

Technology Confronts the Etheric Realm

Constructing a New World Using the Fallen Etheric Forces

by Andrew Linnell

Who is this being that Rudolf Steiner calls Ahriman? The New View summer of 2009 issue contained a number of articles that tried to answer this question. Ahriman is, one could say, not only the Lord of Materialism but also the source of lies and illusion in our world, of all that wishes to control and deny true freedom to humanity. From research in these non-material realms of the spirit, Steiner could state that Ahriman is cognizant of Christ's presence in the Etheric (the realm of the forces of life) and is determined to prevent humanity from becoming aware of it. One way he can accomplish this is by creating a mirror image of the etheric accessible to us through technology by using fallen etheric forces. He hopes to tempt humanity into satisfying its spiritual impulses with this new *Maya*, this new illusion. For Humanity to successfully fulfill its destiny, according to Steiner, it must confront Ahriman and learn from this being what will be necessary to participate as co-creators of a future world-system that will follow the present Earth evolution. Yet, in order to maintain balance, as deeply as we penetrate into this fallen Etheric realm – what Steiner also referred to as *sub-nature* – we must also rise into super-nature (, the etheric and beyond into the creative source of nature).

A Future: The year is 2020. As yet another oil-producing country's reserves dry up, oil prices top \$600/barrel. World leaders urge businesses to allow their employees to work from home via the internet's expanding virtual reality applications. Tax reliefs are offered for what was once expensive 3D, high fidelity, virtual reality body suits (VRBS) that have essentially replaced last decade's laptops. Declining prices, thanks to nanotechnology, have made these hot commodities during last holiday's shopping season. New models with Touch-Anywhere™ Foglet technology sold out quickly. Expected later this year in high-end models is technology that offers the ability to blend 256 odors, up from merely 16, for an incredible sense immersion experience. One company, JON, which offers adult MP7s for their boutique men's and women's VRBS, exceeded expectations. Many public schools in the developed world now are experimenting with holding virtual classrooms enabled by PREVENT (PRivate Education's Virtual Experience NeTwork) and Google's well respected Metropolitan Area Youth Advancement Association (MAYAA). These exciting times are not without some detractors who claim that obesity, an illness that mysteriously began to affect children about 7 years ago, seems to be due to prolonged exposure to the nano-particles used in VRBS but lack of corroborative scientific studies means the jury is still out on this. One recent industry-funded study showed no viruses or bacteria were found anywhere in every VRBS studied. Apparently these micro-organism pests don't like nano-particles. Some mothers of traditional families decry that their children prefer playing in the virtual playgrounds of MAYAA, which is now available 24 hours per day on the internet, over playing in their backyard. However, most child psychologists agree that MAYAA provides a safe and healthy environment for children, one free of infectious diseases where all children from all parts of the world can play and interact free of any hostilities arising from race, ethnicity, religion, or sex. Since bullying detection software was deployed two years ago, nearly all complaints about MAYAA by educators have ceased.

Can this scenario be possible? It is certainly as possible as the future portrayed in Ray Kurzweil's article *Reinventing Humanity: The Future of Man-Machine Intelligence*^j where he states

"The Singularityⁱⁱ is a future period during which the pace of technological change will be so fast and far-reaching that human existence on this planet will be irreversibly altered. We will combine our brain power—the knowledge, skills, and personality quirks that make us human—with our computer power in order to think, reason, communicate, and create in ways we can scarcely even contemplate today. This merger of man and machine, coupled with the sudden explosion in machine intelligence and rapid innovation in gene research and nanotechnology, will result in a world where there is no distinction between the biological and the mechanical, or between physical and virtual reality. These technological revolutions will allow us to transcend our frail bodies with all their limitations. Illness, as we know it, will be eradicated. Through the use of nanotechnology, we will be able to manufacture almost any physical product upon demand, world hunger and poverty will be solved, and pollution will vanish. Human existence will undergo a quantum leap in evolution. We will be able to live as long as we choose. The coming into being of such a world is, in essence, the Singularity."

Ray Kurzweil's analysis of technological trends predicts this Singularity will come as soon as the year 2045. If so, this Kurzweilian frontier is so close in time and so far beyond the concerns of merely "The Internet" that for some to worry about the Internet's effects on future lifeⁱⁱⁱ is like being concerned about the weather for tomorrow's picnic when your house is on fire. The concern should rather be about Genetics, Nanotechnology, and Robotics, what Ray Kurzweil calls 'GNR'. Our response should be, not actions for stopping this research, but on permeating it with a moral understanding that can establish what is right for healthy human development.

Nanotechnology is already in use in many products from automotive parts to skin care. The clothing industry is going through a revolution with fabrics being coated with various nanotech polymers. For reasons still not totally understood^{iv}, microorganisms cannot survive on fabrics treated with a nanotech polymer. This allows clothes to 'shake off' sweat and dirt. No more dust mites within bedding. No more molds growing on house paints. The problem is that the reasons for life forms dying in the presence of nanoparticles are not well understood. More to the point, it is not understood because life is not understood. And introducing nanoparticles into our environment seems as foolish as it was to use naturally-occurring asbestos for heat absorption during the 1940s to 1970s. In essence, this industry, like the asbestos industry before it, enjoys no regulations, no environmental impact studies, and no need for studies on long term effects. It does appear that when nanotechnology confronts life, life recedes.

The giant agricultural company Monsanto has genetically modified many crops to advance its concept of 'Systemic Agriculture'. They offer genetically modified crops that are not harmed by their weed killer, Round-Up™. This way, after the crops are planted, the farmer can spray his fields to destroy all weeds while leaving his crops unharmed. This makes the farmer's life a lot easier and, so Monsanto claims, wealthier. They point out that with no weeding, there is much less labor costs and coupling this with greater yields means lots more profits. The gene manipulation makes plants sterile or, if not sterile, the

newly inserted trait dissipates from the gene pool in a few generations. This means that future seeds produced from plants treated in this way will either produce no seed or they will not germinate. Monsanto then used this as an economic advantage because farmers must buy seed from them every year instead of keeping seed from their previous harvest for the next growing season. But all is not well: in 2005, pigweed modified itself to become tolerant to Round-Up™. Now farmers in North Carolina, USA, are abandoning fields where the resurgent pigweed has overwhelmed their crops. Human's everyday consciousness "understands" objects by 'killing' them; that is, by tearing them apart. Yet Monsanto must realize by now that there are some other forces that are working from a higher level than genetics. But, if they do, they would certainly not publish this. They may now be striving to find ways to manipulate what Steiner called the etheric, or the life forces, present not only in plants but also in the Animal and Human beings. No doubt great riches await the one who can master life forces!

Nanotechnology, manipulating matter on a molecular level, "promises the tools to rebuild the physical world, our bodies, and our brains, molecular fragment by molecular fragment and potentially atom by atom."^v It is expected that we will be able to expand our minds through the merger of biological and nonbiological intelligence engineered through the use of nano-robots, or 'nanobots'. It is claimed that within the next 25 years we will learn how to augment our 100 trillion interneuronal connections with high speed connections to computers implanted within our bodies. Several companies, such as Cyberkinetics^{vi}, are already claiming to show how paraplegics with such implants can, using brain waves and eyebrows, control external robots to accomplish simple housework and eating. Eventually, these scientists expect, our brain will be able to directly access not only the internet but also millions of highly sophisticated computers to nearly-instantly solve complicated problems. At that time, our brain itself will be part of this future wireless network, this future internet.

Nanomedicine is the combination of nanotechnology and medicine. It seeks

- To quantitatively characterize the molecular-scale components, or nanomachinery, of living cells
- To precisely control and manipulate these molecular assemblies in living cells to improve human health

Through the use of nanobots, this field of medicine hopes to be able to deliver drugs directly to where they are needed rather than subjecting the entire body to their cell-destroying poison. Chemotherapy could then target just the tumor and not affect the entire body as it does today. Not only would nanobots be capable of destroying cancer cells and pathogens but they will be able to alter DNA. Expectant parents will be able to have deformities altered before they manifest. Eventually it will become the norm to alter embryo genes to ensure certain desired traits while undesirable ones are eliminated. One researcher, Robert Freitas, has estimated that eliminating 50% of medically preventable conditions would extend human life expectancy to 150 years. Then, if we were able to prevent 99% of naturally occurring medical problems, we'd live to be more than 1,000 years old. One can see by the articulation of its seemingly noble goals that this field lacks any real understanding of the forces of life itself and how our life body, or as Steiner called it, our etheric body, maintains the integrity of the human body, how it is the mediator between our physical body and our soul.

Will we achieve an immortality on Earth that binds us to the material world? Or will we gain a profound understanding of the Etheric realm as it supports the cycles of life and death on earth? Even to countenance such thoughts clearly places human development along a path that leads far into the future but that future, our destiny, reaches now into our present times. We come to the realization that the 'Battle for the Etheric' is now being waged!

British scientist and Anthroposophist, Nick Thomas, claims in *The Battle for the Etheric Realm*^{vii} that this is indeed underway and most of the world is comfortably sleeping through it. As early as 1907, Thomas notes, Steiner had predicted this battle would come in our time. Thomas sees an increasing inflexibility of the Etheric body, pointing to various symptoms, such as our habit of stereotyping, our lazy thinking where we allow others, especially the media, to think for us, the use of meaningless phrases and the one-sided approaches taken by politicians, religious fanatics and even medical practitioners and scientists. Thomas sees two main causes: stopping short of the truth and being satisfied with a limited model (most of science today requires the creation of models to explain the proposed theory. The model should work for almost all known data and also be able to predict new data) and aligning our lives with mechanical repetitions rather than living rhythms. He states that the physical plane, such as our environment, is where the problems arising from these causes will manifest. Wherever untruths prevail problems eventually arise in the physical world. Thus, he claims, faithfulness to truth is an antidote to Ahriman's^{viii} attack on the etheric through materialism. Ahriman endeavors to generate lies and untruths that seem plausible and this manifest strongly in the various fields of science.

Steiner gave many helpful thoughts and imaginations that can help us to understand what is at stake here. When people lie, it leaves its imprint in the Etheric world. This is because it is our soul that lies. The basis of the soul is what spiritual science calls the 'astral body' wherein our feelings, desires, passions, and the seat of our normal consciousness exist. The etheric body mediates, as it were, between the human astral body and the physical body. When the astral body creates lies, this is impressed upon the etheric body which is then altered. This, one could say, becomes a darkening of the etheric and that darkened part blocks proper mediation of the etheric body between the soul and the physical body. In many ways that cannot be gone into here, this leads to problems in the physical body itself, including health problems. If we imagine the etheric world as a fluid world of streaming life forces, then that which becomes darkened in it could be likened to a thickening of its streaming nature such that eventually it coagulates, hardens, and precipitates out of the Etheric realm (Steiner referred to the 'sub-nature' of electricity, magnetism and the nuclear force as being constituted of this fallen, or darkened, etheric 'substance'). Human beings have a cosmic responsibility to consciously deal with these forces of sub-nature, towards their redemption. This is not something we can avoid. How we deal with sub-nature will make all the difference for the future.

Following on Steiner's work, Spiritual Science reveals that the soul activity of *thinking* actually takes place in the etheric body. Not in the brain? No, the brain is to consciousness what the eyes are to seeing. It is one of Ahriman's lies that the brain thinks. Rather, the soul impresses thoughts onto the brain so that this soul can be conscious of its own thoughts. In sharp contrast is Ray Kurzweil's concept that "Most of the intelligence of our civilization will ultimately be non-biological, which by the end of this century will be trillions of trillions of times more powerful than human intelligence"? Can a bridge between Kurzweilians and Spiritual Scientists ever be formed? A start can be found in that, according to Steiner, the substance of thought is 'coagulated' electricity^{ix} placing thought between the etheric force of light and the fallen etheric force of light, namely electricity. Going deeper, Steiner describes how, from the perspective of the spirit, atoms are also coagulated electricity.^x (Have scientists already found this with their quarks and leptons?)

But deeper harmonizing problems arise when scientists ascribe soul qualities to machines. Francis Crick, a Nobel Prize winner, writes in his book *The Astonishing Hypothesis: The Scientific Search for the Soul* (1994), “[Our] joys and sorrows, memories, ambitions, sense of personal identity and free will [are] nothing more than the behavior of a vast assembly of nerve cells and their associated molecules”. And many scientists merely dismiss anything spiritual as does Marvin Minsky, MIT, who scoffs at the spiritual with statements such as “Many thinkers firmly maintain that machines will never have thoughts like ours, because no matter how we build them, they’ll always lack some vital ingredient. They call this essence by various names—like sentience, consciousness, spirit, or soul. Philosophers write entire books to prove that, because of this deficiency, machines can never feel or understand the sorts of things that people do. However, every proof in each of those books is flawed by assuming, in one way or another, the thing that it purports to prove—the existence of some magical spark that has no detectable properties. I have no patience with such arguments. We should not be searching for any single missing part”. It is the author’s opinion that the more consciousness and the brain are studied and reverse engineered^{xi}, the more the truth of Spiritual Science will be realized. But ways will also be found to cover this truth up with inaccurate brain models.

Many people on a spiritual path hope that the good gods will swoop down and wipe out all the evil doers (usually scientists are not included in their list of evil doers) so that we can all live peaceful, moral, prosperous, and comfortable lives that will be the same tomorrow as they are today. Such a view differs little from those of Bible fundamentalists who see a time coming when Jesus will swoop down, riding on a cloud, to establish his kingdom here on the earth after smiting all his enemies. Life will be good afterwards; all our needs will be provided for us (perhaps our sports teams will always win). It is our egoism that envisions that we are good and that the evil is “out there” so that we will be part of the chosen ones for the rewarding good life to follow.

No, it would be a great evil that could make everyone’s life prosperous and easy and make time to stand still. Humanity’s deepest mission is to discover true Freedom and Love. To accomplish that, we are a mixture of Heaven and Earth, of Light and Dark where we have to understand these differences and eventually make conscious choices. Because we are this God-intended mixture, we must remain in balance as our consciousness penetrates sub-nature with a rise of consciousness into super-nature.

From the Sub-Nature realm forces will more and more work into human beings, interacting with our will-forces (those forces that enable us to act in the world and do things) in such a way that, if we are not conscious, they will weaken us so that we lack the strength for dealing properly with what is to come. This realm, with its electrical, magnetic, and nuclear forces – these fallen etheric forces – is so powerful with terrifying destructive powers that Steiner remarked how he hoped humanity’s moral character would be strong enough to deal particularly with nuclear forces when they were discovered. When dealing with these Sub-Nature forces and beings, our moral development is called upon. To deal with these beings and, in fact the whole elemental world, we need enhanced thinking. Instead of separating things into their parts to understand them, enhanced thinking seeks how things fit together into wholes. Such enhanced thinking uses rhythms for insights – a form of enlivening where we “get out of our heads.” As much as we may add non-biological assistance to our thinking, so must we enhance our thinking where our hearts begin to participate in our thinking. It is not that hearts *will* begin to think; rather that hearts *must* begin to think if humanity is to be saved from diving head-first into Sub-Nature.

Of course, for those intent on so-called reverse engineering of the brain (to build a thinking machine that functions as if it were human), this 'enhanced' thinking is nonsense. Yet I expect that the pursuit of building a 'thinking' machine will actually lead to the realization that true human thinking has life properties that cannot be ascribed to a machine. Only the re-execution of dead thought process is possible for a machine.

Many may feel that in order to develop heart-thinking they must withdraw from technology and from those who use it. But what would that bring to the rest of humanity who have to struggle with these technological forces?. Surely we should try to enter all these fields where IBM, Google, Genetech et. al. exist and discover the true nature of the forces at work and then find healthy and therapeutic responses. And surely the arts have an important part to play here; because it is through the arts that deep truths can be communicated to the wider human community.

Spiritual Science says that in the process of evolution, human beings will one day co-create with spiritual hierarchies. Oddly many scientists seem to strongly feel that "we are gods" today. At Carnegie Mellon University's Robotics Institute, Professor Hans Moravec claims that, "no matter how successfully we fine-tune our DNA-based biology, biology will never be able to match what we will be able to engineer once we fully understand life's principles of operation." In other words, these scientists believe that we will always be inferior to what we will be able to engineer! Ray Kurzweil predicts that the nanotechnology revolution will enable us to redesign and rebuild – molecule by molecule – our bodies and brains and the world with which we interact, going far beyond the "limitations" of biology.

When one reads Ray Kurzweil's article in the Futurist^{xiii}, it sounds as if he could foresee what Steiner saw but rendered it all into a materialistic perspective! Ray speaks eloquently of increasing our consciousness and unleashing our imagination. He even cautions that a heightened moral quality is required so that our inventions don't become our nightmare. In the following Q&A session, he sounds aspiring thoughts but without any obvious knowledge of the spirit:

Q: Where does God fit into the Singularity?

A: Although the different religious traditions have somewhat different conceptions of God, the common thread is that God represents unlimited—infinite—levels of intelligence, knowledge, creativity, beauty, and love. As systems evolve—through biology and technology—we find that they become more complex, more intelligent and more knowledgeable. They become more intricate and more beautiful, more capable of higher emotions such as love. So they grow exponentially in intelligence, knowledge, creativity, beauty, and love, all of the qualities people ascribe to God without limit. Although evolution does not reach a literally infinite level of these attributes, it does accelerate towards ever greater levels, so we can view evolution as a spiritual process, moving ever closer to this ideal. The Singularity will represent an explosion of these higher values of complexity.

Q: So are you trying to play God?

A: Actually, I'm trying to play a human. I'm trying to do what humans do well, which is to solve problems.

Q: But will we still be human after all these changes?

A: That depends on how you define human. Some observers define human based on our limitations. I prefer to define us as the species that seeks—and succeeds—in going beyond our limitations.

Like most scientists, Ray expects to find that our memory is somehow encoded in our brains. Remembrances, however, cannot be in the physical body because all physical matter changes within 6 or 7 years and yet our memories remain. We require an etheric body for memory of our life. Steiner pointed out that the physical is a spatial body; the etheric is a time body. The now well documented cases of those who have undergone near-death experiences, tell how many witnessed a panorama of their life. As a 'time body', the etheric reveals one's life not like a movie which depends on sequences through time, but rather as a panorama; all events completely present to be surveyed.

Evidence of the etheric realm clearly confronts us today. But Ahriman does not wish for us to realize it. Steiner placed a further concern before us. He stated that elemental spirits who reside in the workings and streamings of the etheric realm are at a point in their development when they must align with either humans or with Ahrimanic beings. [Whilst for some these concepts of 'beings' is challenging, it might help to see them as 'points of consciousness' - Editor] Time is growing desperately short now for humanity to "see" the etheric realm and acknowledge the elemental beings therein. Without this occurring, these elemental beings will align with the Ahrimanic beings thereby making our future tasks that much more difficult. It is our task not only to confront Ahriman, but also to learn from him what we will need in order to create the proper future form rather than the one Ahriman intends. One might reply "why do I care? I won't be around then anyway?" Such a perspective not only arises from immortality, it also dooms one if reincarnation and karma are correct.

Virtual reality is already here but, just as the Internet during the 80s awaited its economic justification, so too does VR await an economic justification to make it commonplace. It truly offers an illusion of reality – a modern day Maya. If we gain a true access to the Etheric Realm, then that can awaken us to the Maya we live within here on Earth between birth and death. As spiritual beings before birth, our thinking was alive. In a way, our physical body is the tomb of our thinking from before birth. Our everyday consciousness involves primarily dead thinking, mere repetition of prior thinking and pattern recognition. A new Living Thinking which involves the heart has become possible in our time. I would put it like this: Computer programming is to everyday consciousness what everyday consciousness is to Living Thinking.

Some spiritual scientists are researching the possibilities of etheric technology. This technology will be revealed in the reflection of love in the etheric body. When love shines into the etheric realm, then its reflection, will reveal wonders of etheric technology. As the moon reflects the sun, so does the etheric reflect the light of the astral body. When love shines from the soul, then the etheric body will reveal its treasures. Like memory, love is not some brain function that we can program into a machine.

Ahriman is creating a mirror image in Sub-Nature of the true, pure, etheric realm in Super-Nature. As humans, we must venture into this Sub-Nature but in balance with our venturing into Super-Nature^{xiii}. Likewise, as much as we venture into Super-Nature, so must we venture into Sub-Nature. This is our mission. Through love we remain integral as we "spread" into Sub-Nature and Super-Nature.

What evidence is there that Ahriman is building an image of the etheric in Sub-Nature? Already one can essentially record all of one's life. With virtual reality conferencing, we can be experienced in multiple places at the same time. Like the etheric, electricity's alternating current is in constant motion. Even the name for the Internet's web links is called *Ethernet*.

~~Just as the Etheric realm is the first level of spiritual experience, As further evidence of Ahriman's attempt to turn humans away from the etheric realm, we also find such organisations as 'Trans-Spirit', which claims ~~ing~~ to be a natural science branch where researchers seek to achieve a complete scientific understanding of spiritual phenomena. Then ~~and~~, based on that understanding, to develop techniques and technologies for inducing 'spiritual experiences' at will. Trans-Spirit aims to focus almost exclusively on the physical mechanisms that predispose human beings to believe and behave according to religious and spiritual norms. ~~and here Andrew, you should give an opinion of this approach...~~" ^{xiv} ~~[Andrew: Sorry, but I had intended to raise this with you but somehow overlooked this. It is not clear what point you are making by speaking about Trans Spirit. If I do indeed understand correctly that you point to them as a misleading organisation, then perhaps, if you still wish to include the reference to them, it might help if you re-wrote this part; I have offered one way already as a suggestion in the text.]~~~~

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Steiner stated that in the near future, everyone will be born with a 'second' being by his side like a guardian angel. Only this being, unlike a guardian angel, will whisper to us of the foolishness of those who speak of the reality of a spiritual world.^{xv} Eventually this being may be "invited in" if we begin, as suggested by some scientists, to insert into a newborn's brain computer circuitry.

Why is Ahriman doing this? Obviously, he is preparing for his own incarnation – after which his influence in Human affairs would increase enormously – and of which Steiner offered many insights (see also *New View*, Summer 2009). The closer he can attach these beings to us, the more successful will be his incarnation to convince humans to abandon their search and belief in the spirit and to join him in a solely material existence. From within the ether-body, he can then separate the soul-spirit and the physical. Ahriman seeks to make the human intellect similar to his own: a cold, soulless cosmic impulse which equates prosperity with goodness and claims that matter is the sole reality.^{xvi}

"The ether-body must be quickened in order that the human being may be able to take his rightful stand, fully cognizant of the nature of the being who stands at his side. If he does not understand the nature of this second being, he will be spellbound by him, fettered to him. ... We, in our age, must get the better of Ahriman by enriching the Ego with the wisdom that can be born only from knowledge and investigation of the spiritual world, i.e. from Spiritual Science.

In his verse entitled *Equanimity for the Future*, Rudolf Steiner offered these words:

"We must eradicate from the soul all fear and terror of what comes towards Man out of the future. We must acquire serenity in all feelings and sensations about the future.

We must look forward with absolute equanimity to everything that may come. And we must think only that whatever comes is given to us by a world-directive full of wisdom.

It is part of what we must learn in this age, namely, to live out of pure trust, without any security in existence - trust in the ever-present help of the spiritual world.

Truly, nothing else will do if our courage is not to fail us.”

We have seen that the question of Man’s relationship to the Machine, which began with the Industrial Revolution, now urgently confronts our changing sense of what is Humanity. Materialism has attempted to reduce the Human to a machine. It presents to us the untruth that when the brain has been reversed-engineered, then machines will be able to become humans; that is, spiritual machines. This voice of technology mocks spiritual explanations while it offers to our spiritual aspirations an imitation of the etheric within virtual reality so that we lack the will to seek the truth within the Etheric. Steiner revealed a profound development within this realm when he showed that the Christ was now active and could be ‘seen’ in this realm. This is actually a confrontation between Ahriman and Christ that is played out in the human soul with the Etheric going to the victor. This confrontation has a purpose to enable Humanity to find not only the strength but also the wisdom and the love to properly fulfill the destiny of both the Human and the Earth. Only through an honest Spiritual Science will we find the right relationship of Man and Machine. This will be a long, difficult, and painful process. However:

“the evil brought by the Ahrimanic Spirits can be shed in the course of karma. The good Spirits made possible the working of karma to the end that the Ahrimanic powers might be resisted and the evil made good.”^{xvii}

Andrew Linnell works as a computer scientist and lecturer and lives in Hudson, Massachusetts, USA. He will also be one of the speakers at the New View conference, Technology and the Human Spirit, at Rudolf Steiner House in London, April 24th 2010 (for more details see page ...).

ⁱ The Futurist, March-April 2006, www.wfs.org, pg. 39

ⁱⁱ A pre-eminent scientist and inventor, recipient of the 1999 National Medal of Technology, and inducted into the National Inventors Hall of Fame, Ray Kurzweil is the author of several futurology books including *The Singularity is Near: When Humans Transcend Biology* (Viking, 2005), *Fantastic Voyage: Live Long Enough to Live Forever*, and *The Age of Spiritual Machines* (1999)

ⁱⁱⁱ *The Being of the Internet*, Sergei Prokofieff, Pacifica Journal, Number 29, 2006

^{iv} Discover Magazine, Technology / Materials Science, *Can we interest you in a suit that banishes dirt, sweat, and germs, sir?*, Wendy Marston, January 2000 issue

^v The Futurist, March-April 2006, www.wfs.org, pg. 42

^{vi} <http://www.cyberkineticsinc.com/>

^{vii} *The Battle for the Etheric*, Nick Thomas, Temple Lodge Press, 2006

^{viii} Ahriman is an ancient Persian term for the Prince of Darkness. In the Bible, Lucifer, which means the Light Bearer, is named as the tempter of Adam and Eve. Lucifer desires to lure humanity away from the earth into a soul-spiritual realm where his egoism is worshipped. Ahriman desires to chain humanity to the earth by denying the spirit and thus forsaking any future spiritual role.

^{ix} *The Work of Secret Societies in the World, The Atom as Coagulated Electricity*, Rudolf Steiner, December 23, 1904, GA 93

^x *ibid*

^{xi} Reverse engineering is a process whereby the technological principles of a device, or in this case the brain, are understood through analysis of its structure, function, and operation sufficiently that a copy of the device (or brain) could be built. It often involves taking that device apart and analyzing its workings in detail so that one can make a new device that does the same thing without utilizing any physical part of the original.

^{xii} The Futurist, March-April 2006, www.wfs.org.

^{xiii} *From Nature to Sub-Nature*, Letters to the Members, Rudolf Steiner, GA26

^{xiv} *Trans-Spirit: Religion, Spirituality and Transhumanism*, Journal of Evolution and Technology, 2005 Vol. 14 pgs 39-53, Michael LaTorra, New Mexico State University

^{xv} *The Balance in the World and Man, Lucifer and Ahriman*, Lecture I , 20th November, 1914, Dornach, GA0158

^{xvi} *The Deed of Christ and the Opposing Spiritual Powers*, Rudolf Steiner

^{xvii} *The World-thoughts In The Working Of Michael And In The Working Of Ahriman*, Rudolf Steiner

