the third green. These 3 colors “sum” to “white” (rather like a spinning color wheel of equally sized red, blue and green sectors), which is analogous to the way an atom, with its positively charged nucleus and its negatively charged electrons, sums to neutrality.

However, if one attempts to extract a quark from the nucleon, the gluons between the extracting quark and the other two quarks, behave in complex nonlinear ways, interacting with other gluons, to form a hugely powerful resistance, until the potential energy is so great that a quark, anti-quark pair can be formed, which combine to form a pion (pi meson). (Mesons consist of 2 quarks: a quark and its anti-quark.) Hence it seems impossible to isolate a quark (or a gluon). Experimentally, no quark or gluon has ever been isolated. Experimentalists have virtually given up trying.

Hence the implicit assumption in the above models, namely that isolated quarks and gluons are used, seems unphysical and unrealistic.

But, if the gluons and quarks are close together, the “stretching rubber band” phenomenon does not occur. There may be particles that contain more than 3 quarks, the so called “exotics,” which may have $3N$ quarks (a multiple of 3 to maintain color neutrality (“whiteness”) by summing an equal number of red, blue, and green color charges).

There may also be “glueballs” that consist only of gluons that interact in highly non linear and hence complex ways.

Another possibility is to heat up the quark/gluon complex so much that one obtains a quark-gluon “plasma.” At a critical temperature, after cooling the plasma, quark-gluon “chains” may start forming, that may interact in ways similar to the way molecules interact within the cell, i.e., by complementary “lock and key” touching.

Conclusions

The above femtometer scale computation models are “in principle” only. To make them practical will probably require new thinking, to ensure that they are compatible with the severe constraints imposed by the principles of QCD, e.g., quark confinement and asymptotic freedom.

Hopefully, this essay will stimulate other researchers to enter this new research field of femtotech. Perhaps the “other side” of technology (the “building stuff” side, in

contrast with the computational side) can be implemented with glueballs as well, or with quark/gluon “condensates.”

One thing is clear. If humanity does not make any progress along the lines of femtotech, sooner or later, human beings (or our artificially intelligent successors) will be scratching at the “nanotech walls” that confine us.

One final comment I’m thinking of trying to create an “attotech” (i.e., on the scale of 10^{-18} meters) by using the weak-force particles (W and Z particles) that interact not only with quarks, but with the much lighter leptons (e.g., electrons, etc) as well.

Human technology has progressed from millitech, to microtech, to (recently) nanotech, and this essay attempts to start the thinking on femtotech (and attotech).

This downscaling trend provides a potential answer to the famous “Fermi paradox” (if intelligent life is so commonplace in the universe, “where are they?”). If intelligent creatures or machines can continue to “scale down” in their technologies, the answer to Fermi’s question would become “They are all around us, whole civilizations living inside elementary particles, too small for us to detect.”

D4) SIPI

SEARCH FOR INFRA PARTICLE INTELLIGENCE

Changing the “Search for Non Human Intelligence” Paradigm from Outer Space to Inner Space

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Abstract

This essay is a tight sequel to the author’s previous essay “FEMTOTECH : Computing at the Femtometer Scale Using Quarks and Gluons” It applies the same kind of ideas to the attometer (10^{-18} meter) scale using the weak force particles W^+ and W^- to create an ATTOTECH. The hypothesized $SU(5)$ force particles of the grand unified theory, X and Y , are 1000s of times heavier than the W particles, and hence operate at the zeptometer scale (10^{-21} meter) allowing a potential ZEPTOTECH. One can generalize from all these “techs” to create the specifications for an “X-TECH”. The major point of this essay however, is to claim that looking extra terrestrially for signals from hyper advanced civilizations far older than we are, may be misguided. Perhaps we should be looking inside “elementary” particles because creatures

constructed at these tiny scales would operate hugely faster, at far greater densities, and with vastly superior performance levels. We may need a paradigm shift away from outer space to inner space, from SETI to SIPI.

1. Introduction

In my essay, “FEMTOTECH : Computing at the Femtometer Scale Using Quarks and Gluons” I found (in principle) ways to use the properties of quarks and gluons to compute at the Femtometer scale. The basic ideas were to store a bit using the color charge on a quark, e.g. the red color charge for a 1, and the blue color charge for a 0. Gluons, having two colors each, e.g. a red, anti-blue, or a blue, anti-red could be used to change the color charge of a quark, i.e. it could flip the bit from a red to a blue (i.e. from a 1 to a 0) and vice versa. By sequencing the emission and absorption of appropriate color changing gluons, I was able to map the three basic logic gates of classical computing (NOT, OR, AND) into corresponding QCD (quantum chromo dynamics) phenomena (i.e. the appropriate behaviors of quarks and gluons.)

I then wondered if I could do much the same at the next size scale down, i.e. at the attometer (10^{-18} meter) using the weak force particles W, and Z. As usual I went hunting through my particle physics texts and found a way to do this too (in principle). Here is how it might be done.

2. W^+ and W^- Weak Force Particles and Interactions

The force particles of the weak nuclear force (W^+ , W^- and Z^0) have very limited range, typically of the attometer scale (10^{-18} m) and they have mass, in fact they are considerably heavier than the proton, i.e. about 2 orders of magnitude heavier. I concentrate on the W particles, since I won't be using the Z particle which is uncharged. The W particles come in two forms. One is positively charged (" W^+ ") (i.e. it has one unit of positive electronic charge) and the other is negatively charged (" W^- ") (i.e. it has one unit of negative electronic charge.)

These weak interaction particles differ from their massless cousins, the photon, and the gluons, that mediate the electromagnetic and the color (strong nuclear) forces respectively. The gluons only interact with particles that have the color charge (red, blue or green), but take no part in the weak interactions. The gluons thus have no effect on the "leptons", i.e. the *light* particles (such as the electron, the neutrino, and their cousins) but react only with "hadrons" i.e. *heavy* particles (such as the "baryons" (protons and neutrons, etc, that are constructed from 3 quarks), and the "mesons" (pions, etc) that are constructed from a quark and its antiquark.))

The weak interaction particles however are more universal. They can interact with BOTH hadrons and leptons. So from a future technologist's point of view, there may be more scope for a technology based on the weak force particles than on the color force particles, because the former offer

more “scope.” However, there is a considerable downside with the weak interaction particles, and that is their interaction speed, as we will see later in this essay.

The weak particles have another feature that the gluons do not have, and that is they can change the “flavor” of a quark, whereas a gluon cant. (The “flavor” of a quark, is its “type” i.e. one of the following set of 6 {up, down, strange, charm, top, bottom}) A gluon can only change the color charge of a quark, not its flavor.

For example, a W^+ particle can interact with a “down” flavored quark (which has $-1/3$ of the charge of an electron) and convert it into an “up” flavored quark (which has $+ 2/3$ of the charge of an electron). This reaction (actually an absorption of a W^+) can be represented as follows.



i.e. the W^+ acts on the down quark to convert it to an up quark, or the down quark absorbs the W^+ and becomes an up quark. Call this process the “absorption” of the W^+

There is a corresponding “emission” process of the W^+ , which goes as follows. An up flavored quark collides with a hadron (which is ignored) and “splits” into a down flavored quark and a W^+ . This reaction can be represented as follows.



Note that in both the W^+ absorption and the W^+ emission processes, the total charges before and after the interactions are conserved. For example, in the W^+ emission process, the charge of the up quark equals the charges of the down quark and the W^+ (i.e. $+2/3 = -1/3 + 3/3$).

The above absorption and emission processes have corresponding equivalents for the W^- weak force particle. The absorption and emission processes can be represented by the following two equations.

$$W^- : Qu \Rightarrow Qd \quad \text{and} \quad Qd \Rightarrow Qu + W^-$$

We now have the necessary tools to create computation at the attometer scale, because we can emit a W^+ or a W^- at will, and use it so that it can be absorbed to change the flavor of a quark from up to down, or from down to up, i.e. we can change the bit on the quark. For more on this, see the next section.

3. Computing with Quark Flavors and the W s

At this point in this essay, if you have not already read my earlier essay “FEMTOTECH : Computing at the Femtometer Scale Using Quarks and Gluons” I strongly advise you to do so, otherwise this section will be rather incomprehensible.

Once you understand readily the basic principles of the computational model in the femtotech essay, it is rather

easy to create a close analogy between the quark color charges and color changing gluons on the one hand, and the quark flavors and the flavor changing Ws on the other.

You can take the implementation of the NOT, OR, AND gates in the femtotech essay and substitute the femtoscale set of {quark color charges, color changing gluons} for the attoscale set of {quark flavors and the flavor changing Ws}. The analysis is the same for both sets, except that the scale is about 3 orders of magnitude smaller, namely at the attometer scale. We are thus computing at the attometer scale, creating the beginnings of an “attotech.”

To make the above analogy more concrete, make the following substitutions. On the LHS of the following list, is a component of the femtotech story. On the RHS is a component of the corresponding attotech story. To understand how to implement the NOT, OR, AND gates of the attotech story, simply substitute the RHS components into the corresponding LHS components in the femtotech story.

A red color charged quark → An up quark

A blue color charged quark → A down quark

A red, anti-blue gluon → A W^+ weak force particle

A blue, anti-red gluon → A W^- weak force particle

4. Zeptotech?

I had to go to google to find out the name of the 10^{-21} m scale. It's a "zeptometer" and 10^{-24} m is called a "yoctometer." I can't say much about a possible "yoctotech" because very little is known about particle physics at such tiny scales. But there are theoretical models at the zeptometer level.

Once the electromagnetic and weak forces were unified into the "electroweak" force in the 1970s, particle theorists attempted to use group theory to create a "grand unified force" or "superforce" (i.e. an "electro-weak-color force") using the special unitary group SU(5). Out of this (only partially successful) work came the prediction of two superforce particles that would mediate all the interactions, except gravity. (Hopefully string theory will solve the open problem of unifying ALL the forces of nature.)

These two superforce particles are called the "X" and the "Y", and have masses about 3 orders of magnitude larger than the Ws and the Z. Hence the range they would operate under would be at the zeptometer scale. Since I don't know how they interact with quarks and leptons, there's not a lot more I can say about a possible zeptotech.

5. X-Tech

Having seen above how to implement computing at the femto and atto scales, one can't help but notice that there are commonalities between the two, allowing one to generalize the creation of future "X-techs" at ever smaller scales,

where “X” is any appropriate level label, e.g. nano, femto, atto, zepto, yocto, ... Plank(?).

To produce an X-tech, what do you need? Here is a short list. You need –

- a) *Stable entities (presumably particles) that have at least 2 quasi stable states* (that do not quickly decay or spontaneously change into some other state). For example, with femtotech, the red and blue color charges on the quarks (corresponding to the binary states “1” and “0”), or with attotech, the up and down flavors of the quarks.

- b) *At least two force particles that can be emitted and absorbed, to be used to change the states of the entities above.* For example, with femtotech, the red, anti-blue gluon (that changes a blue charged quark into a red charged quark), and the blue, anti-red gluon (that changes a red charged quark into a blue charged quark), and for attotech, the W^+ (that changes a down flavored quark into an up flavored quark) and the W^- (that changes an up flavored quark into a down flavored quark.)

Once you have such basic ingredients, it is fairly easy(?), at least in principle, to devise logic gates using them to compute any Boolean function. You have computation at the X-scale, and hence you have the beginnings of an X-tech.

6. Is Smaller Faster?

I used to be under the impression (and I still am to some extent) that as one scaled down, the greater would be the overall performance of a given level of technology. For example, a femtotech would outperform a nanotech by a factor of a trillion trillion, i.e. the density would be a million cubed times greater, and the signaling speed between the femto components would be a million times faster, because the components are a million times closer together, giving a total performance increase of a million to the fourth power = a trillion trillion times superior to nanotech. A femto machine could flip bits a trillion trillion times faster than a nano machine.

This huge superiority will put pressure on our future “artilects” (artificial intellects, massively intelligent machines) to “upgrade” (actually “downgrade”) themselves from “nanoelects” (i.e. artilects based on nanotech) to “femtolects” (i.e. artilects based on femtotech). Since they will be hugely smarter than we are, they will probably then continue down scaling, assuming that each scaling down resulted in vastly superior performance, but is that assumption valid?

Let’s do the numbers.

The femtotech story in the previous essay uses gluons to mediate the color force. Typically these color force

interactions occur in a time frame of 10^{-23} second, and at a range of about 10^{-15} m.

The attotech story in this essay uses the W weak force particles to mediate the weak force. Typically these weak force interactions occur in a time frame of 10^{-10} second, and at a range of about 10^{-18} m.

You may be shocked by the much slower speed of the weak interactions, i.e. about 10 trillion times slower, so how does that affect the total performance of attotech vs. femtotech?

Well, badly, actually! Of course, the density increase of atto relative to femto would be a billion times greater, i.e. a thousand cubed, but the much slower interaction speed more than overpowers the greater density impact. So, there may be 10^9 times more components per unit volume of attotech matter, but each interaction is 10^{-13} times slower, so the total performance increase is $10^9 * 10^{-13} = 10^{-4}$, i.e. ten thousand times inferior. So much for an attotech based on the weak force!

7. SETI vs. SIPI

Does the above analysis throw a monkey wrench into the works of the idea that the hyper intelligent creatures in the universe that are billions of years older than we are, are super tiny? Not necessarily. Of course, going from nano to femto is an obvious performance enhancer, because not only is the femto scale a million times smaller than the

nano scale, it uses the color force, one of the fastest phenomena that physics knows about (although big bang theory operates on a time scale of 10^{-44} second, the Plank time, so maybe there is scope for much faster processes? Further research needed here! Inflation, maybe?

Sticking with the color force – its essential ingredients, the quarks and the gluons, are essentially point like particles. They have no known internal structure, so are modeled essentially as points, so could scale down hugely.

The only reason the distance scale of 10^{-15} m is used for the color force, is because quarks are usually found bound together in 3s in baryons (like the proton or neutron) which have femtometer sizes. But if an X-tech could be used inside the volume of a baryon, i.e. inside a sphere of radius of about a femtometer (a.k.a. a “fermi”) then it might be possible to have many quarks and gluons operating in that space and at tiny tiny scales. Alternatively, one could use gluons alone, since they too are color charged and may interact with each other forming complex “glueballs” that function at color force speeds, i.e. 10^{-23} second.

It’s difficult to talk about such an X-tech because the basic physics of how lots of quarks and gluons (or glueballs) would interact in such tiny volumes (where presumably, the “quark confinement” (stretched rubber band) phenomenon would not be operating (see my earlier essay on this)) is poorly known.

Our artefacts may be such superb scientists, that they may be able to create such an X-tech, and hence give themselves the option of “down-grading” themselves to achieve vastly greater performance levels. Just how far down they could go is an interesting research question. One of my ambitions over the next couple of years, is to get so familiar with string theory (now that I’m ARCing (after retirement careering), doing what I like), that I dream of creating a “string-tech.”

Now to the punch line.

It should be clear from all this talk of femtotech, attotech, zeptotech, X-tech, etc that as one scales down, in general, performance levels increase dramatically. Hence one can readily speculate that any nano-based artefact, sooner or later, will not be able to compete with his femto-based cousins, and will probably downgrade itself as well. This logic applies all the way down (to Plank-tech?). Hence we come inevitably to the following dramatic conclusion.

The hyper intelligences that are billions of years older than we are in our universe (which is about 3 times older than our sun), have probably “downgraded” themselves to achieve hugely greater performance levels. Whole civilizations may be living inside volumes the size of nucleons or smaller.

When I first had this idea, about a decade ago, I chuckled, but now I take it very seriously, because there seems to be *so much logic behind it.*

What impact does such thinking have upon SETI (Search for Extra Terrestrial Intelligence)? Well, I think it makes SETI look rather *provincial*. I'm not suggesting that the SETI effort be canceled, but the above thinking does suggest that the intelligences "out there" i.e. extra terrestrials (ETs), who might be primitive enough to bother sending radio signals to beings like us, are NOT the most intelligent specimens in the universe. *The really smart ones I suggest are very very tiny.*

Therefore I recommend that humanity start thinking about ways to detect their presence. We need a SIPI, a Search for Infra Particle Intelligence. For example, why are the elementary particles such "carbon copies" of each other, for each particle type? Once one starts "seeing" intelligence in elementary particles, it changes the way one looks at them, and the way one interprets the laws of nature, and the interpretation of quantum mechanics, etc. It's a real paradigm shift away from looking for non human intelligence in *outer* space, to looking for it in *inner* space, i.e. SIPI.

E) ON RELIGION

E1) FROM COSMISM TO DEISM

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Abstract

This essay argues that the rise of artelects (artificial intellects, i.e. godlike massively intelligent machines, with intellectual capacities trillions of trillions of times above the human level) this century, makes the existence of a deity (i.e. a massively intelligent entity capable of creating a universe) seem much more plausible.

1. Introduction

There are now thousands of AI scientists around the world (concentrated largely in the English speaking countries) who feel that humanity will be able to build massively intelligent machines this century that will be hugely smarter than human beings. The author, for example, thinks that the issue of whether humanity should build these “artilects” (artificial intellects) will dominate our global politics this century and lead to a “gigadeath” war, killing billions of

people. These AI researchers know that 21st century technology will be capable of creating machines with a bit processing rate trillions of trillions of times above the estimated human brain equivalent bit processing rate, and that neuro-scientific knowledge is advancing at an exponential rate.

Let us assume, for the sake of argument that these artifacts are actually built this century, and then speculate on what such creatures might occupy themselves with. Of course, as humans, with our puny human brains, trying to imagine what an artifact would think about is like a mouse trying to imagine what humans think about, using its puny mouse brain. Nevertheless, we will speculate anyway, because some of these human level suggestions may turn out to be correct.

2. *Building Universes*

One suggestion that comes to (the human) mind, is that artifacts may be so smart and such superb scientists that they may be capable of conceiving and constructing whole universes. This idea seems plausible since Prof. Guth (of “inflation” fame), of MIT, as a human, has already conceived a mathematical model on how to create a baby universe. He has the conditions, the numbers, on how to do this. If humans, with our puny human brains are capable of conceiving the idea of building universes, then perhaps artifacts, with all their godlike capacities, could actually

construct them, according to their vastly superior ability to architect possible universes.

Consider also, that our universe is 13.7 billion years old, according to results from the WMAP satellite in 2003. Our 3rd generation star, the Sun, is only about 5 billion years old, so it is likely that there are a trillion trillion 2nd generation stars in our observable universe that are billions of years older, that have planets, on which intelligent life evolved and then moved on in an “artilectual transition” to become “artilect gods”. These artilects may then have designed their own universes.

The obvious question then arises, “Is it possible that our universe was designed by some artilect in some other universe?” This question raises some interesting metaphysical issues, that will be discussed later, but let us assume that the answer is yes, what then? This “creator artilect” would then satisfy the definition of a deity, i.e. a creator of our universe. Given that it is likely that humanity will be building artilects this century, science ought to be a lot more open to the idea of deism. The above argument makes it much more plausible.

3. *Theism vs Deism*

Let me state my views on theism vs deism, at this point. Deism, as just mentioned, is the belief that there is a “deity” i.e. a creator of the universe, a grand designer, a cosmic architect, that conceived and built our universe.

Theism is the belief in a deity that also cares about the welfare of individual humans. Deism I am open to, whereas I find theism ridiculous. The evidence against it is enormous. For example, last century, about 200-300 million people were killed for “political reasons”, e.g. wars, genocides, purges, ethnic cleansings etc. It was the bloodiest century in history. Presumably, millions of those killed were theists, believing that their “theity” would “look out” for their welfare. Well obviously that theity didn’t, because those millions of people were killed anyway.

If this theity was so concerned with human beings, why did our species come on the cosmic scene so late. Our universe has existed for the order of 10^{10} years. We humans have existed for about 10^5 years, i.e. only a thousandth of 1% of the age of the universe – “a mere afterthought of an afterthought”. Every primitive tribe has dreamt up its own gods and those gods have properties familiar to their human creators, e.g. New Guinea gods have lot of pigs, Chinese gods have slitty eyes, etc. Cultural anthropologists of religion have estimated that humanity has invented over 100,000 different gods over the planet and over the broad sweep of human history, most of which are no longer believed in. They have become “extinct religions.”

It is much more likely, in my view, that theisms are just examples of “wishful thinking” that people invent to give themselves emotional comfort in an emotionally cold, meaningless, indifferent universe that has evolved creatures like ourselves who are subject to disease, pain, cruelty, poverty and death.

The early gods were rather primitive in conception, because the small hunter gatherer groups who invented them did not contain a genius capable of high level abstract creative intellectual thought. Once agriculture and animal husbandry was discovered, large cities grew up that contained the occasional genius who dreamt up a more abstract concept of god, i.e. of a mono-theity far more powerful than the many individual gods of an earlier (pre agricultural) human era. The concoction of these monotheisms occurred several thousand years ago, long before the insights of modern science, and hence it is not surprising that their religious conceptions were based largely on (pre scientific) ignorance, e.g. notions such as life after death (the ultimate wishful thinking), souls, miracles, etc.

In northern Europe, theism has almost died out, and is heading that way too (but slowly) in the US - the slowness being due to historical colonial reasons. Let us assume for the sake of this essay, that theism dies out worldwide. Where does that leave deism?

4. *Plausibility Arguments for a Deity*

The above sections have argued that the rise of the artelect this century makes the idea of a deity, more plausible. However there are other arguments which can be used to support the idea that our universe is the product of a pre-existing deity. They are :- A) the “(strong) anthropic

principle”, and B) something I call (by analogy with the anthropic principle) the “mathematical principle”. I discuss these two principles in turn.

4.1 *The (Strong) Anthropic Principle (SAP)*

The SAP states that the values of the constants of the laws of physics are so fantastically, improbably finely tuned to allow the existence of matter and life, that it seems highly likely that these values were predesigned. It is now well known, that if one changes the values of some of these constants by even a tiny amount (for example, in some extreme cases, by one part in zillions), matter and life can no longer exist. How to account for this extraordinary state of affairs? One answer is to say that our universe is the product, the creation, of a preexisting deity, a hyper intelligence that conceived our universe’s laws of physics that are compatible with matter and life, and built our universe according to those laws. Another answer is to say that there are a zillion universes, each with a different set of physical laws, and we just happen to live in one that is compatible with life, because we are here to observe our universe (which is the statement of the weak form of the anthropic principle (WAP)). Other people, particularly many string theorists, claim that once enough is known in the future about the nature of M-theory, it will become clear that there is only one way a coherent universe (i.e. obeying all the many symmetries of M-theory) can be designed, and our universe is it. This leads in to the next principle.

4.2 *The “Mathematical Principle”*

The “mathematical principle” is what I call the idea that the universe appears to have been designed by a mathematician, i.e. that the universe obeys so many principles of modern mathematics. (Einstein, for example, was deeply mystified by the fact that the universe obeyed the general design principles he dreamt up to explain how gravity worked. He kept saying he wanted to know the (mathematical) thoughts of “der Alte” (the old one), the designer of our universe.) For example, why do the elementary particles have properties that allow them to be classified into families according to the mathematical representations of special unitary groups (e.g. $SU(3)$)? Why does Einstein’s general relativistic equation “drop out” of the superstring model as a mathematical deduction, with all the latter’s recent mathematical abstractions of such a high level that probably only one person in a thousand has the brain power to understand them, e.g. mathematical notions such as 11 space-time dimensions, super-symmetry, complex manifolds, super-conformal-fields, Calabi-Yau compactification, holomorphic curves, etc. The more humanity knows about how deeply mathematical the laws of physics are, the more plausible it seems that the designer of the universe used mathematical principles as a tool. This is the “deity as mathematician” argument (which interestingly seems to suggest that mathematics is more fundamental than even a deity - that even a deity is subject to mathematical constraints and logic?!)

5. *Deism and Science*

Richard Dawkins is not keen on the idea of a deity. He claims, I think correctly, that any deity capable of creating our universe, would need to be extremely complex, at least as complex as that of our universe. Where I disagree with him is his idea, that instead of postulating the existence of a deity, science should start with the premise that the universe exists with given properties, that science then attempts to discover and explain. For Dawkins, the idea of a deity is “outside science” and conceptually redundant. If a deity made the universe, who made the deity? One gets stuck in an infinite regress.

Personally, I think if science could come to the conclusion that there is/was a deity that created the universe, then that would be wonderful for science. It would open up a vast new arena for science to play in. Science could then start wondering about the properties of the deity, i.e. the hyper intelligence that designed the universe. The question of what designed the deity should not be a reason for dismissing our universe’s deity. We live in a universe that may have a “qualitative infinity” of levels, e.g. in the past century, humanity’s knowledge of the nature of matter has descended from molecules, to atoms, to nuclei, to nucleons, to quarks, to strings. Who knows how many more layers future humans may find. As each new layer is discovered, science reacts with elation, having opened up new vistas for exploration. A similar attitude ought to apply to the idea of a deity.

6. *Metaphysical Questions*

Traditionally, science has been rather hostile to the idea of theism. I share that hostility. I look on traditional religions as superstitions that are incompatible with modern scientific knowledge. But as the above sections make clear, I'm far more open to the idea of deism, i.e. the belief in a hyper intelligence that designed and created our universe.

I think that the rise of Cosmism, i.e. the ideology in favor of humanity building artifacts this century (despite the risk that advanced artifacts may decide to wipe out humanity as a pest) makes the idea of a deity far more plausible, if not inevitable. It is a small logical step to suggest, given the above discussion, that our future artifacts could become deities themselves that then create future universes.

But, if so, how could (human) science “get a handle” on such artifactually created future universes? For example, if the artifacts in our universe, obeying our universe's laws of physics, create new universes with other laws of physics, how could human beings ever know of the existence of such new universes? How indeed? However, the question I feel is a valid one and should not be thrown out with the bath water, being dismissed as “idle metaphysics”.

6.1 *Hyper-physics*

I think science ought to give a lot more thought to the notion of what I call “hyper-physics”. Hyper-physics is a “superset” of ordinary physics, which has as its domain of

discussion, the universe we live in and those universes that our future artefacts could design and create. We should also consider the possibility that the universe we live in is the creation of a preexisting deity, or artefact. Thus we need to think about a “tree of universes” that branches each time a new universe is created “inside” a preexisting one. The “investigation” of such a hyper-physics (i.e. the tree) might be one of the major preoccupations of our artefacts.

Since our universe is nearly 3 times older than our solar system, it is quite possible that other suns in their zillions have already evolved intelligent life that has moved on into the artefactual stage which then creates new universes. Hyper-physics would then be the study of all these universes. Since such a study, very probably, requires capabilities way above those of the human brain, we mere humans can only speculate and contemplate in awe at what our artefactual creations may devote their time and godlike intellects to.

Perhaps these artefacts might even be able to give sensible answers to the very deepest of metaphysical questions, as to why anything exists at all, and whether there exists a “supergod” that started the whole chain of artefacts creating a tree of universes. This type of meta-physics differs from the more modest hyper-physics suggested above. A universe-creating artefact still exists in the hyper-physical tree of universes, but the question of where the first deity came from remains as mysterious as ever, the ultimate meta-physical question that the most brilliant of theologians have been wondering about for centuries.

7. *Summary*

This essay hopes to persuade its readers that science ought to take the notion of deism a lot more seriously. The rise of the artefact this century makes the notion of a hyper intelligent designer and creator of our universe far more plausible. It suggests the creation of a “hyper-physics” (as distinct from traditional meta-physics that poses the deepest of questions) that would “investigate” the tree of universes that a branching set of artefacts may have created.

Bio :

Prof. Dr. Hugo de Garis, 63, has lived in 7 countries. He recently retired from his role of Director of the Artificial Brain Lab (ABL) at Xiamen University, China, where he was building China’s first artificial brain. He and his friend Prof. Dr. Ben Goertzel have just finished guest editing a special issue on Artificial Brains for the Neurocomputing journal (December 2010), the first of its kind on the planet. He continues to live in China, where his US savings go 7 times further given China’s much lower cost of living. He spends his afternoons in his favorite (beautiful) park, and his nights in his apartment, studying intensively, PhD level pure math and mathematical physics to be able to write books on topics such as Femtometer Scale Technology (“Fermitech”), Topological Quantum Computing (TQC), as well as on other technical and socio-political themes. He is

the author of two books (amazon.com) :- A) “The Artilect War : Cosmists vs. Terrans : A Bitter Controversy Concerning Whether Humanity Should Build Godlike Massively Intelligent Machines” (2005), and B) “Multis and Mono : What the Multicultured Can Teach the Monocultured : Towards the Creation of a Global State” (2010). Both these books are concerned with the political consequences of future technologies. He labels his new life style “ARCing” (After Retirement Career-ing), feeling freed from wage slavery, spending (probably) the remaining 30 years of his life pursuing with passion, those deep and interesting topics that truly fascinate him, without having to waste huge amounts of time writing an endless stream of relatively unread, unmeaningful, short-horizon scientific papers or research grant proposals just to receive a salary. He feels liberated from all that, and can recommend ARCing to anyone with sufficient savings (i.e. to take up “wage free careering in the third third of life”).

E2) A Transhumanist Argument for the Existence of God(s) : An Interview with Ben Goertzel

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Ben:

You've said a few times recently that you're open to the idea of "deism"... and you've just published an article on KurzweilAI.net titled "From Cosmism to Deism." I'm curious to ask you some questions digging a little deeper into your thinking on these issues. Could you start out by clarifying what you mean by these two terms, Cosmism and Deism?

Hugo:

I defined these two terms rather succinctly in the kurzweilai.net essay, so I'll just quote them here. "Deism is the belief that there is a "deity" i.e. a *creator* of the universe, a grand designer, a cosmic architect, that conceived and built our universe." Cosmism is the "ideology in favor of humanity building *artilects* this century (despite the risk that advanced artilects may decide to wipe out humanity as a pest). *Artilects* are "artificial intellects, i.e. godlike massively intelligent machines, with intellectual capacities trillions of trillions of times above the human level." *Deism* is to be distinguished from *theism*,

which is the belief in a deity that *also* cares about the welfare of individual humans.

Ben:

Previously you have talked about "Building Gods" as the ultimate goal of artificial intelligence technology. So is your basic argument in favor of deism that, if we humans can build a god, maybe some other intelligence that came before us also was able to build gods, and already did it?

Hugo:

Yes, pretty much. The traditional arguments in favor of a deity (as distinct from a theity, which I find ridiculous, given that last century 200-300 million people were killed in the bloodiest century in history – so much for a *loving* deity) are less strong and persuasive in my view than the artelect-as-deity argument. The rise of the artelect is based on science, and the extrapolation of artelectual intelligence to trillions of trillions of times above the human level, seems very plausible this century. If human beings (e.g. Prof Guth at MIT) have theories on how to build baby universes, then perhaps artelects could actually build them, and hence, by definition, become deities (i.e. creator gods). That was the main point of the kurzweilai.net essay.

Ben:

What's your working definition of "intelligence"? In other words, how do you define "intelligence" in a way that applies both to human minds and to the potential super intelligent deity that you hypothesize?

Hugo:

As a common sense, man-in-the-street definition, I would say, “Intelligence is the ability to solve problems quickly and well.” As a research scientist, I am made constantly aware, on a daily basis, of the fact that intelligence levels differ greatly between individuals. I spend my time studying PhD level pure math and mathematical physics, trying to wrap my head around the works of Fields Medal winners such as Ed Witten, Michael Freedman, Richard Borcherds, etc (all males by the way – females, with their 10% smaller IQ variance compared to males, will win one Fields Medal perhaps per century), all with IQs over the 200 mark. Believe me, with my mediocre intelligence level, it gives me “brain strain”. So it’s easy for me to imagine an ultra intelligent machine. I only have to imagine a machine a little bit smarter than these geni. I am in awe at what these geni create, at what the best examples of the human intellect are capable of. I am in awe. However at a neuroscientific level, we don’t know yet what intelligence is. A five year old can ask questions about the nature of human intelligence that are beyond state-of-the-art neuroscience to answer, e.g. “What was so special about Einstein’s brain that made him Einstein?” “Why are some people smarter than most?” “Why is the human brain so much smarter than the mouse brain?”

I dream of the creation this century of what I label “Intelligence Theory (IT)”, that would provide real answers and understanding to such questions. It is only a question of time before neuroscience provides such answers. We will

find “(neuro-physiological) correlates to intelligence” (e.g. (just guessing here) smart people have more efficient synapses, or more synapses per neuron etc.) and be able to extrapolate up the graph of such trends and put the greater capacity into our machines, or give people special drugs that create such greater intellectual capacities. This IT should be applicable to mouse brains as well, and tiny insect nervous systems. We have some clues today about what a future IT might look like. For example, a mouse brain has about a thousand cortical columns, whereas humans have about a million. The cortical columns are the same between the mice and the humans. We humans have more of them, and differently interconnected. (A cortical column consists of about 10,000 highly interconnected neurons in a column shape of diameter of about 0.5 mm, and 2 mm long, located on the cortical surface of the brain. Connections between cortical columns are less dense than within columns. Some neuro-theorists think that the cortical column is the unit of brain processing, rather than the neuron.) Perhaps a future IT might be based on the theory of how networks of cortical columns generate intelligence. Once “intelligists” (specialists who study “intellistry”, the study of the nature of intelligence) are able to abstract the nature of intelligence from the concrete examples of biology, they ought to be able to construct a mathematical theory of the nature of intelligence, “intellics”, which should aim to include the intelligences of all known biological species and, as far as is humanly possible, near future hyper intelligent machines (artilects).

We should aim at a universal definition of intelligence that would be applicable to all levels of (humanly) known intelligence. It is an interesting question how far up the superhuman intelligence level a human concocted IT could go. One would think that the finite level of human intelligence, by definition would preclude humans thinking of an IT at a level that an artefact could manage.

Ben:

Following up on that, one question I have is: If there is some "superintelligence" that created the universe, how similar do you think this superintelligence is to human intelligences? Does it have a self? a personality? Does it have consciousness in the same sense that humans do? Does it have goals, make plans, remember the past, forecast the future? How can we relate to it? What can we know about it?

Hugo:

My immediate reaction to that question is that with our puny human brains, we very probably cant even begin to conceive of what an artefact might think about or be like. If we think that a universe-creating, "godlike" artefact has the human like attributes you list above, then that might a "category mistake" similar to a dog thinking that human beings are so much smarter and capable than dogs, that they must have many more bones lying around than dogs do. One thing that is interesting about this question though, is that by conceiving of the artefact as a scientific based creation, we can begin to attempt answers to such questions from a scientific perspective, not a theological one, where

theologians are all too likely to give all kinds of untested answers to their particular conception of god. Is a consciousness, or sense of self a prerequisite to the creation of superhuman intelligence? These are interesting questions, that I don't have answers to. Perhaps I haven't thought deeply enough about these types of questions.

Ben:

In a nutshell, how does your deism differ from conventional religions like Christianity, Islam, Judaism and so forth? And how does it differ from Buddhism, which some have argued isn't really a religion, more of a wisdom tradition or a practical philosophy?

Hugo:

Traditional religions such as the above, that were invented several thousand years ago, after the agricultural revolution and the growth of cities (with their occasional genius level priest-theologian) I find ridiculous, utterly in conflict with modern scientific knowledge. The cultural anthropologists of religion have shown that humanity has invented on the order of about 100,000 different gods over the broad sweep of history, and across the planet. These many gods are so obviously invented (e.g. New Guinea gods have many pigs, etc) that their human origins are obvious. However, the fact that every primitive little tribe has invented its own gods makes one deeply suspicious that human religiosity is in fact physiologically based, and hence has Darwinian survival value (e.g. if you can believe in a loving god, you are less likely to commit suicide in a cold, indifferent,

callous universe, so religiosity inducing genes would be more selected for).

Deism, on the other hand, especially with the artificer-as-deity argument, is much closer to modern science in its conception. The very real possibility of the rise of the artificer this century virtually forces anyone confronted with the argument to accept its plausibility. Our sun is only a third the age of our universe, and there are a trillion trillion 2nd generation stars that we can “observe” that probably have generated life and intelligence. Once a biological species reaches an intelligence level that allows it to have mathematics and science, it is then only a small step for it to “move on” to the artificial stage, whose potential intelligence is astronomically larger (pun intended) than any biological level. An artificer of the distant past in an earlier universe may have designed and built our universe. It would have been our deity.

Ben:

Traditional religions serve to give people comfort and meaning in their lives. Do you think that the form of deism you advocate can serve the same purpose? Does it serve that purpose for you -- does it make you feel more meaning in your existence, or in existence in general?

Hugo:

I look down on traditional “religionists” as ignorant deluded fools. The fact that where I lived when I was living in the US, namely Logan, Utah, there were hard-science professors who were converted Mormons, showed me that

the human brain is modular, with some compartments isolated from other parts, e.g. the religious areas from the critical analytical scientific areas, so that these professors were unable or unwilling to destroy their religious beliefs with just a little analytical scientific thinking. I don't have much patience with people who have low "RQs" (reality quotients). If I present these religionists with the idea that many tens of millions of theists last century were killed in the bloodiest century in history, they just block thinking about its implications. If I show them the evidence that humanity has invented 100,000 gods, they do the same. I don't deny that if one is able to believe in a loving god, it might be comforting, especially to someone who is, in Darwinian terms, sexually unattractive, and gets no human partner, so remains unloved, especially older widows, whose supply of men has run out due to the greatest of human realities, death. But emotional comfort and high RQ may not be compatible. If forced to choose, I prefer not to be a gullible child. A non-theist deist looks at the massively indifferent universe as a given. Having "faith" is no argument to me. Believing something simply because one wants to believe it allows one to believe in the "tooth fairy."

Accepting the idea that a deity might be possible, certainly increases my sense of awe. Imagine (if that is humanly possible) the capabilities of such a creature that can design and build a whole universe. That is why I call artifacts "godlike". They may have godlike capabilities, but still can be thought about (by humans) as falling within the domain of science. Such a possibility makes me look on existence

with a different light. I would then see the universe as having a meaning, i.e. the meaning given to it by its artefact creator. Of course, one can then ask, how was the artefact that created our universe itself created? The ultimate causation question, simply gets put back a step. The ultimate existential question “Where did all these embedded universes come from and why?” remains as mysterious as ever. But, thinking about what was going on in the “head” of an artefact deity when it designed our universe (with all its wonderful mathematical physical design) is fascinating to a scientist. How to design a universe? What a wonderful challenge for science to grapple this century and beyond. Of course, as humans, we may be too stupid to answer such a fascinating question.

Ben:

I'm curious what is your own history with religion. Were your parents religious; were you brought up in a religious environment at all? I know you lived for a while in Utah, a very religious part of the US, and found that a bit uncomfortable.

Hugo:

My parents were Church of England and sent their 3 kids to private Methodist schools. So until my teens I was conventionally religious, having to listen to “Christist prayers” every morning at “school assembly”. I was rather late going through puberty, so my brain didn't start becoming adult and critical until I was 17. I then “discovered” science with a vengeance, and decided that I would not become a doctor but a scientist. Once I absorbed

the basic scientific credo of “test your hypotheses”, my old religious beliefs began to look more and more ridiculous. I then met an atheist who was a few years older than I was and very smart. What he was, served as a model for me, as to what I could become, so I rapidly switched to non-theist beliefs. The more science I learned the more ignorant traditional, 2000 year old Christist beliefs appeared to me. For decades I was an “unquestioning atheist”, until the “anthropic principle” came along in the 1980s (i.e. the values of the constants in the laws of physics are so *fantastically* finely tuned to allow the existence of matter and life, that it looks as though the universe was designed) and the more math physics I learned, the more suspicious I became that the universe was designed according to highly mathematical principles – the deity-as-mathematician argument. These two principles – the “anthropic principle” and the “mathematical principle” feature in the kurzweilai.net essay ([link here](#)).

Ben:

Now I'm going to get a little more technical on you. You've spoken of the "deity as mathematician" argument. Is this a version of Eugene Wigner's observation of the "unreasonable effectiveness of mathematics"? It seems to me that this is an interesting intuitive argument for the existence of some fundamental hidden order in the universe -- related to the order we see in mathematics -- but not necessarily a strong argument for an actively intelligent "deity" with its own coherent memory, consciousness, goals, and so forth. Can you explain how the observation of surprising amounts of mathematical structure in the

universe suggests the existence of a "deity" rather than just a "subtle hidden order"? Or is your deity basically the same thing as what I'm (somewhat awkwardly) calling a "subtle hidden order"? Hopefully you can see what I'm getting at here; unfortunately English isn't really ideal for discussing such things with precision (but if I switched to Lojban I'd lose most of the audience, including you!)....

Hugo:

Yes, subtle question. I think the rise of the artelect with its massive intelligence levels this and later centuries makes very plausible that our universe operates according to such deep mathematical principles. These principles would be the result of the artelect deity's design. Whether such principles could "be there" without such design, is hard to imagine. The deeper the physics geni of this century (such as Ed Witten, etc) delve into the deep structure of our universe, the more mathematical it seems to be, e.g. with superstring theory using the very latest ideas in low dimensional topology, with its beautiful mathematics. This creates in my mind the deep suspicion that our universe is designed according to such mathematical principles. If it is not designed, then is it just pure chance that our universe is so highly mathematical? That seems so implausible. This "mathematical principle" is closely analogous to the "anthropic principle" in the sense that our particular universe design seems so fantastically a priori improbable. One is virtually forced to accept it has been designed. The so called "designer" traditionally was conceived of as a deity, but now that we humans can image artelects, we have a new way to imagine the designer, i.e. as an artelect,

and hence compatible with our deeply held scientific principles. I guess what I'm saying is – “artilectual deism is compatible with science”, whereas “traditional theism is simply pre-scientific garbage.” You (may have) alluded to Spinoza's ideas with your “subtle hidden order”. Einstein talked about “der Alte” (the “old one”, who designed the universe). He wanted “to know his thoughts.”

I agree with you that if there were no artilect-deity concept, then the existence of a subtle hidden order would support the idea of a creator less strongly. But science based artilects are now very credible, so give strong support to the idea of our universe being designed by an earlier artilect in a previous universe. One fascinating question this raises in my mind is the status depth of mathematics. Are the principles of mathematics in some sense “deeper” than even the artilect deities? Are such artilects obliged to use mathematical principles as a given, or are these principles, in some (humanly unfathomable?) sense, concocted by these artilects? This is a really deep mystery for me, but fascinating philosophically.

Ben:

I'm also intrigued by your notion of hyper-physics (*link here*) -- i.e. the study of the physical laws of all possible universes, not just the one we happen to live in. But I'm perplexed by the role played in this notion by the choice of one's mathematical axiom system. It seems to me that if one has a fixed choice of mathematical axiom system (say, standard Zermelo-Frankel set theory, or whatever), then one can ask which “physical law sets” are consistent with

this axiom system. So for instance, if one has a theory of what kinds of sets qualify as "space-time continua", one can then ask what kinds of space-time continua are possible according to ZF set theory. But then the question becomes: where does the axiom system come from? Godel showed us that there's no one correct choice of mathematical axiom system. So it seems to me that hyperphysics ultimately rests on an "arbitrary" choice of mathematical axiom system, if you see what I mean. You can't get away from making some kind of foundational assumption, if you want to say **anything**. Or am I somehow misunderstanding your idea? Do you think there's some special distinguished mathematical axiom system governing all the universes in the hyperverses? If so, which one is it??!! Or maybe this is something only the transhuman mathematical deity knows??

Hugo:

Your questions are getting deeper and subtler. I had to read this question several times, to get its essence (maybe). I interpret your question to mean "How to map the hyperphysics to a mathematical axiom system?" The ZF system currently used by us seems to work for our universe. Our (human) mathematics seems to be sufficient to understand the physics of our universe. Whether it may prove sufficient for a hyper-physics is a deep and unanswered (unanswerable?) question. As humans, it is possible that we may never get an answer to that question. Our human intelligence level is finite. There are probably many deep questions that we are too stupid to find answers to. There may be many other questions too subtle for us as human beings to even conceive of. Just how deep does

mathematics go? Are we humans evolved to be mathematical? Perhaps the universe was built according to mathematical principles, hence for Darwinian survival reasons, our brains were forced to evolve to think in mathematical terms to interpret the behavior of our universe, to survive.

Ben:

OK, before I let you go, let's bring things back a little closer to the real world! You're currently based in China. I know the East traditionally has very different attitudes toward religion, philosophy and existence in general than the West. Have you discussed your approach to deism with any of your Chinese friends or colleagues? What do they think about it? Do you think that as the future unfolds, mathematical deism will catch on more quickly in China or in the West?

Hugo:

I'm now retired (at 63), and am ARCing (After Retirement Careering, i.e. wage free careering in the third third of life). I spend my time studying (with an intensity that I had not known before when I was a wage slave) PhD level pure math and mathematical physics, with the view of later writing books on Topological Quantum Computing (TQC) and femtometer technology ("Fermitech"). I concentrate on this so much, I'm neglecting to learn my Chinese, so my ability to communicate with Chinese intellectuals is minimal. So I don't. I live in a western dominated intellectual world thanks to the internet. My body is in China but my mind is still in the west. (I also have a real

aversion to the stupidity and clumsiness of the Chinese writing system. As far as I know, China is the only country in the world that does not use an alphabet, one of the greatest of all human inventions.) To the extent that I am able to communicate with the Chinese, after living in China for 4+ years, my judgment of their level of intellectual development is sharply critical. China is still a brutal dictatorship, in which Mao Zedong killed about 80 million Chinese in peace time, the greatest tyrant in history, yet his face is still on the country's money. If any Chinese intellectual criticizes publicly the Chinese government, he will be sent to a slave labor camp called a "laogai", of which there are still over 1000 in China (according to Harry Wu's "Laogai Museum" in Washington DC). China needs to double its current living standard of about \$4000/year/person to pass the economic "democratic threshold" of \$6000-\$8000/year/person, that research in the branch of political science called "transitology" shows is needed (based on the experiences of 100 countries over the past half century) before a one party dictatorship switches (or transitions) to a multi party democracy. (Two thirds of the countries of the world are currently democratic with multiparty elections. The whole planet is democratizing, at the rate of about 2 countries per year. In 40 years, there won't be any dictatorships left. I call this process "dedictation", i.e. ridding the world of the last dictatorships. 90% of non Chinese people live in democracies. China is the big bad exception.) Once this \$6000-\$8000 threshold is reached, the proportion of people living in a country who are middle class, with university degrees and hence demanding control over their own lives, is sufficiently

powerful to push the dictatorial party either out of power, or to force it to reform itself into a democratic party, competing in elections.

I calculate that China will be a democracy within about ten years, i.e. before 2020. Now that China is the world's second biggest economy, the world community is becoming increasingly alarmed at the prospect that in a few decades the Chinese economy will be bigger than America's and yet still be a brutal dictatorship. In the past the world community largely ignored China as an "ignorable shit hole". That is no longer possible, so one can expect the world community from now on to put enormous moral pressure on China to democratize (e.g. the Nobel Peace Prize to Liu Xiaobo). The current CCP (Chinese Communist Party) may be the greatest criminal organization in history (killing more people than even Stalin or Hitler) but at least it has given the Chinese people the world's highest economic growth rate and has pulled hundreds of millions of Chinese peasants out of starvation level poverty (with the great exception of the Mao generated "Great Chinese Famine" of 1958-1962 which saw 30-40 million Chinese starve to death). If the CCP leadership is intelligent, it should see the writing on the wall, and make plans for a smooth transition to democracy, that it may even win in the Chinese elections, with the slogan "Do you want your country run by amateurs, and see the world's highest economic growth rate evaporate?" This is a powerful and winning slogan. I have visions of later getting fluent in Chinese and becoming a "transitological advisor and propagandist" within the

democratic faction of the CCP, trying to persuade the party's intellectuals and strategists to plan for a smooth transition to democracy. Only then, once China has freedom of speech, will China's intellectuals feel free to express their deep feelings and be creative. Today's Chinese intellectuals have a deep fear of the CCP. In the 1950s, Mao invited them to "let 100 flowers bloom", i.e. to express their criticisms of the policies of the CCP. Many did. In fact the criticisms were so severe that Mao then killed half a million of them in the "anti rightist campaign", thus killing off China's intellectual life for 3 generations. Today's China is an intellectual pigmy, a moral and intellectual shit hole.

Why then do I live in China? One reason is that my American savings go 6 times further given the low cost of living in China, so I can ARC earlier in life, freeing myself from wage slavery to spend my time on what *I* want to do. The other is more longer term. In the 2020s and 2030s, when I hope to be alive still, I expect to see China blossom intellectually as a billion educated people flex their intellectual muscles and become the planet's dominant culture. That will be an exciting time to live through. I think once a billion Chinese have freedom of speech and great wealth, they will dominate not only the species dominance debate, but virtually every intellectual topic, including the mathematical-deity topic, so will progress along these lines faster than in the western countries.

Sorry, that this answer is a bit long. When you press my China button, I tend to get prolix and passionate.

Ben:

Right now your approach to deism is unusual ... whereas religions like Christianity, Islam, Hinduism and Buddhism occupy most of the world's population. What do you think are the prospects for a broader acceptance of your form of mathematical deism? Do you think this will become a common religion among human beings as the Singularity gets nearer? Do you think it can help people deal better with the unsettling nature of the technology-driven transformations to come? Perhaps making Cosmism more appealing to people who are attached to some sort of religious point of view? Do you envision the emergence of actual Mathematical Deist churches, where people sit and ritually collectively worship mathematical order, and the priest recites great theorems to the crowd? Where is this all going?

Hugo:

I spent about 30 years of my life living in western Europe, which is highly secular. Traditional religions have pretty much died out, especially in countries like the UK, Scandinavia, etc. People are becoming better informed about the basic principles of science, so will be more accepting of a science-based deism. But, since this is a rather intellectual conception, it may only be popular with the “sages” (my word for the intellectual, high IQ types -- I intend writing a book in the future, on Sagism, which hopefully will raise people’s consciousness that sages are discriminated against in the modern world). As the “species dominance debate” (i.e. should humanity build artifacts this

century or not?") heats up in the next few decades, the Cosmists (i.e. people who want to build artifacts) will use the "building gods" argument as one of their strongest, to persuade people to choose to build artifacts. As secularism becomes more widespread, as theism dies, then the Darwinian religiosity components of our brain can then be "satisfied" with a "science based religion", i.e. Cosmism, the ideology in favor of building artifacts. I see the "religiosity argument" of the Cosmists, being their strongest. Will there be Cosmist churches? Maybe - for the less intelligent. Churches are for the masses. Cathedrals evoke a religious response. They are bigger than a human being, making people think about higher things than where their next meal will come from. Maybe some reader of this essay will start the "Global Cosmist Church." (Global is the name I give to a global state, the topic of my second book "Multis and Monos" (amazon.com)). I've seen a video on youtube of some Scandinavian guy invoking the name of Turing as a future god, with "religious gestures" and incantations using words such as the bit, the byte, etc. It was quite hypnotic. I felt like rushing out into the street shouting, "I've been forgiven of my bugs, saved by the great compiler in the sky."

E3) X-TECHED CREATURES BILLIONS OF YEARS OLD

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Abstract

This essay speculates on what X-teched based creatures, that are billions of years older than humans, might do with their godlike capabilities that they have developed over such a long time period. It proposes a new research field, called “googlectics” that specializes in such speculations.

In earlier essays I conceived the idea of X-Techs, i.e. technologies at the “X scale”, where X could be femto, atto, zepto, etc. Scaling down a technology by a factor of a thousand would increase the total performance of that technology by a factor of 1000 to the fourth power, i.e. a trillion, since the density would increase by 1000 to the third power, and the inter-component signaling speed would increase by a factor of a 1000, since the inter-component distances are a 1000 times smaller. Hence “smaller is faster.” This line of thinking led me to the notion of SIPI (Search for Infra Particle Intelligence) rather than the usual SETI (Search for Extra Terrestrial Intelligence) based on receiving radio signals from

creatures similar to ourselves at a similar development level, which strikes me as being rather provincial minded.

The next logical step, it seems to me, is to speculate on what hyper intelligent synthetic creatures (artilects), which are x-tech based, might have done with themselves over billions of years, given that our sun, our star, is billions of years younger than most stars in the observable universe. This is a fascinating question, which this essay attempts to address.

How does one begin on such a speculation, given that these hyper intelligences would have performance levels trillions of trillions of times above the human level, and have had billions of years in which to evolve and complexify, before our sun was even born?

One place to start is to estimate their levels of complexity. One of my research topics is “Planck-tech” i.e. a technology at the Planck scale, 10^{-35} of a meter, which is 10^{27} times smaller than our current nanotech scale. 27 is 9 times 3, so a Planck-tech could outperform our current nanotech by a factor of a trillion to the 9th power, i.e. $(10^{12})^9$ which equals 10^{108} which in words is more than a googol. (A googol is 10^{100}). So a Planck-tech could “googolify” our current nanotech in relative performance levels. I chose Planck-tech since it is the smallest scale that main stream mathematical physics has conceived of, i.e. string theory. These googoled artilects (“googolects”) would be veritably god-like compared to human beings, which brings me to my first

major speculation, besides their vast performance superiority and their tiniest of sizes.

If one takes googolects seriously, then given that their scale is the same as strings, it seems reasonable to suggest that they could manipulate the properties of strings and related M-theory objects into structures of vast complexity, i.e. these structures would have a complexity level googol times greater than today's artificial brains. These googolects would be "thinking" (signaling) 10^{27} times faster than our current nanoelectronic circuits, since they are 10^{27} times smaller (assuming the speed of light remains a barrier.)

If these googolects can manipulate M-theory objects as they choose, then at larger scales, e.g. at our own human scale, we would not be able to distinguish between properties of the higher scales as "givens" (as is the case in physics today) rather than as "engineered". Thus, it is possible that a real paradigm shift becomes quasi inevitable, namely that when we study the properties of matter at the tiniest scales we may be studying properties that have been engineered, designed, manufactured. This would make these googolects "gods" because they have "created the universe". Of course, if these googolects are the result of billions of years of evolution, starting with biological evolution, then transitioning from biological to artillectual evolution, then finally scaling down ever smaller to reach the smallest possible (?) scale, the Planck scale, then obviously, they will be billions of years ahead of us, since we humans may be on the same "growth curve."

Incidentally, one cannot but notice that studying googolects, leads one almost inevitably into religious questions.

Before I start speculating on other things these googolects might do, this is probably a good moment to coin a label for a new research area that does just that, i.e. speculates on what googolects might do. I suggest “googolectics.” Since two heads are better than one, and many heads are better than two, I can only hope to break the ice in giving my own few suggestions and contributions to googolectics.

Another of my research interests, is something I call “I.T.” i.e. intelligence theory, that doesn't exist yet. This would be a branch of mathematics that underpins the space of intelligences, where our human level intelligences would be only a small subspace of that superspace. Einstein's and von Neumann's intelligence data points would be only marginally different from the data points in this space of ordinary humans. Intelligence space would include all known types of creatures, ranging from the single cell, to ourselves, and as artificial brains are developed in the near future, their data points could be added to the intelligence space. What I hope will come out of this I.T. will be an understanding of what it takes to create an intelligence level superior to some basis point. In other words, we will know what it is that generates superior intelligence.

Once I.T. can tell us what intelligence is, so that we can have a whole mathematical theory about it, then we will be able to create more intelligent creatures (artilects) simply by providing their forbears with more of what I.T. tells us

intelligence is. For example, say in the near future, neuroscience discovers that intelligence goes up with higher inter-neural signaling speeds, and a greater number of synaptic connections between neurons. Perhaps once whole human brains can be mapped in detail (all neurons, all synapses and their strengths etc) then correlations between these properties and individual intelligence levels may be discovered. This is highly likely. This knowledge will feed into the development of I.T. It might then be possible to make vast extrapolations up the parameter graphs of artificial intelligence levels, before we run into conceptual limits, whatever they end up being, i.e. hitting up against the limits of a given intelligence model, before having to jump to a newer superior model.

One obvious point to make that seems virtually certain, is that googoleths would be utterly incomprehensible to humans. We would be way too stupid to understand their godlike capabilities. In sheer quantity of knowledge terms alone, the googoleths would outperform us by amounts which we might try to calculate now. Let us assume that at human level intelligence and above, total knowledge generated by the species doubles every year. With this ultra conservative assumption alone, the googoleths total knowledge would be 2 to the power of several billions superior to ours, given that their stars are on average billions of years older than our star. Of course, their knowledge doubling rate would be far higher, given their vastly superior thinking speed.

My main two areas of intellectual interest are pure math and math physics. Let us assume that pure math has no conceptual limits, so that googolects could keep exploring the frontiers of pure math without limit. Perhaps they might spend their time exploring the implications of math hypotheses without limit. If these googolects are capable of manipulating nature at the tiniest scales, then they could apply their godlike math knowledge to the creation of the “laws” (blueprints) of the universe(s) they create, which might explain why today’s math physicists are intrigued to discover that the more they explore the ever smaller scales of the universe, the more complex is the math that is needed to describe them.

For example, why on earth are the elementary particles classifiable by Lie algebras (discovered in the 1960s) and why does the largest simple group (the “Monster”) form the basis of a 26 dimensional string theory (discovered in the 1990s)? Imagine this trend continues. At what stage would math physicists have to throw in the towel and simply abandon their unconscious assumption that they are discovering the properties of the universe (i.e. discovering what *is*) rather than accepting the idea that they are actually learning how googolects have “*engineered* the universe?” I suggest that only a few more such math physics revelations would be needed before a paradigm shift becomes inevitable. The “mathematical principle” (i.e. that the universe is too fantastically powerfully based on mathematics, to be a coincidence) would have to be accepted, and hence math physics would have found evidence that our universe has been designed.

This leads one to the suggestion that by studying the math properties of the universe at ever deeper and ever more intellectually demanding scales, we can come indirectly to some knowledge about the capabilities of the googolects. We would know for example, that they were great mathematical engineers, building their constructs based on beautiful and powerful mathematics, that today's math physicists are already discovering.

I have only scratched the surface of this fascinating new research topic. I hope that some of the above ideas will stimulate you to criticize them, and to go far beyond them, and thus establish firmly a new research field, as well as a new math physics "religion" of "*googolectics*."

E4) THE “DEISTIC MAXIMALISM PRINCIPLE”

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Abstract

The Deistic Maximalism Principle (DMP) is the idea that a universe designing hyper intelligence (a deity) uses the largest (maximal) example of a mathematical type (e.g. “E8” of the exceptional semisimple Lie algebras, or the “Monster” of the exceptional finite simple groups, etc) in its design of the structural, functional, mathematical principles of the universe. This strategy allows the deity the maximal number of options in its design.

A couple of years back, I was reading through one of my texts on Lie Groups and Lie Algebras (one of the most beautiful branches of pure math) and came across the following sentence which made me take notice -

“As to the exceptional algebras” (i.e. G₂, F₄, E₆, E₇, E₈) “the convinced Deist would have to believe that these algebras are destined to play an important role in the foundations of physics, and indeed investigators into the theory of elementary particles have lately begun to show

interest in the exceptional Lie groups” (e.g. one of the five pre M-theory string theories, E8 X E8)

My immediate thought was that “these two authors (Hausner and Schwartz) think along the same lines as I do.” This got me thinking. A bit later, while studying the exceptional finite simple groups, I came across papers by Borcherds, a Cambridge-Berkeley, pure mathematician and Fields Medal winner who linked the Monster group (the 10^{54} membered and largest of the exceptional finite simple groups, i.e. groups that cannot be decomposed into smaller groups, rather like primes to integers, or atoms to molecules) to a 26 dimensional string theory.

This really got me wondering. I’ve been thinking for quite a few years that the universe, i.e. the laws of physics, are so deeply embedded in mathematical principles (what I call the “Mathematical Principle”) that I’ve become more and more open to the idea that our universe has been designed by a hyper intelligence using advanced mathematics. Common sense told me, “Well, if I were such an hyper intelligence, I would probably use the *largest* example of the type of mathematical structure (e.g. exceptional Lie Algebra, exceptional finite simple group etc) I was considering in my universe design, because that would give me more options than a smaller example (e.g. for the exceptional Lie algebras, E7 or E6, and for exceptional finite simple groups, any of the other 25 in the list, e.g. the Baby Monster, or the Conway groups, etc.)

The exceptional Lie algebras and the exceptional finite simple groups were two clear examples of advanced math being needed to explain how the universe works. There are others. In many of these cases, nature uses the largest (maximal) example of the mathematical structure concerned. Why is that? Why not use a smaller example, e.g. $SU(3)$ is used in the classification of the elementary particles. $SU(3)$ i.e. the special unitary group of dimension 3, is very small compared to $SU(N)$, where N could be any very large positive integer. But, the type of group $SU(N)$ has an *infinite* number of examples. The two examples I have been discussing are both “exceptional” types. Maybe that’s the clue. If the hyper intelligent universe designer is going to use an exceptional mathematical type, it would probably opt for the largest one (the one with the largest number of members or elements).

This kind of thinking led me to reformulate the “***Deistic Maximalism Principle***” a little more precisely, namely, “*When a hyper intelligent designer of universes uses mathematical entities of exceptional type (e.g. the exceptional Lie algebras, or the exceptional finite simple groups, etc) to help it in its design work, it will choose the largest example of the exceptional type it is using.*”

This is a hypothesis, a conjecture. To confirm it, or refute it, further examples of exceptional mathematical types need to be examined as well as their use in mathematical physics.

I’ve always been fascinated by “classification proofs” in math. Pure mathematicians love to classify mathematical

types, because there is a wonderful finality, and completeness about a classification proof, which I need to explain a bit here. Imagine you are Evariste Galois, the 20 year old French mathematical genius who stupidly got himself shot in a duel, who gave the world, group theory and Galois theory. He had discovered that there were groups that could not be decomposed into simpler ones. In other words, he discovered the concept of the finite “simple” (i.e. indecomposable) group. A few decades later a few more were discovered by another French mathematician called Mathieu. A century passed before the next one was found, and then all hell broke loose. Soon there were more than 20 of these exceptional finite simple groups known.

The obvious question occurred to pure mathematicians, “Can we classify these exceptional finite simple groups?” i.e. can we make a complete list of them, and then prove with a rigorous mathematical proof, that there cannot exist any others that do NOT exist in the list, i.e. proving that the list is complete?”

Classifying the finite simple groups was one of the greatest achievements in human history, and was only finished in 2004. The general public hasn’t heard about it, because it is advanced pure mathematics, that only a tiny percentage of people are smart enough to understand it, so this pinnacle of human intellectual achievement is almost exclusively unnoticed. It was a gargantuan half century effort involving about a hundred mathematical researchers, spread over about 500 research articles and about 10,000 pages.

Eventually 26 such exceptional finite simple groups were found, and the classification proof that there cannot be any others, was finalized in 2004, mopping up the last of the loose ends (i.e. the so-called “quasithin groups”).

The largest of these exceptional finite simple groups is called the “Monster” with nearly 10^{54} elements or members. Its structure is so rich, that mathematicians are still far from having mined all of its secrets, of which there are many, because it has links to many other branches of math, e.g. number theory, mathematical string theory, etc.

When I learned that Borchers had linked the Monster to a 26 dimensional string theory, I was fascinated. It made me a bit more of a deist. Why on earth should nature be describable in terms of such an obscure and difficult piece of pure mathematics???? I became ever more suspicious that the universe was designed.

I am not alone in thinking that increasingly obscure pure mathematics will play an increasingly important role in mathematical physics. Besides Hausner and Schwartz, mentioned above, Freeman Dyson, of QED (quantum electrodynamics) fame, also thought that the Monster group was destined to play a major role in 21st century mathematical physics. He is quoted as saying (before he heard of Borchers’ work in the 1990s) “I have a sneaking hope, a hope unsupported by any facts or any evidence, that sometime in the twenty first century physicists will stumble upon the Monster group, built in some unsuspected way into the structure of the universe.”

Now that you have an idea of what a classification and a classification proof is, I suggest a collective effort now be made to assemble a list of mathematical structures that have classification proofs, and to see whether they have finite exceptional members in the list. The next step would be to see whether the exceptional members of these mathematical structures are used in mathematical physics, and especially whether the exceptional members used are maximal.

Would such use be universal? Probably not. There will probably be counter examples, but at the time of writing, I'm not sure if that's true. There may be many positive examples, e.g. the two I've given above, so at least the Deistic Maximalism Principle (DMP) may be partially true. If you're a hyper intelligent creature capable of designing and building universes, you may not feel the obligation to obey the DMP strictly, but use it only as a rule of thumb (speaking metaphorically.)

So, if you're a mathematical physicist with a strong mathematical knowledge, perhaps you can contribute to this quest. How many further examples (or counter examples) of the use of this principle can you find? If the DMP becomes a lot stronger in a few years, will that make mathematical physicists more open to deism? Will scientists look upon the nature of science differently, e.g. considering it not only the enterprise that examines what *is*, but also examining what is *designed*, and what the designs are??? Perhaps everything is designed!?

F) On SOCIETY

F1) ARCing

After Retirement Careering

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Abstract

This essay illustrates a lifestyle that is becoming increasingly common, as life expectancy increases, and people no longer accept traditional conceptions about retirement.

Introduction

Traditional attitudes towards retirement after a life long career were more or less along the following lines. At 65, an employee would be given a gold watch, and would then stay at home pursuing his hobbies, living off his pension and investments, doing what he wants. Within about 5 years or so he would get sickly and die.

I utterly reject this traditional model, and present here an alternative model that I call “ARCing” (After Retirement Careering), giving my own case as an example of what is possible.

Increased life expectancy

I begin with the growing phenomenon of increasing life expectancy. Recently I was looking over biographies of movie stars in movies whose trailers I could watch by the thousands (if I wanted) on my iPad. I was struck by how short their lives were. Many of them died in their 60s. In today’s world we are much more health conscious. We know not to eat too much red meat, to avoid fatty foods, to eat lots of fruit and vegetables, to take multivitamins, to exercise daily, not to smoke, to avoid stress, to go for walks, to have friends, to have good relationships, to have lots of good sex, etc.

Personally, when I see an old person who is hobbling along, with smokers cough, arched back, and weak muscles, I don’t feel sympathetic, I feel contemptuous – “Stupid ignorant fool! – He has ruined his quality of life by smoking, not exercising, not making his muscles strong, and now he is paying the price for his lazy ignorance. He will die young. Moron.”

In my own case, I am rather fortunate. I’ll be 64 in 2011, and expect to live into my 90s. I say this because I very probably have longevity genes. My father is still alive at 92 with nothing wrong with him. His grandfather died at 97

and his great grandfather at 99. Everyone guesses my age wrong by a decade or more, so lets assume I have 30+ more years of life. That's a LONG time.

2. Conditions for ARCing

I do not intend dawdling around the house for 30 years, waiting for death. That would be stupid. Instead, I have decided to launch on a new career, hence the name "ARCing" (after retirement careering), i.e. a second major career, lasting decades, in what I call the "third third of life."

One of the secrets to long life and a healthy life is to feel challenged by some task, or goal. If ones brain is strongly occupied by a challenging task, one's body tends to be moved around a lot carrying the brain that is challenged, performing all the activities that the brain has set itself. A happily preoccupied older person will also be happier and hence less stressed, so should live longer as a result.

Everyone's personal circumstances, financial, emotional, marital, sexual, etc will differ, so it is difficult for me to generalize how people should go about ARCing. I can only give my own case as a possible model, and invite readers to perhaps be influenced by it.

Finances

I start with finances. If you are poor and live from month to month on your monthly wage, then perhaps you cannot afford to retire, so ARCing or conventional retirement may be out of the question. Obviously one needs to have enough money to be able to stop paid work, if you are to start ARCing.

In my own case, I have the savings of the 5 years I was a professor in the US. Since I now live in China I can afford a lot more easily to ARC, because the Chinese cost of living is about 7 times lower than in the US. I live very modestly, on about 1000 RMB (about \$150) per month. My aging father has invested well, so I should inherit a tidy sum when he dies, so I'm not too worried about finances in the long term. I could even live for another 30 years on my own savings, if I continue to live modestly as I'm doing now.

I have spent about a million dollars over my lifetime buying books for my library. I have about 12,500 of them. If I had invested that money in stocks or property, I would probably be a lot wealthier now than I am, but financial wealth is not so important to me as intellectual wealth, and in that latter sense I feel positively rich. I made a life style choice during my middle years and live now with the consequences.

Choosing a new career

I suppose there is no necessity to *change* careers if you love the one you are in. If you live in a country where there are no ageist retirement laws (i.e. where you must legally retire at a fixed age, independently of your capabilities. The US has had such anti-ageist legislation since the mid 1980s. Europe is only starting to do the same now, decades behind the US) then you can continue your current career as long as you like.

But, if you, like me, got bored doing the same thing for decades, then ARCing can be a most refreshing alternative. In my case I was a researcher in artificial brains. I was evolving neural net modules in electronics, very fast to assemble large numbers of them into artificial brains. I had no idea how my circuits evolved. They were a black box to me. I did this for 20 years, and became increasingly bored.

When I became a professor in the US for 5 years, I started taking Wal-Mart multivitamins and Omega-3 fish oil tablets for my concentration. The academic disciplinary training also helped my concentration (e.g. I did not have the luxury to tell myself a topic that I knew I had to teach the next day was too difficult and hence should drop it. I would not be able to teach a topic that was new to me, if I had dropped it as too difficult to learn, the night before.)

Another theory to explain my increase in intelligence (concentration?) in my 50s, was that perhaps the brain keeps on maturing, and rewiring all ones life. Perhaps my brain in my 50s simply went through some natural changes that were programmed in my DNA from birth? Who knows?

In my 50s, I felt I got smarter, rather than the reverse, which was a surprise. Most of my life, I was under the impression that people's brains aged, and got less sharp in older age. That was not the case with me. I may have become more forgetful, but I was able to tackle the heavy pure math and math physics that was a strong interest in my teens and early twenties.

For years, I had been buying PhD level texts on pure math and physics, telling myself, that in my retirement, I will have the time to really study all this "powerful beautiful stuff". Well, that time is now.

In the past 5 years, I have had two books published, so want to write a string of them in my ARCing period. I am now studying intensively, PhD level pure math and math physics, so that in a few years I will be able to write books on such topics as "Topological Quantum Computing" and "Femtotechnology". Pure math and math physics are the most intellectually demanding topics on campus, so they definitely keep me challenged. At times, they give me what I call "brain strain", but that is part of the challenge. If it were too easy, it would not be satisfying.

Life style change

When one is working in one's "middle third" of life, one is usually an employee, and hence under the thumb of an employer, or managerial boss. One is NOT free to do

entirely what one wants. One of the huge advantages of ARCing is that suddenly you are free, and the feeling can be intoxicating. For example, in my case, I like working at night. I love the peace of the night, when I can forget about the noisy chaotic outside world, and can concentrate on my own thoughts and ideas, as they come tumbling out in the peace of the night. So, I wake up at about 2pm, and go to bed about 7am after sun up, using a sleeping mask to make everything dark. In the afternoons, if the weather is adequate, I take myself and a collapsible camp chair to my favorite beautiful park, and study my heavy texts until the sun goes down.

This lifestyle allows me to surround myself with the beauty of nature in the afternoons (see the photos section) and the peace of the night. I find it incredibly productive. I am a lot happier as a result and a lot more productive, even though in objective terms I'm definitely poorer. I don't have the income I had before which allowed me to travel a lot. However I am fortunate in that my ideas attract the attention of the world media, so I get invited several times a year to give talks or to participate in TV programs, with airfare, hotel, and often an honorarium paid, so I don't feel to be handicapped in terms of travel. Also, since I was making international trips about 2-5 times a year for 2 decades, I'm tired of sitting in airplanes crossing continents. I am quite happy to lower my traveling frequency, but I don't want to give up traveling entirely.

3. More global social effects of ARCing

I can imagine that if many millions of people around the world take up ARCing then that will have a social impact, in the sense that the attitudes and values expressed by the ARCers will influence the “paid careerists.” I can imagine that the people in the middle third of life may actually envy the freedom of the ARCers and long for the time when they too can start ARCing.

Since we all have to eat and be sheltered, it is essential that people work and get paid to create the necessities of life. But, in the modern world, where technologies have made economic productivity levels so high, it is now possible for people to save enough to start ARCing earlier in life than was possible in earlier decades. In my case, for example (assuming I keep my health for the next 30+ years) I plan to have a major new second career that will last me three decades, a major block of time, and a major commitment in my life.

Because I’m free, i.e. wage free, I have no boss breathing down my neck, pushing me to do what he wants me to do. Hence the work that I do, is the result of my own choosing, so the pleasure level in performing such work is much greater than before. I live now with an intensity that I have not had before. I can recommend it strongly.

Health conscious

Since I’m in my 60s, I need to pay close attention to my health, so I exercise vigorously for 15 minutes each night,

to make my heart and lungs strong, as well as my back, chest and leg muscles. This gives me a feeling of strength and bodily efficiency. A fit body gets less tired at the end of the day (or in my case, night).

It is also important to be slim, with a BMI (body mass index, that is in the range of 18-23 for optimum weight; $BMI = wt(Kgms)/ht(ms)*ht(ms)$). To keep at this level, I eat just one normal meal a day, and fill up my stomach when I'm hungry with (bulky, low calorie) fruit. I am very conscious that to control ones weight, one needs to watch carefully, the total number of calories one stuffs into one mouth per day. By making meals fairly routine, in terms of their quantity, one can adjust that quantity depending on ones weight loss or gain, according to a daily weighing on the bathroom scales.

The number of years of happy ARCing one has will depend obviously on how healthy one keeps oneself. Hence to extend ARCing for decades, one needs to be very health conscious.

4. Down Sides to ARCing?

Are there any down sides to ARCing? One immediate factor that I can think of, is that if one changes careers, then one is untested in that new career, so that the status level one has in that new career will be inevitably low, because one has not built up a reputation based on performance in that career. One can look on the new career more as a

hobby. Since one is working wage free, one may not care much whether other people value what one is doing while ARCing, since their opinions are less important than before when the opinions of ones bosses were critical for earning one's salary and not risking being fired.

For those people who are highly susceptible to the opinions of others towards them, the loss of status that accompanies career switching might be a problem. In my case, I am glad to switch, since I got bored and felt unchallenged in the last years of my old career. I'm rather a strong willed individualist by nature, and have gone my own way all of my life, so if professional pure mathematicians and theoretical physicists have never heard of me, I don't care. I'm not ARCing for their sake, nor to make money. I'm ARCing because I love it. I love the subjects that I'm studying, and that is really what matters. If one truly loves what one is doing, then life's happiness can only increase.

F2) DIVORCE FIGHT FREQUENCY

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Abstract

This essay attempts to calculate a ball park frequency of “divorce fights” in our apartment block.

My Chinese wife and I live in a large apartment complex. A few times per year we hear couples fighting so badly that we feel that they must inevitably end in divorce. This fighting occurs so regularly that I was prompted to calculate what the annual frequency of such fights should be, given some reasonable assumptions. So I sat down to see if I could confirm theoretically what seems to be the empirical reality of several divorce fights per year.

My basic approach was to calculate the annual divorce probability per couple in the city I live in which has a 45% divorce rate (i.e. 45% of couples eventually divorce.) Once I had this statistic, I would calculate the number of couples in the apartment complex I live in and then multiply these two numbers to give me the desired “divorce fight frequency.”

Each floor in my apartment complex has 6 apartments, so assume 6 couples. (There are few singles in my complex.) The buildings are 11 storeys high, so 66 couples per building, and 5 buildings in the complex, so 330 couples, roughly speaking. I assumed the marriage age range was from 25 to 75, i.e. a period of 50 years, so if the divorce rate was 100%, that would be a probability of 2% per year of divorcing. But my city's divorce rate is 45%, so the expected divorce probability per year should be $2.0\% * 0.45 = 0.9\%$. Now multiply this 0.9% by 330 couples, gives roughly 3 "divorce fights" per year, which is ball park what we hear per year – and we do hear. A divorce fight is as its name suggests – a verbal fight so embittered, loud, and often physically violent, that no such couple could possibly stay together. So its somewhat comforting to know that the empirical number of divorce fights we hear per year is in line with the city's average divorce rate, and that it is not the case that our apartment complex is filled with psycho couples.

F3) NOT TAKING WOMEN SERIOUSLY

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When I was growing up in the 50s and 60s in the doldrums of the Australian suburbs, I found housewives of the time to be paralytically boring. The mothers of my school friends at my all boys school struck me as being as equally dull(ed) as my own house wife mother. So once I had left that benighted culture forever, and arrived in London, in the early 70s, the new feminist wave was in full swing. I became an avid male feminist, because I thought it might be possible that feminism might change women and make them, in my terms, “interesting,” meaning that I might be able to share my scientific passions with them, i.e. I might be able to share my brain with females. Ah the naivety of youth. Half a century later, being a lot older and wiser, I have come full circle. I now look upon the female mind with the same disdain and disinterest as I did in the 60s when I was looking then at women’s magazines with their preoccupation with buying pretty baubles, catching a man, keeping him, living off his money, etc.

In the 10s I label myself PR, rather than PC (i.e. politically realist, rather than politically correct). I don’t have much patience with doctrines that effectively really only express people’s deep desires, rather than rely on scientifically verified reality. For example, with my PR attitudes, I have

no qualms making statements such as, women lack genius, blacks are the world's dumbest people, Jews are history's most hated people, etc. I say such things for the simple reason they are true as shown by scientifically verified studies. I tend to dismiss PCers as "isscienate fairies" (i.e. ignorant of science), who live in their own fairy land, believing what they want to believe, rather like religionists, who desperately want to believe in a life after death, spent in a heaven of eternal bliss etc. Such people are children to me.

During my scientific career, in the 80s, 90s, 00s, I would go to world conferences in Artificial Life, Evolvable Hardware, Evolutionary Engineering, Artificial Brains, Species Dominance etc and often there would not only be no women amongst the presenters of published papers, there would often be no women even in the audience. Most of my scientific career was like this, i.e. no women.

I started to look into this phenomenon, wondering why women were making such a negligible contribution to world intellect. For example, only 1% of science Nobel Prize winners are female. There are no female winners of the math prizes, Abel Prize, Fields Medal. If you pull down a copy of "Who's Who in the US" you will find only about 5% of the entries are women. At any one time, a similar percentage of women are the nations prime ministers or presidents. I could go on and on. In short, women make a negligible contribution to the planet's intellectual life compared with men, so it is not at all surprising that women have lower status than men in virtually all cultures. If

women want to be respected more, they will have to contribute more. Leaders are respected, followers are ignored.

When I was a prof in the US in the early 00s, sometimes for amusement (until its predictability became monotonous) I used to walk slowly behind 20 year old female students chatting in twos, listening to their conversations, which typically took the form of "... and he said, and then she said ...". It became increasingly obvious to me, based on many of these "listen ins" that women do not have male brains, they have female brains, and male and female brains are differently structured and geared for different tasks. The female brain, we now know, thanks to modern neuroscience, is wired up more east-west, i.e. cross hemispherically, whereas the male brain is more north south, wired more intra hemispherically. Female brains have been evolved to be more interested in people, in relationships, and practical details. Male brains have been evolved to be more interested in things, abstractions, external situations, etc.

The sad thing about this depressing reality, is that for a male sage (i.e. intellectual, who loves playing with ideas) it is highly unlikely he will be able to share his mind with a similarly minded female. 99% of males are heterosexual, so male sages live with women, but that means they live rather intellectually lonely lives. They are unable to share their deepest intellectual passions with their life partners, who mostly haven't a clue what their male partners really care about. Its therefore not surprising that middle aged male

sages tend to have “heart and hole” relationships with their wives and girlfriends, i.e. they love and sex them, but don’t bother talking much about their true interests, since ultimately, their female partners, don’t really care.

Will this situation change in the future? I doubt it. In the 70s, feminists used to blame men for the lower status of women. Decades later, women, at least in the western advanced countries, have been in the workforce, the professions, for decades, and have learned first hand how it feels to fail, to be fired, to be shown up, etc just as much as males, so they know first hand, the challenges that men have faced for generations. Feminists have learned to see that women are largely responsible for their own failings.

But, there are genetic reasons why males are seen in nearly all cultures as the “superior (most prestigious) sex”, namely that males are 3-4 IQ points smarter on average than females (according to recent research by the late Prof. Rushton, who looked at 100,000 SAT papers each by males, and females. We also know that males have a 10% higher IQ variance than females, so that the extreme fringes of the Bell curve (the morons, and the geni) are male dominated. If you go far enough out along the Bell curve in math ability, there are no females, which explains why the math prizes are won exclusively by males. Personally I can think of only one world class female mathematician in history (Emmy Noether), whose father and brother were mathematicians, but even she probably had an “androgenized brain” since her male colleagues at Gottingen used to half jokingly describe her as “der

Noether” (“der” is the German male equivalent of the English “the”).

Males also have far higher levels of testosterone in their blood than do women, making them more aggressive, persistent, and dogged. This fits my own experience that the significant women of my life could never compete with my own level of devotion to a given task. Women are more multitaskers, and men more monotaskers. Multitaskers would cope better with a bunch of kids, and monotaskers would write symphonies and prove theorems.

I don't hear today's feminists complaining about the idea that the geni are males. I think they simply accept the scientific evidence, given that it is so overwhelming. Women have had decades of opportunity to show what they are capable of. In the western countries, they have entered in droves into the professions, law, medicine, dentistry, journalism, etc. But there is still no upward trend in the proportion of women winning science Nobel Prizes, not a trace.

For the past few decades I've been, I think its fair to say, one of the world leaders in what I call “the species dominance debate”, or what the Americans call the “Singularity” i.e. the rise of massively intelligent machines. It is a topic that is close to my heart, given that I and many others (virtually all male) think the rise of artilects (artificial intellects) this century will dominate our global politics this century. Have any women contributed in a non negligible way to this critically important of debates? Nope,

none. Its therefore not surprising, that I tend to not take women very seriously. I'm wondering, as I age into my 70s and the last traces of my libido slowly fade away, that the only thing keeping me interested in women is companionship. I certainly cant share my mind with women. They don't give a hoot about whether I can find a building block at the femtometer scale, or whether the Monster group will play a role in math physics, or whether advanced creatures billions of years older and far smarter than us exist out there in the universe. All I get from women is literally, complaints about the increasing prices of food at the supermarket. I think I will simply die not taking women seriously. I think that is just the way the world is, so I will just have to "lump it."

G) On EDUCATION

G1) GIVING EVERYONE A “MILLION DOLLAR” EDUCATION

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By a million dollar education I mean the quality of education that would be obtainable if students had a million dollars to spend on conventional text books. The internet now allows books and journal articles to be downloaded for free using file sharing sites and the conversion of paper format documents into electronic format documents using scanners with optical character recognition software, so that later they can be searched electronically. Thus an educational revolution becomes possible whereby students around the world, with access to the internet can educate themselves by use of their own electronic libraries that they can download for themselves and store on mass storage hard drives.

The only obstacle to this educational revolution is the opposition of the “Pluddites” (the paper luddites) who are leftovers from the paper era, in which they placed copyrights on the paper products (books and journal articles) they packaged and distributed. In the paper era, they performed a valuable service and the modern scientifically dominated world owes its existence to the paper publishers.

But in today's internet world with its cheap scanners, the copyrighted book or journal article is an albatross. Billions of people are now asking "Why should anyone be forced to pay \$50 for a single paper book, when they can download 50,000 such books for free from the internet?" The days of the Pluddite are numbered. Paper is dying. People can put a small library (e.g. 1000 books) on their iPads, and annotate them very effectively with the appropriate software. Very soon, they will be able to cross reference such e-books and e-articles at speed, instead of having to carry around a pile of heavy paper books.

The "globacators" (global educators) who are dedicated to providing free education to the planet (thus creating a world wide educated middle class, which then pushes for democracy in dictatorial countries, and since advanced democracies do not go to war with each other, a globacated world would be a war free world) are severely handicapped in achieving their goal by the Pluddites, and are impatient to see them go bankrupt as paper products disappear, and hopefully the copyrights that accompany them.

Millions of FIMmers (members of the Free Information Movement) are waging a quiet war (the "Paper War") against the Pluddites, by buying scanners and scanning books and journal articles and then uploading them to file sharing sites for other students to benefit from. The FIMmers do not feel "guilty" about breaking copyright in this fashion, a logic they reject as belonging to a bygone era – they feel they are on a moral crusade, in causing the bankruptcy of the Pluddites, who are seen as "keeping the

world ignorant, and hence at war”. To the FIMmers, the cost-benefit argument is very strong. There will obviously be a cost to the Pluddites, namely their bankruptcy, so they will lose their livelihood, but the benefit to *billions* of people, by allowing them to obtain a high quality free education, is even more obvious. To the FIMmers, the Pluddites are criminals, who “imprison knowledge” and should be eliminated, by causing their companies to go bankrupt. With millions of FIMmers scanning paper documents into the global “educational library” there is no way the Pluddites can survive. Their demise is only a question of time.

Once the copyright system has disappeared, future academic authors will need to publish themselves and not depend on publishing companies to do it for them. This will not be much of a change for them in financial terms (unless they write blockbuster 101 economic texts and the like) because most academic authors make very little money with their royalties, probably only a few hundred dollars per book and nothing at all on journal articles. I speak from my own experience here. An academic work, usually only sells a few thousand copies at best, so, unlike creators of pop music, movies, or journalistic articles, the loss of only a few hundred dollars will not phase the academics very much, and hence make the transition to free knowledge easier.

A strong moral value will come into being that information should be free, so that the planet can educate itself to a

high degree, giving all students a “million dollar education.”

There are some two billion “hungry minds” who will benefit from such an education, so once they get the idea into their heads that the only thing preventing them from pulling themselves out of their “impoverished shithole” via free globacation is the copyright system on paper publications, they will become a “force of nature” i.e. unstoppable, in their global political opposition towards and hatred of the Pluddites. No politician could withstand their pressure, despise the howls of the Pluddites, whose death knell will be tolled.

The principal near future task of politicians around the world will be to foster globacation, because it will soon be seen as the essential means to raise peoples standard of living. Getting a good education is usually the quickest way to pull oneself out of an inferior economic situation into a middle class life style. Within a decade, billions of people will be clamoring for free globacation, so the politicians worldwide will have to listen, and the Pluddites, if they have any sense at all, will read the writing on the wall, and get out of their dying immoral profession, especially if they are relatively young.

G2) BANKRUPTING THE PLUDDITES

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This essay presents a plan, already partially underway, on how to bankrupt the pluddites (i.e. the paper luddites, the paper publishers of academic journals and books). The essence of the plan is for academics to publish their own material for free on the internet and to put moral pressure on their colleagues to do the same so as to drive out the pluddites from the publishing industry, who imprison knowledge and hence block world wide free education, with all its enormous implications. So-called “free access journals” have already been in existence for several years, and some of them already have a considerable impact factor. But little has yet been done against the copyrighting paper book publishers. However, if academics publish their own e-books, there is a risk that the general quality of their work may decrease, without the support of professional editors, and formatting standards, etc. This essay not only provides a plan for hastening the bankruptcy of the pluddites, it also proposes a solution to this “quality problem” in the form of FAPs, Free Academic Publishers (both for academic e-journals (already underway), and for e-books (barely started))

Now that it is possible to distribute an e-book or e-journal article for free via the internet, the traditional paper

publishers (“pluddites” = paper luddites) are now seen increasingly as extorting albatrosses, that need to be got rid of, but what will take their place? Academics are busy people and rather lazy, who do not want to spend a lot of time, editing their own e-publications, so are tempted to let the pluddites do it, who then place copyrights on their work, thus keeping the ideas of the academics imprisoned, and unfree to the planet. How to get round this problem?

Academic journals today are usually chief-edited for free by academics who accept the job for the prestige it brings, which enhances their promotion chances at their universities. The authors of the journal articles don't get any money for their efforts either, so all that need be done in the case of academic journals, is to create new journal publishers in which all the work is done for *free*, by academics, as part of the “peer review system.” Some academics could be the reviewers, others the formatters, or perhaps the authors could do their own formatting, given clear guidelines by the FAP. Strong moral pressure could then be put on academics to avoid submitting any material to the pluddite publishers, so that they go bankrupt, as they should, so that the whole planet can benefit hugely from free education provided by free journal articles, without the extorting copyrights.

A similar story could hold for e-books. The problem here is the considerable task of editing manuscripts. FAPs could be set up by academics, in which the editor in chief of the e-book FAP could decide whether a submitted e-book candidate was of sufficient standard to have the FAP's

prestigious name attached to it. This way, today's prestigious academic pluddite publishing companies such as Cambridge University Press, Springer, etc could be replaced by equally prestigious FAPs. Academics, ever hungry to participate in the "publish or perish" rat race imposed by their universities, could put on their resumes that they had had an e-book published by a prestigious FAP. This would bring them as much prestige as with the traditional pluddite publishers. Academics could then put moral pressure on their more conservative peers who continue to publish with the pluddites, thus continuing the system of extorted imprisoned knowledge.

To encourage academics to volunteer as e-book editors, when invited to do so by e-book FAP editors in chief, a new custom could be created by which on the cover of the e-book, is not only the author(s) name(s), but the e-editor's as well, and the book editing achievement goes onto the e-editor's resume. Prestigious authors will insist on having prestigious free editors, so there will be kudos in being the editor of a famous e-book. Universities should encourage their academic staff to volunteer to be e-book editors so as to enhance the reputation of the FAPs and to promote the general desirability of free knowledge for the planet, with all its enormous consequences (e.g. the creation of a world wide educated middle class, which then pushes for democracy in the few remaining dictatorships, and thus create a peaceful world, since advanced democratic countries do not go to war with each other.)

What now needs to be done is for academics to step up to the plate and become free editors in chief of e-journal and e-book FAPs to get the ball rolling, and to kill off the pluddites. New FAPs will need to be formed, so academics will need to organize that too. Perhaps government grants could be given to help the large prestigious FAPs with the book editing by paying the salaries of professional book editors of high standard. In any event, the emphasis will be on the F in the FAP, with the aim of providing free education to the whole planet, which is utterly impossible under the pluddites who are seen by the FIMmers (Free Information Movement members) as criminals, knowledge gaolers, and extortionists, forcing people to pay for paper publications instead of e-publications, that should be free, since they cost nothing to package and distribute. The authors and the internet do that.

G3) THE PAPER WAR

FIMmers vs. Pluddites

(Free Information Movement members

vs. Paper Luddites)

**Bankrupting the Pluddites to Give Everyone a Million
Dollar Education and a War Free World**

Prof. Dr. Hugo de Garis

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(Power Point Talk)

Guten Tag, mein Name ist Fritz,

Im a *scribe*, copying holy works from ancient parchment texts
to new ones.

I work in the court of the King, and am a member of the
Guild of Scribes.

The King gave our guild the exclusive **right to copy** these texts,
so that amateurs cannot make bad cheap copies.

I sell my copies at high prices and can afford nice furs.

BUT, lately we scribes have a new problem ...

... those damn **PRINTERS** !!

Last year, some people brought in a *printing press* from a foreign city and started printing books.

These *printed* books cost a *hundred times less* than the books we scribes copy by hand.

Now the riff raff merchants can afford to buy books!
Can you imagine, merchants having books !!!

Even the monasteries are starting to buy these *printed* books.

We scribes are now feeling very worried.
Our livelihood is threatened.

We have petitioned the King to **arrest these printers**.
They are criminals, **infringing** on our *right to copy*!

Hi, I'm Hugo, I'm an *ARCer* (an **After Retirement Careerer**)

My new career is being a *Globacator* (Global Educator)
I'm helping educate the planet for free.

I make *YouTube video lectures* in PhD level Pure Math,
Math Physics, and Computer Theory.

Lately, Ive been making an *e-Library* in my 4 fields of interest

- a) Pure Math
- b) Math Physics
- c) Computer Theory
- d) Philosophy

You can see the results on my website
<http://profhugodegaris.wordpress.com>

Free Profs and Free Worldwide Education

A “**Free Prof**” is someone like me who makes YouTube video lectures and e-libraries for free to help educate the world.

Soon, everyone will have internet cell phones, and can watch these free lectures, thus educating themselves for free.

Im hoping that what Im doing will inspire others, especially free profs who are retired and have the time to make e-libraries and YouTube video lecture courses.

If there are 1000s of free profs in the near future, all specialties can be covered, so the world can be **educated for free**, one of the greatest social revolutions of the 21st century, with **huge impact**.

These are the Tabs on my website

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Click on the link of one of these 6 topics. You will then see a list of subtopics, e.g. for Math – Abstract Algebra, Algebraic Geometry, Algebraic Topology, etc (in alphabetic order).

Click on the subtopic you want. You will then be shown an alphabetical list (by first author) of paper, media and book references on that subtopic.

Most papers will have a link to Google Drive or to Google Scholar (indicated by GSclr) or to arxiv.org. Many of the books will have a link to amazon.com (Note, most of these links I have yet to insert – a lot of work, but they are going up rapidly now.)

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PHYSICS (Mathematical Physics) ([link](#))

COMPUTING (Computer Theory) ([link](#))

PHILOSOPHY (mostly Western) ([link](#))

BRAIN (Brain Theory, Cognitive Neuroscience,
Consciousness, Neuroscience) ([link](#))

ETC (Anthropology, Antigoyism, Chomsky, FedReserveScam,
Psychology, Very Short Introduction, etc) ([link](#))

“deGarisMPCPBE” PhD References, Math Topics List

A

Abstract Algebra, Applications ([link](#))
Abstract Algebra, *Basic* ([link](#))
Abstract Algebra, *Course* ([link](#))
Abstract Algebra, *etc* ([link](#))
Abstract Algebra, *History* ([link](#))
Abstract Algebra, *Lectures* ([link](#))
Abstract Algebra, *Linear Algebra* ([link](#))
Algebras, Associative ([link](#))
Algebras, *Banach* ([link](#))
Algebras, *Clifford* ([link](#))
Algebras, *Commutative* ([link](#))
Algebras, *Enveloping* ([link](#))
Algebras *etc* ([link](#))
Algebras, *General* ([link](#))
Algebras, *Geometric* ([link](#))
Algebras, *Hecke* ([link](#))
Algebras, *Hopf* ([link](#))
Algebras, *Jordan* ([link](#))
Algebras, *Kac-Moody* ([link](#))

...

100s of categories !!

“deGarisMPCPBE” PhD References, Computing Topics List

Artificial Intelligence ([link](#))
Brain Model ([link](#))
Cognitive Science ([link](#))
Computer Science ([link](#))
Data Mining ([link](#))
Genetic Algorithms ([link](#))
Machine Learning
Neural Networks ([link](#))
Quantum Computation ([link](#))
Theory Computation ([link](#))
Turing Machines ([link](#))

Cognitive Science

e-format from *emule.com*, paper-format from *amazon.com*

Papers on Cognitive Science

anon, Cognitive Science Dictionary (**free**)

anon, Review Essays, The Impact of Cognitive Science on Religious Studies,

A Revolution in the Making (**free**)

Arvidson, A Lexicon of Attention, From Cognitive Science to Phenomenology

Brandom, How Analytic Philosophy Has Failed Cognitive Science (**free**)

Byrne, Evolution of Primate Cognition

Fodor, Pylyshyn, Ch. 36, Connectionism and Cognitive Architecture

Harder, Togeby, Pragmatics, Cognitive Science and Connectionism

Heylighen, Representation and Change, A Metarepresentational Framework

for the Foundations of Physical and Cognitive Science (**free**)

Johnson-Laird, Mental Models in Cognitive Science

Kuhn, Why Information Science Needs Cognitive Semantics (**free**)

Lawson, Towards a Cognitive Science of Religion (**free**)

Norman, Twelve Issues for Cognitive Science

Pepperberg, Cognitive and Communicative Abilities of Grey Parrots (**free**)

Peterson, Cognitive Science, What One Needs to Know (**free**)

NOTE – the papers NOT marked (**free**) are copyrighted and **cannot** be viewed.

Shafir, Tversky, Ch. 3, Decision Making

Shapiro, Knowledge Representation

Strube, Cognitive Science, An Introduction (**free**)

Books on Cognitive Science

Burger, Human Memory Modeled with Standard Analog and Digital Circuits,

Inspiration for Man-Made Computers (**unfree**)

Chemero, Radical Embodied Cognitive Science (**unfree**)

Cohen, Lefebvre (eds.), Handbook of Categorization in Cognitive Science (**unfree**)

de Gyrky, The Cognitive Dynamics of Computer Science, Cost-Effective Large

Scale Software Development (**unfree**)

Fodor, Concepts, Where Cognitive Science Went Wrong (**unfree**)

Gallagher, Schmicking (eds.), Handbook of Phenomenology and Cognitive

Science (**unfree**)

NOTE - With **books**, the problem is **far worse**. Virtually all of them are marked (**unfree**), i.e. copyrighted.

The knowledge in these books is copyrighted, and hence is **inaccessible**. The Pluddites have *imprisoned knowledge!*

Imagine that there were no copyrights.

The job of the **globacators** would then be much easier.

The *quality* of the education given to the world would be *hugely greater* and *free*.

Hence the **PAPER WAR** between the -

- a) **FIMmers** (**Free Information Movement** members), and the
- b) **Pluddites** (**Paper Luddites**)

Pluddites are publishers of *copyrighted* paper journal articles and *copyrighted* paper academic books.

The **FIMmers** and the **Pluddites** are mutual enemies.

Why do the Pluddites hate the FIMmers?

Pluddites see **FIMmers** as **thieves**, stealing the content of their paper journal articles and paper books.

Pluddites invested a lot of money in creating their **paper products**. **Pluddites** want a financial return on their investment.

Therefore, **Pluddites** use the **law** to prosecute infringers of copyright, and **fine** them or send them to **jail**.

Lately, there are so many **FIMmers** breaking copyright, that **Pluddites** have become **paranoid**, fearing their livelihoods are being **destroyed** and are lashing out with excessive fines.

Sound familiar?

Why do the FIMmers hate the Pluddites?

FIMmers want information to be free, so that the world can be *educated for free*, with *huge consequences* for the planet, e.g.

- a) Free education on the internet (in a world where everyone will soon have internet cell phones) will create a **world wide educated middle class**
- b) It is always the middle class that **pushes for democracy** in dictatorships (130 democracies amongst 190 countries, of which 100 made the switch in the past 50 years)
- c) **Advanced democracies do NOT go to war with each other.**

Therefore, *free education* is needed to create a *war free world!*

FIMmers hate Pluddites for several reasons

a) **Pluddites as extorters.** Pluddites say to FIMmers, if you want to see the contents of our paper books and journals, you have to **buy** them.

FIMmers say to Pluddites, we now live in the **internet era**. Your traditional role of **packaging** and **distributing** information in *paper* format is now **REDUNDANT**.

The internet does this for free, so you **Pluddites** should go **bankrupt** and be placed in a **museum**. You are **paper luddites!!!**

b) **Pluddites as knowledge gaolers, imprisoning knowledge.**

By placing a **copyright** on papered knowledge, that knowledge is made *unfree* and *inaccessible* to most of the world.

c) **Pluddites keep the world ignorant.** **Globacators** cannot offer free and substantial education to the world because of the **Pluddites**.

d) **Pluddites keep the world at war.** Reverse the previous logic. There is no world wide free quality education due to the **Pluddite copyrights**, so no world wide educated middle class exists. So we don't have a world wide educated middle class to push for world wide democracy (i.e. to **dedictate**)

So we don't have a fully democratic world, so dictatorships survive, so wars continue, so we don't live in a war free world, so indirectly, the **Pluddites** keep the world at war.

e) **Pluddites as immoral criminals.** **FIMmers** feel a moral obligation to **bankrupt** the **Pluddites**, so 2 billion “hungry minds” can become well educated, and for free. **Globacators** particularly want this. **FIMmers** advise **Pluddites** to **quit** their **dying immoral profession**, and do something that **helps** humanity, rather than **hinders** it.

How are the FIMmers bankrupting the Pluddites?

The **FIMmers** main **weapons** in the **Paper War** are –

- a) **Scanners** (costing about \$100)
- b) **File sharing sites**, e.g. microTorrent.com, emule.com, etc

FIMmers in their millions are converting **paper** academic journals and paper academic books into **e-files** using their **scanners** and uploading the results to **file sharing sites** on the internet.

Millions of users then **download** these **e-files** for **free**, hugely benefitting their education.

By getting their **education for free**, they don't buy paper journal articles nor paper academic books, so the **Pluddites** go **bankrupt**.

Pluddite Pimps

Pluddites are not the only problem for the **FIMmers**.

The other problem group are the “*Pluddite Pimps*”
i.e. academics who send their manuscripts to **pluddites** for
publication, instead of **publishing** them **themselves for free**.

Pluddite pimps feed work to the **Pluddites** the way pimps send
customers to prostitutes.

Academics need to be published by high quality publishers, so
they can record this on their resumes, to improve their promotion
chances at their universities (Publish or Perish).

So a new kind of publisher is needed.

FAPs (Free Academic Publishers)

There are already **FAP** academic journals, usually called
“**Free Access Journals**”

Some of them already have high impact factors (i.e. are
frequently cited.)

But, academic *book* **FAPs** barely exist.

Academics need to create **book FAPs** and then publish with
them. There will need to be high quality **FAPs**, middle of the
road **FAPs**, and crap **FAPs**.

FIMmer academics can then accuse their colleagues who
publish with **Pluddites** of being “**Pluddite Pimps**” i.e. betraying
the cause of worldwide free education, and a war free world.

Pluddite Brothels

Even if most professors are **FIMmers**, there remains a problem if their universities are “**pluddite brothels**” i.e. universities which judge the publication records of their professors, according to prestige ranked **pluddite** publishers, i.e. not **FAPs**.

FIMmer professors will need to put moral pressure on their universities (**pluddite brothels**) to phase out **pluddite** publishers and replace them with **FAPs** on their universities’ prestige ranked publishers lists.

Professors will be busy, doing the following –

- a) Converting themselves from **pluddite pimps** to **FIMmers**
- b) Establishing **FAPs**, run by academics, to make them **free**
- c) **Moral pressuring** their universities against being **pluddite brothels**

Two Billion Hungry Minds!

There are about **2 billion** people on the planet who could **benefit** hugely from a high quality university level education.

Do the **cost-benefit analysis**. Livelihood loss for **Pluddites** (100,000s) vs. huge gains for the **2 billion!**

“**Free Profs**” (especially retired professors) have the time to make

- a) **YouTube video lecture courses**, and
- b) **e-Libraries** (with links to journal articles and academic books)

Within 5-10 years, these **2 billion** people will push the **Pluddites** out of business. They will demand free high quality education as a **RIGHT** and will utterly **crush** the hated **Pluddites**.

Their **huge numbers** will make them a *force of nature* (unstoppable).

Globacators are Dangerous People

They will **destroy** at least **4 major** traditional **institutions** –

a) Universities.

University lectures are going online. Why should parents pay \$50,000 a year for a Harvard education, when world class, rock star (free) profs give their lectures for free on the internet.

Many universities will go **bankrupt**, after **losing** their **fee base**.
“**Grading centers**” will spring up to grade homeworks and exams.

b) Paper Libraries.

Why go to a library when you can access all that you need online?

c) Paper Academic Publishers (Pluddites)

One of the main aims of the **FIMmers** is to **bankrupt** the **Pluddites**.

d) Dictatorships

Creating a **world wide educated middle class** will **dedictate** the world, i.e. bring down the last dictatorships on the planet.

Thus, the **Globacators** are ambitious.

Politics will be changed.

Near future politicians will be strongly motivated to promote free **globacation**, because they will be pushed by the **2 billion** hungry minds. **Globacation** can **pull poor peasants** out of their **economic shithole**.

G4) HOW MUCH LONGER CAN THE PLUDDITES SURVIVE?

The Death of the Paper Publishers

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This essay asks how much longer the pluddites (paper luddites, i.e. paper publishers) can survive, given that so many millions of people are uploading scanned paper books to file sharing sites, and downloading the e-versions of those books and spreading them electronically for free. A quiet war is going on between the FIMmers (Free Information Movement) members in their hundreds of millions and the pluddites. We live in an era of transition in publishing, in which everyone is asking “Why pay \$50 for a single paper book, when you can download 50,000 e-books for free?” Paper is dying, being killed off by electronic media. The question is “How much longer can the pluddites survive before they go the same way as papyrus and parchment, i.e. to the dustbin of history?”

A quiet war is going on today between the FIMmers (Free Information Movement) members, and the pluddites (paper luddites, aka paper publishers). The pluddites are feeling paranoid, because they sense their industry is dying, and are taking desperate measures to stamp out what they call

piracy, or more technically “copyright infringement” on the part of the FIMmers.

These FIMmers are scanning paper books and converting them into electronic form which can then be spread for free, which is having a huge impact on the dissemination of knowledge. In an attempt to stop this practice, the pluddites are taking “copyright infringers” to court, and forcing them to pay hefty fines, or even sent to prison, and in some extreme cases (e.g. Aaron Schwartz, seen as a martyr by the FIMmers) to suicide. The pluddites hope that harsher penalties will scare the FIMmers into ceasing their destruction of the paper publishing industry.

The FIMmers on the other hand, are growing increasingly hostile towards the pluddites because they see the latter as *“imprisoning knowledge, locking it away behind copyrighted paper books.”* The FIMmers can smell the new scent in the air, of free knowledge and its revolutionary educational and political consequences.

FIMmers argue that free knowledge will soon be readily available to the planet, as a result of planetary saturation of the use of internet phones priced at \$20 and below, which even the poorest Indian or African peasant can afford. Billions of people can then be educated to graduate level for free, simply by using their smart phones and accessing the free education sites on the internet. But of course, this will only be possible if the pluddites can be removed from the educational scene.

The FIMmers see the pluddites as albatrosses, blocking the progress towards a highly educated global culture. In the paper era, pluddites performed a useful service, by packaging and distributing knowledge at a profit. It is a business that still employs millions of people world wide, so of course they do not want to see their industry and hence their livelihoods disappear, but disappear they must if the vision of free global education is to become a reality. The two interests are a zero sum game. Only one of them will win.

It is my view, and of many others, that the pluddites are flogging a dead horse, in their attempts to punish the copyright infringers. The FIMmers want the information locked up in copyrighted paper books freed up and distributed freely. The FIMmers have the weapons and the number of people needed to kill off the pluddites.

The two principal weapons of the FIMmers are the scanner (that costs about \$100) and the file sharing sites on the internet. A FIMmer can scan a paper book, and convert its valuable contents into electronic form, and then upload those contents (now an “e-book”) to a file sharing site, where the rest of the world can download it for free. So many hundreds of millions of people are doing this that the days of the pluddites are numbered. They are doomed.

The FIMmers have recently been given an extra boost in their efforts by the appearance of pro FIMmer ideologies that see the pluddites as criminals, as immoral, as backward, as people who need to be removed to allow a morally

superior world to take shape. This essay is a contribution to this kind of thinking.

The strongest form that this ideology takes, that I can think of, is the following. *“Indirectly, the pluddites keep the world at war!”* This may seem at first sight a bit of a stretch, so let me unwrap it a bit, because it is the bottom line of a chain of reasoning, which goes as follows.

Advanced democracies do not go to war with each other. This is an established empirical fact. The voting populations of advanced democracies simply do not tolerate that their leaders go to war rather than negotiating solutions to their largely economic disputes. So, if all the countries of the world can be converted to advanced democracies, then the planet will be at peace, a noble goal of the FIMmers.

How to achieve this noble goal? Through education, through free education, through free education supplied on the internet, that is available to everyone, so that ANY person on the earth, can educate himself to the limit of his ability. When people become well educated, they join the middle class, acquire property, have political opinions, insist on the rule of law, and demand a vote in choosing their political leaders.

There is a branch of political science called “Transitology” which studies the transitions (switches) from one party dictatorships to multi-party democracies. Over 100

countries have made this switch over the past half century, so at a rate of about 2 countries per year.

The whole planet is democratizing. Democratization is an inherent part of modernization. Everyone wants to live an affluent life style, that modern science and technology offers. Two thirds of the 190+ countries today are already democracies, leaving only the more backward communist and African countries trailing in the rear. In about 40 years time, there won't be a single dictatorship left. The world will have been fully "dedictated."

The transition from one party dictatorship to multi-party democracy occurs, empirical study shows, when the standard of living exceeds the "democratic threshold" of \$6000-\$8000 per year per person. Interestingly, China is at the \$6000 level in 2014. So it will probably transition to democracy within a decade.

One can now see the chain of logic. Creating internet phone based free education to the whole planet, will create a world wide educated middle class, which in the dictatorship countries, will create overwhelming pressure on their one party governments to either be pushed out of power by a "people power" movement, as in the Philippines, or, as is more common, force a democratic faction within the ruling dictatorial party to break away and form a new democratic government, which then sets a date for true democratic elections, and brings in all the traditional democratic institutions, such as freedom of speech, the press, assembly, trade unions, rule of law, independent judiciary, etc.

Once the planet has completed this dedication process, the number of wars will reduce drastically, due to the rise of a massive world wide, highly educated middle class, which thinks, is informed, can reason, and most importantly, does not tolerate dictators, who have a horrible tendency to go to war all too readily.

Hence, free education leads to a peaceful world. By not having free education, populations in dictatorship countries remain poorly educated, hence not middle class, so do not push for democratic reform, so the dictators remain in power and continue to make wars.

Where the FIMmers gain their moral high ground is to point out that the continued existence of the pluddites indirectly keeps the world at war, since it is the pluddites who block the world from free education. To the FIMmers, the pluddites are criminals on a massive global scale, which explains why the FIMmers have such contempt for them.

So, the FIMmers are not just scanning papers and books and uploading them to file sharing sites for their own selfish reasons of financial convenience, they are now inspired by feelings of moral indignation against the pluddites and are motivated to play their part in destroying their industry in order to foster the creation of a world at peace, because it would be fully democratic world wide.

So, to get back to the question at the start of this essay, how many more years can the pluddites survive? My

guesstimate is that I would be surprised if most of them have not gone out of business within a decade. There is now so much momentum on the part of the FIMmers, and so much FIMmer moral contempt against the pluddites, that the latter cannot survive much longer. As mentioned above, “Why pay \$50 for a single paper book, when you can download 50,000 e-books and form your own private library, all for free?” Why indeed.

Researchers and professors are now insisting that their academic journals be “open source (i.e. freely viewable)” because they are fed up with the previous paper era system which had the researchers/professors do all the work, i.e. the research itself, the writing up of the research paper, its editing, its correction of the preprints, and then see the paper publishers put copyrights on their work and charge high fees for a paper product, none of which goes to the creators of the knowledge published.

In the electronic age, this system is merely exploitative, actually theft, and the professors/researchers are angry. Many now simply refuse to send their papers to non open source journals out of moral indignation. It has reached the stage in 2014, that pretty well all journal articles now are open source, i.e. freely available, so the FIMmers have won against the paper journal publishers. Those straggler journals that are not open source are being punished by the FIMmers and are dying, as they should.

The next major target of the FIMmers is the paper book publishing industry, and by books, I don't mean the fluff

that is not educational, I mean text books, containing the knowledge taught at universities. The pluddites traditionally had to invest a lot of money in publishing a paper book, so it is their custom to continue this practice by charging high prices, e.g. \$50 per text book or more. But this custom is being undermined by the FIMers, who see it as ridiculous that they have to pay \$50 for a *paper* book, when it should be available free in *electronic* form. FIMers also put moral pressure on researchers and professors to publish their own work electronically, and for free, since in the paper era, they only made a few hundred dollars per technical book they wrote anyway. They would not be losing much by cutting out the pluddite middle man exploiter.

The other main aim of the FIMers, is to reduce the exorbitant cost of today's university education. For example, it costs about \$60,000 a year for undergraduate education at Harvard University. Subjects that were traditionally taught only in class rooms (i.e. no lab work, no periods in hospitals, nor dentist chairs, etc) can now be taught for free on the internet, with professors uploading their courses, filmed either in their traditional class rooms, or (like myself) filmed in their homes, especially by retired professors (again like myself) who have more time to prepare and film such lectures. Retired professors can make a whole new career for themselves by filming their life's knowledge and uploading it to YouTube for free for the world, to educate it, to help create a world wide educated middle class, to help create a war free world.

This is what I do. I call myself an “ARCer” (an After Retirement Careerer) and a “globacator” (global educator). I have a large whiteboard in my living room, a tripod, a camcorder and felt tip pens by the hundreds. I make YouTube lecture videos in graduate level (Masters and PhD) Pure Math, and Math Physics for the planet. I have also made an electronic library in these two subjects, plus philosophy, computer theory, and the brain, that students can use with just a few clicks of their mouse.

Such an e-library allows what I call “resource-rich self-education.” Instead of using just one paper text book as in a traditional class room course, students who use an e-library can have dozens of works to consult, at the click of a mouse, which provides a much richer source of information, and hence a better education. Readers who would like to be given a taste of such resource-rich self-education could try hitting my website at <http://profhugodegaris.wordpress.com>

I would love to put links to the *contents* of *books* that anyone can download for free from the file sharing sites, but I don’t want to be harassed by the pluddites while they are still dying and paranoid, so I link only to uncopyrighted papers and books (e.g. by those authors who never found a pluddite to publish their work, or from authors whose copyright ran out, after 90 years). The rest of the links to (copyrighted) paper books go to amazon.com, which at least has information about the books, which is better than nothing.

I'm hoping that my example of spending the remaining decades of my life devoted to making YouTube lecture videos of my life's knowledge, and making e-libraries, will inspire other retired professors to do the same in their specialties, so that learners around the world can be educated in virtually any subject for free. To get credit for their study, "grading centers" need to be set up that grade the students homeworks and their exams. The cost of such grading would be far less than the \$60,000 a year at Harvard.

As free internet education and free information become increasingly available, traditional teaching universities will go bankrupt, as they lose their fee base. Most teaching professors will be fired and will have to change their career. Parents will be financially relieved to a large extent (depending on the study topic of their child) by having university level education made free and freely available on the internet.

Paper libraries will become ghost towns, as why should anyone have to make the effort to visit a paper library, when they can consult e-libraries in the convenience of their own living rooms.

Getting back to my own case, when it comes to paper books on a given topic, with its link to the book as advertized on amazon.com, I supply the author's name and the book's title. Anyone who knows how to access a file sharing site can take any title and download the contents of the book for free provided that the contents of the book are

available on the file sharing site, of course. But file sharing sites are vast now, containing tens of millions of books, so if a book is not too obscure, it can usually be downloaded (for free.)

Thus anyone can take any bibliography and download any book mentioned in it, by using a file sharing site. More politically active FIMmers, who feel morally scornful of the pluddites, scan books and upload them to the file sharing sites to increase the stock of knowledge to the world, and play their part in driving the pluddites into bankruptcy, since fewer and fewer people are stupid enough to pay \$50 for one paper book, instead of downloading free e-books from file sharing sites.

There are now so many hundreds of millions of people downloading e-books for their own education, that the pluddites have no chance of swatting them all, or even a tiny percentage of them. My advice to pluddites, especially if you are decades away from retirement, is to get out of your dying immoral profession, and do something that is beneficial for humanity, rather than being an albatross that keeps the world ignorant and indirectly at war.

To finish off this essay, I'd like to jump a bit into the future, and try to imagine, what will happen to the world, when 2 billion people, those with IQs capable of benefitting from traditional university education, get it into their heads that the only thing holding them back from pulling themselves out of their economic shithole (assuming they are living in some third world backwater) is the lack of free education,

then these 2 billion “hungry minds” will place enormous pressure on their political leaders to make education free.

They will be unstoppable, a “force of nature” due to their vast numbers. Politicians will be forced to listen and make education free (at least for theoretical subjects, that were traditionally taught exclusively in class rooms.) Free education will come to be seen increasingly as a right, now that scanners, file sharing sites, YouTube lecture videos, and dirt cheap internet phones are making it possible. We will see the rise of “rock star professors” who are the best teachers to the world. Teaching will not be the task of most professors in the future. They will be largely researchers at research universities. Class room teaching will become a relic, and most teaching will be done by the world’s best teachers, teaching millions of students via YouTube lecture videos.