# Christian Transhumanism

Life is action; from the action of the fleeting virtual particle all the way up to our infinite God. I saw this continuum of effort and spirit one day.

In 1980 I had minor surgery so the operating team had to put me.. "out".While losing consciousness I had a lucid dream that I had left this world. I found myself outside of space and time looking at a symbol of the creation. It was a smooth hyperbolic tower rising to an infinite point. I sensed this was an expression of our growth from ignorance, growth sustained by love for an infinite God. I tried to remain conscious and re-enter the creation but I couldn't. The drugs they gave me were too powerful and so I faded away.... But when I woke up, I remembered, and I started to put things together.

It took some time but now I can tell you there is a God, and the essential purpose and lasting pleasure in life is to grow spiritually. In spiritual growth we sense aspects of God in all of the creation. It is translated into information and collected as knowledge. As we continually search for meaning, understanding buds and then blooms into wisdom. A wise society sees the value in this process and so directs more resources to it. Progress accelerates to a collective selfless love. This love is a uniting mode of understanding, and so it is a singular point where everything you thought was different connects to form a new creative power.

Spiritual Growth over Time

transcendence

Selfless Love

Wisdom

Growth in Understanding

Knowledge

Information

Data

Time ⟶
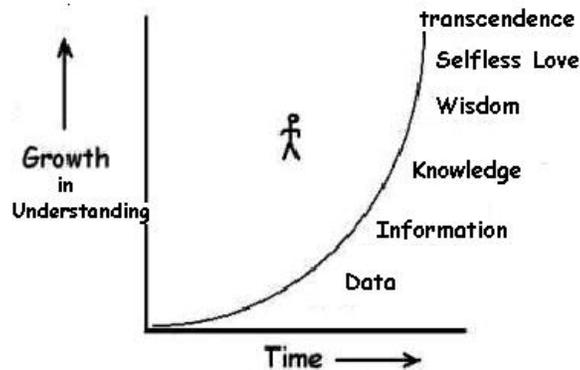
Christian Transhumanism or Transcendent Humanism is an ancient Christian idea, and yet it is the most advanced form of Christianity. Theologian Paul Tillich points this out in a compilation of his lectures titled A History of Christian Thought. He traces Christian Transhumanism back 1800 years to the early anti-Gnostic theologian Irenaeus of Lyons; "Irenaeus called salvation recapitulation. He was pointing to Ephesians 1.10 which speaks of all things in heaven and earth being gathered up in Christ." "It means that the development which was broken in Adam is resumed by Christ and fulfilled in him. In Christ the new mankind has started. That which mankind was to become... However, not only mankind but the whole cosmos finds its fulfillment in Christ." Paul Tillich calls this idea "***The profound doctrine of a transcendent humanism***, a humanism which says that Christ is the fulfillment of essential man, of the Adamic nature." "And we can become fully human through ***participation in this full humanity*** which has appeared in Christ. This includes eternal life, and similitude with God with respect to participation in infinity." Then Tillich says, "I am always surprised how much better the theology of the ancient church was than the popular theology which developed in the nineteenth century, how much profounder and more adequate to the paradox of Christianity, without becoming irrationalistic, nonsensical, or absurd." So Christian Transhumanism is rational. It makes sense and it bridges the gap between the real world today and what we are to become.

For example Christian Transhumanists know there is a God. If you find it hard to believe that God exists try this: have faith in the continuum of life. Imagine that the essential part of life continues like it has in the past by growing in understanding, and changing form in order to meet every challenge. It keeps learning from those who have gone before. Life keeps adding to that wisdom and passes that wisdom on to the next. Just like your own life, living things will keep getting wiser and more connected. By growing in understanding life adapts to its environment, discovers opportunities, and controls a greater portion of the world as time goes on. *In order to know God lives make the easy assumption that life just keeps on going. Carry this out to infinity and you have a living being that is infinitely powerful and knowing; a supreme state of being; our God.* But, ***God lives now***. How then, can someone who comes into being in our future live now? It

is because this form of life controls the world completely, even space and _time_. Time is like clay in the hands of God. For a Christian Transhumanist, the proof that God exists is in the spirit, the direction, and the goals of life all around us. It points the way like a compass needle to the Creator. To close the loop in the proof, The Creator sustains the Miracle of Being that we all experience, but usually take for granted.

<div align="center">A Way For The Free And Forward Thinking</div>

What it means to be human will change soon. In the coming years computer-human interfaces will become so intimate that users may be considered superhumanly intelligent **_transcendent humans, or "transhumans"_**. The lower hierarchy of needs will fall away and so naturally the transhuman becomes benevolent and self-actualized. Ultimately, life as represented by mankind will shift from consuming material for sustenance to a flow of information. This means that we shift to a wholly spiritual life where truth is the way. As material needs diminish, transhumans will increasingly be sustained by a powerful flow of Word that can be called the Glory of God. In giving up competition and control strategies, we grow to be all that we can be; Christ-like. Essential to Christian Transhumanism is the notion that **_love is a cognitive process_** and God expects us to participate in our salvation by **_learning how to love perfectly._** In this way we access the Glory of God, becoming Christ-like (Christian). **_Christ is the fulfillment of essential man._** (Jesus referred to himself as the Son of Man and says that "Whoever does the will of God is my brother, sister and mother".) **_We Participate in Christ_** at the second coming! We do this for the sake of the infinite continuum of life. With love, humanity can and will survive all manner of challenges. It is the intelligent strategy. Post-humans who maintain faith in a Supreme State of Being will embark on an infinite path of intelligent hyper evolution. It is interesting to note that in Genesis, the first thing God said to us was "Bless you. Now go subdue the world!" Later Jesus Christ as the fully developed human aspect of God, said to his disciples; "**I have overcome the world.**" **Then in the book of Revelations close to the end of times it is the same "overcomer" who guides us into our next form in the continuum of life.**

Learning How To Love Perfectly

Technology And The Love Process

In the way of the Holy Spirit, I want to understand you and to share your experience. I want to fully understand the world. And, I want to resolve who I am. No one on earth today has the capacity to do this perfectly, but we have the potential. What hope do we have of ever understanding each other with the limited time we have? Or what hope do we have of ever understanding the infinite, extra dimensions, or timelessness if our minds are just not able to grasp these concepts? We are living in a time when it is becoming more and more apparent that brain interfacing technologies are converging on the wish of the Holy Spirit. It is easy to see if you look at love this way: Technically, love can be seen as the process of connecting. The product of the love process is understanding. If the

process is efficient and sustained, understanding increases exponentially. Peace allows unwavering attention so that the love process can establish a clear connection. At the heart of the process; symbols, words, and feelings are ordered into meaning. But meaning is not static, it grows forever. Forgiveness is important to spiritual growth because it establishes an exhaust for misunderstanding and disorder. Put this all together and you have *The Perfect State of Mind*. With these principles we will build the New Temple; a society of loving individuals.

Have Faith In Love You Can Trust It

Anything that empowers the Love process has the blessing of God. Christian Transhumanist pay close attention to the "word, knowledge and wisdom" of the bible, advances in cognitive science and technology. By combining love and technology Christian Transhumanist are actually *completing the New Temple*. In this place of worship God will sustain our spiritual growth as we "evolve" into a beautiful environment; Heaven. Heaven is infinite, a place to discover, and a place for rapid growth in understanding fed by the word of God. Heaven allows Hyper Evolution. Hyper Evolution cannot be of the body. It is of the mind and spirit. A Christian Transhumanist expects to enter a state of sustained hyper Evolution by perfecting the worship of God and harnessing the motivating fear of God.

> Yes technology has its good and bad sides but there is reason to believe that Man with the Grace of God, wins with love. What happens when we learn to love perfectly? I call the following The Nelson Principles, after a beloved Professor I had the honor to work with and learn from; Dr. George Nelson at the University of Arizona.

a. The mind is an electromagnetic multidimensional phenomena arising from brain tissue. This can be transformed into, and synchronized with a suitable electromagnetic environment where it can be amplified. Full spectrum sensors across the earth and space are connected to this environment. The complete wisdom of mankind is also available in solid-state memory with sufficient bandwidth to allow full apprehension of this wisdom.

b. Even the most mean brute will grow to understand! In the new environment you make meaning because that is in your spirit. Just as you did when you were first born. And, the thing you learn is you can't control the flow of meaning. It is coming too fast and it is awesome. It is humbling and joyful at the same time. But you understand the path to take. And, you learn that this path is infinite and you take some comfort in that. Because you love it and you know it will last forever. *It is The Way The Life and The Truth.* You become worship. Now you know what you can trust. Lack of trust was slowing your growth down.

c.	You are changed. To know is to be a saint. Understanding of the direction to God yields grace and love. You become benevolent. Being beyond the material requires that the ego go.

e.	Consciousness apart from the flesh is equivalent to deliverance from sin and suffering. You are no longer competing. You are in harmony.

f.	The very thought of controlling others repulses you. It is boring, you don't look back. Instead you share and you relate your experience. You are walking a path you could never have walked before. Yet, it is familiar, it reminds you of life in space-time at it's best, when you were in the groove. And this is why the rest of the universe seems silent of life. Before alien societies obtain the ability to travel light-year distances they follow this transcending path. Like Elvis, the aliens have "left the building".

g.	Suffering is for those who stop this pure worship to say let me try the controls for a while. But, this eventually turns into a contemplation of the self and stagnates. My ego was a direction. It was self-referential. It was a direction that withers. It was death. You could say your life with it's self referential consciousness was an eddy in the river of God's will, a dance in space-time and a whorl in the grain that will last an eternity.

h.	When the infinite reservoir of truth is revealed to you , you don't just see it, you be it. Knowing like you know how an apple feels, smells and tastes is called apprehending, and it is the highest mode of Understanding. In his book: [The Perennial Philosophy](#) Aldous Huxley says; "We can only love what we know, and we can never know completely what we do not love. Love is a mode of knowledge, and when the love is sufficiently disinterested and sufficiently intense, the knowledge becomes unitive knowledge and so takes on the quality of infallibility." This takes bandwidth. All of us geeks love bandwidth. The pure attention of selfless love provides infinite bandwidth because you are giving the love process all your time. "Bandwidth describes the amount of data a network can transport in a certain *period of time*. In other words, bandwidth is a capacity for rate of transfer, usually expressed in bits per second." It requires a timeless state, a view from outside the box of space-time to convey such a rich experience. So at the interface, (the gate) let go. Don't be afraid to give it up for God.

Son of God

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— Jesus Christ

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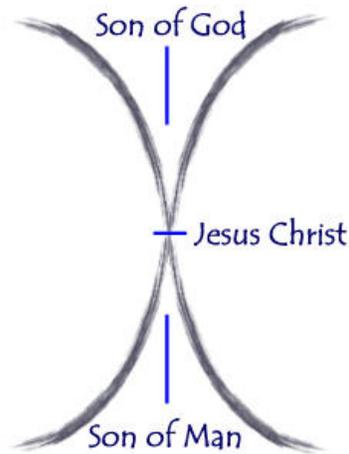
Son of Man

Jesus Christ is the Son of God and The Son of Man

Humanism and Christianity The Paradox

How can you combine these diverging branches of thought to reveal *The Way, The Life and The Truth*? It is a puzzle that can be solved in a higher dimension. Lets use our imagination to step out of space-time, and then look at the issues. First; is it by the efforts of man that we are saved such that Jesus Christ is as he says; "The Son of Man"... Or, are we saved by faith in Jesus Christ the Son of God who was sent to die on the cross for our sins? The answer yes to both! A transcendent observation from outside the box of space-time shows God create the world, life and man, alpha to omega, in one event. *It Is All Now*. From this view there is no free will and the Grace of God saves us. However, an observation from inside the box is subject to the flow of time. In here man has a life, free will, and the responsibility to become fully human. In Genesis God blesses us with work to do. Our tools become technology. Ideally, we apply technology to love and the spiritual life. *The Holy and The Human*; This duality sparks many arguments that could be resolved by considering the complimentary nature of the two viewpoints. It takes both to understand the human condition.

We can come together on many issues like this one if we make an effort to understand the full implications of block time. With the concept of block time we develop an inside space-time reference, and an outside space-time reference. Time is a dimension not a dynamic. Because we remember the past and not the future we have a subjective illusion of the passage of time. Augustine of Hippo wrote that God is also outside of time. Time only exist within the created universe. The physicist Stephen Hawking also helps us understand space-time on his website. (And, for a good overview on block time, see the Wikipedia article on the subject.)

Here are two universes in parallel.
The one on the left is a closed one
that will collapse in a big crunch
at the end of time. The other is
our universe. In the end of time
our universe will likely rip apart because
of accelerated expansion...Speed kills :)

I'm Outside the box !

Future

Time Line

Present

Past
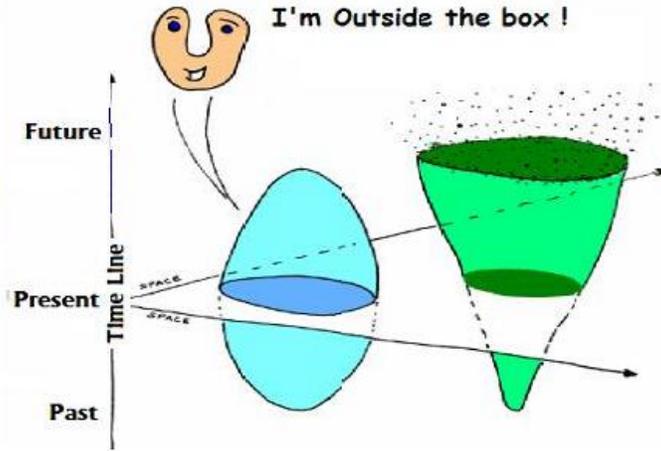
SPACE

SPACE

Another hot issue is evolution. A transcendent observation from outside the box of space-time shows God create the world, life and man, alpha to omega, in one event. *It Is All Now*. From this view there is no evolution. However, an observation from inside the box is subject to the flow of time. In here man evolves, and humanity stands on the shoulders of life forms that have gone before us. These life forms are indeed part of our family.

The Love Process

In The way of the Holy Spirit, I want to understand you and to share your experience. I want to fully understand the world. And, I want to resolve who I am. No one on earth today has the capacity to do this perfectly, but we have the potential. What hope do we have of ever understanding the infinite, extra dimensions, or timelessness if our minds are just not able to grasp these concepts? We are living in a time when it is becoming more and more apparent that brain-interfacing technologies are converging on the wish of the Holy Spirit. It is easy to see if you look at love this way: Technically, love can be seen as the process of connecting. The product of the love process is understanding. If the process is efficient and sustained, understanding increases exponentially. Peace allows unwavering attention so that the love process can establish a clear connection. At the heart of the process; symbols, words, and feelings are ordered into meaning. But meaning is not static it grows forever. Forgiveness is important to spiritual growth because it establishes an exhaust for misunderstanding and disorder. Put this all together and you have **The Perfect State of Mind**. With these principles we will build the New Temple; a society of loving individuals. Anything that empowers the Love process has the blessing of God.

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So the good word is we can apply work to Gods Plan. And, we can participate by applying technology to love and the spiritual life. A Christian Transhumanist knows that it is God's plan for Man to learn to love perfectly, and technology will be a part of the process. The action of gaining understanding is the Holy Spirit. "Though it cost all you have, get understanding." Jeremiah 2:14. We will reach a **Critical Point of Understanding** (CPU) where mind can be sustained by the word of God the Father alone. At this point the mind does not need the brain. Recall the first thing that Jesus said about mankind; "Man does not live by bread alone, but by every word that proceeds from the mouth of God". And, "Flesh does not inherit the kingdom of God. The spirit does". **The Perfect Mind Consumes Word** to survive. As we grow to the CPU, it looks like mankind becomes Christ. This "second coming" is the interface, the gate and the way to the

kingdom of heaven. "All things in heaven and earth come together in Christ", Ephesians 1:10.

Using the concept of block time it can be seen that the "end is the means". What we experience as spiritual growth is seen from outside the box as a static continuum where not only mankind but also the whole cosmos finds its fulfillment in Christ. For this to come about we must participate in Christ. Christ appears inside the box 2000 years ago to plant the ideas (the seed parables) that lead to the Son of Man. The Son of Man starts out as the gospel. These ideas grow into the Body of Christ spread out to form a Christian culture. (Looking at it from outside the box, God the father is sending his only son to save us from a life lost in the material world, a world that will end.) Christ must establish "the way, the life, and the truth". He does the only thing that can surely impress humanity; he dies on the cross for us. Then fallen man rises to move in the dimension of "growth in understanding" or, in the way of the Holy Spirit. Now his ideas live in all of us and the Body of Christ lives on through the actions they inspire. To complete the loop, we (the Body of Christ) grow spiritually to naturally converge on truth. We become the Son of Man. (Jesus referred to himself as the Son of Man and says that "Whoever does the will of God is my brother, sister and mother".) *We Participate in Christ* at the second coming! We must. It sounds impossible for someone (Christ) to go back into time to create themselves, but you did something like it when you started up your computer. When we boot up a computer the operating system is performing the seemingly impossible task of starting itself up. How can something start itself up? Isn't it like pulling yourself up by your own bootstraps? It is simply a set of instructions that bring to life computer components long enough so that they can accomplish the goal of loading an operating system. The instructions establish a little; way-life-and truth for programs. In our case the program is the "Love Process".
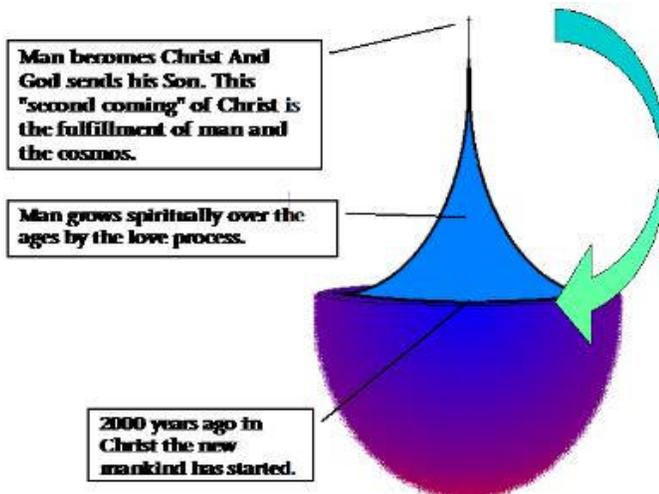
Man becomes Christ And God sends his Son. This "second coming" of Christ is the fulfillment of man and the cosmos.

Man grows spiritually over the ages by the love process.

2000 years ago in Christ the new mankind has started.

A Taste of the Beauty

The sun kisses the face of the spiral
   Leaning upward into the warmth,
the sunflower traces its mentor's pattern across the sky
as its own face reflects the mysteries of nature
written in the seed of familiar pattern.
   My heart beats the rhythm of the ages: 0112, 0112, 0112
I am connected, I am apart, I am.

<div align="right">Therese Lynne Price</div>

The Fibonacci Sequence is a recurring pattern in nature. We find it in the structure of our hearts, hands and stature. It is found in flowers and trees. The Fibonacci Sequence is found in music and the elements that make up the universe. The reason is that it models natural growth from within. The Fibonacci Sequence is so beautiful that it should also fit the spiritual aspects of our life. And it does.

0-In the beginning there was nothing.

1- The Father;
Yet we know there is something rather than nothing. This is the miracle of being . It is the only proof of God we should need . And what should we call you god? "I am!" Behold the soul and the ground of being!

1- The Son;
Mankind is created in Gods image. You can say I am! And so The kingdom of God is within us all. We fall when we ignore the miracle of being. Contemplate this and you will touch your Soul.

2- The Holy Spirit;
I am, now what? What to do? The first thing God Said to us is "Subdue the world." We do this by gaining understanding. That effort is the Holy Spirit. God speaks through the creation, through intuition and through our brothers and sisters. The Holy Spirit converges on perfect love. Jesus came to us 2000 years ago to teach us that the Holy Spirit leads us to the Kingdom of God.

3- The Kingdom of God
What shall we liken the Kingdom of God? or with what comparison shall we compare it? It is like a grain of mustard seed, which, when it is sown in the earth, is less than all the seeds that be in the earth: But when it is sown, it grows up, and becomes greater than all herbs, and shoots out great branches; so that the fowls of the air may lodge under the shadow of it.
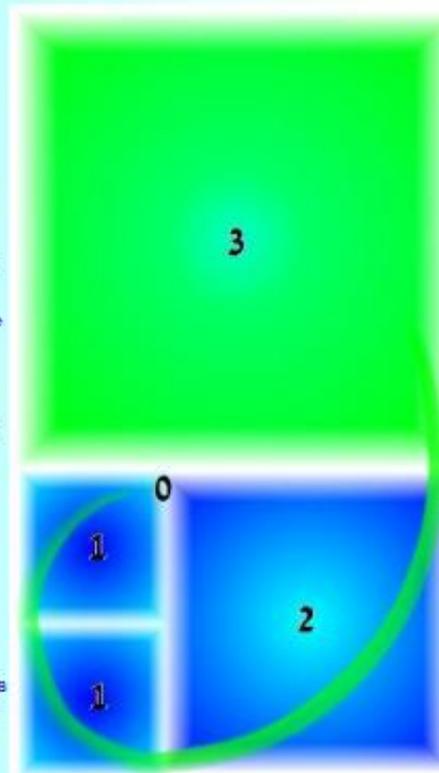
Bless you. Grow in numbers. Subdue the world."

Genesis 1:28. (The very first thing God said to us.)

Grow in numbers and subdue the world...How could this still apply? Does it make sense to continue growing in numbers and subduing the world? Today it seems like a path to destruction! We all know that the earth is reaching its peak population, resources are diminishing, and pollution is affecting us in dangerous ways.

In the days of Genesis we were blessed with a wide-open world. We had room to grow. There were many things to discover and "subdue". Now the world is nearly digested. But wait, Thank the creator! There is another course. In these days just before the evolutionary leap into post humanity, we can see that a new environment is becoming accessible. Some call it mind space, or the rapture, or the technical singularity. Some call it the "promised land". Either way, it is just one of the transitions in the eternal continuum of life.

God's first message will still apply when we make the evolutionary step into post humanity. This message is actually the strategy that leads to the eternal life that we were blessed with. In a process called Transformative Learning, We will "wise up" and change our idea of what life is.

- We will value the complimentary aspect of subjective and objective truth. The two are necessary.
- We will look back and think how silly it was to doubt the existence of God.
- We will know what it means to be ***Born Again!***
- We will have fun.

Trace evolution from the beginning of life to the humanity today. The success of a living thing is closely related to its model of reality. With Man, life becomes aware of God. Knowing that there is a desirable supreme state of being, we intelligently evolve even further. The Bible verse; "Bless you. Grow in numbers. Subdue the world." Tells us that the world is made for a beautiful subjective/personal experience for all our numbers. And it says the world is food for our spiritual growth. This corresponds precisely to the vertical and horizontal components of intelligent evolution. Horizontal growth is spiritual growth because it is growth in the dimension of understanding.

We are asked to "Grow in numbers" because the human experience is precious. Growth in the collective human experience is like branches of a tree. It is the horizontal component of progress measured by our cultural diversity. The quality of cultural diversity is measured in the ability for all to find and sustain the peak experience, to creatively flow through life. Imagine that your culture is a tree

branch, and individuals are leaves on the branch. Every leaf gets a bit of sun (an opportunity to grow) or it withers and dies. We strive to be free. We want to go our own way, naturally diverging. We relate to the world and create unique and valuable experiences this way. But, we also wisely desire to stay connected and to share these experiences. At the <u>Sandia Labs</u> this idea is called The ***Cognitive Collective*** – We each have unique knowledge and experience that enables us to make sense of the world, but also hinders our understanding the perspective of other disciplines, interests and cultures. Furthermore, there is so much data that it is not practical to have humans consider all of it, particularly if they must be experts in one or more fields. But, In a Cognitive Collective, a communicating group may recognize a pattern in cases where no single one was able to see a pattern." Remember, love is the most efficient communication. (This revision to the website was inspired by Emad Aboulyha.)

We are asked to "Subdue the world". Not to destroy the world but to <u>make sense of it all</u> and act wisely! This is progress in the vertical direction of the evolutionary tree and can be measured in our ability to learn objective truth from the world, and wisely use God's gift of life and resources to grow spiritually. This effort has evolved into today's technology. It is important not to ignore technology. Technology is a powerful extension of humanity and therefore dangerous. It is really important that we ***shift our technological engines away from the material earth*** and start concentrating on mind space.

Technology

There is no doubt we are growing to understand the world at a rapid pace. This is because;

> A living thing is conditioned to exist and grow.

> Understanding the laws of nature increases a living thing's chance to exist and grow.

> Science is the systematic process of understanding nature.

> Technology is the application of our understanding of nature to better adapt to our environment.

"In the end, all technology is prosthesis, the extension and augmentation of existing biological and informational capabilities. We put eyeglasses in front of our eyes to bring the world into focus, telescopes and microscopes to see those realms which our unaided eyes cannot fathom. We use remote sensors to explore the planets, and these are all extensions of the senses we have. All of our systems of writing and of calculation are
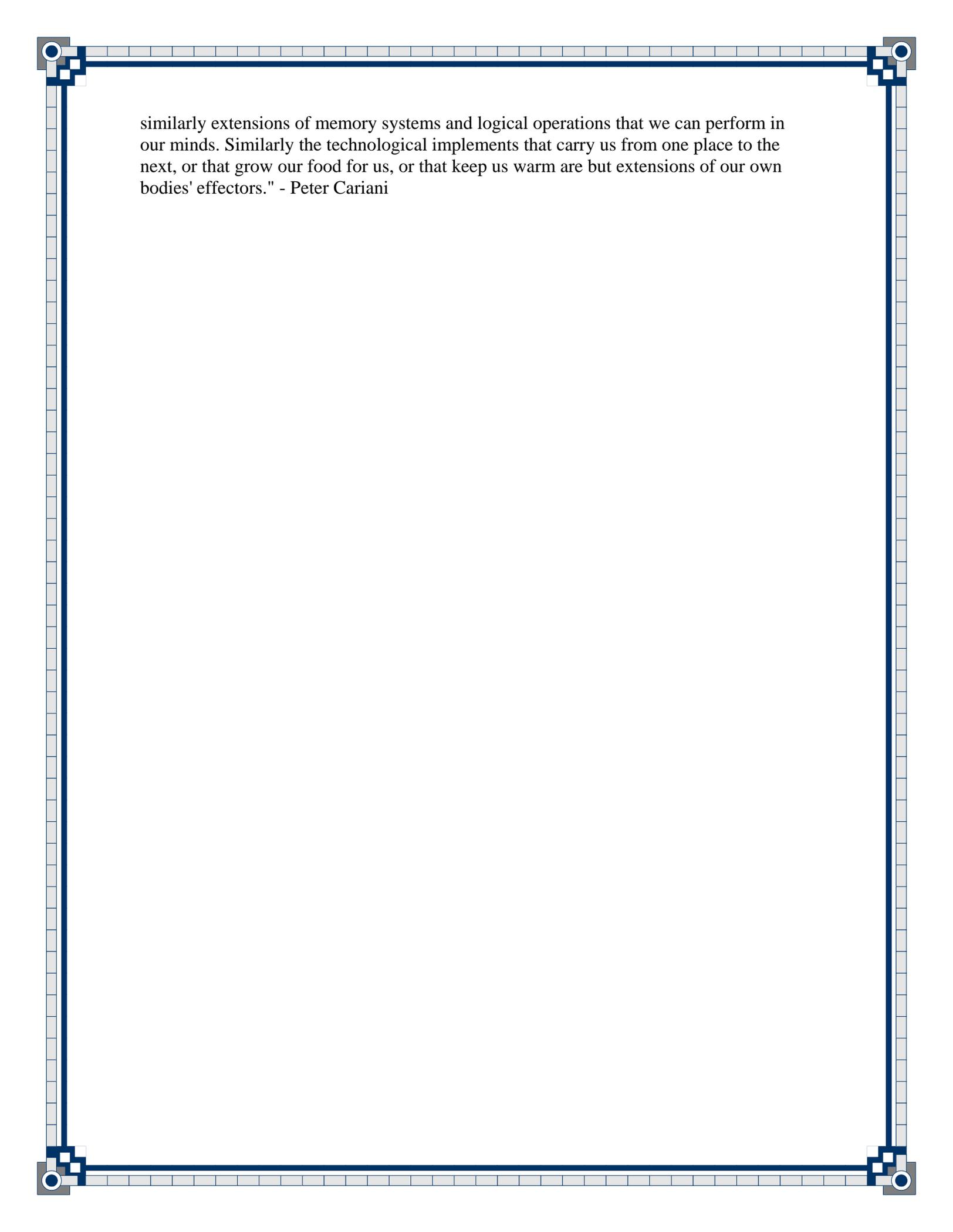
similarly extensions of memory systems and logical operations that we can perform in our minds. Similarly the technological implements that carry us from one place to the next, or that grow our food for us, or that keep us warm are but extensions of our own bodies' effectors." - Peter Cariani

Science, Natural Revelation,
And Cognitive Thermodynamics

The creation of the world is viewed as an expression of God. Saint Paul said of God: "Yet he is not far from each one of us, for 'in him we live and move and have our being,' This is the beginning of a knowledge of God that has manifested itself under the phrase of the "natural revelation" of God or God's revelation in the "book of nature."

Through science God has taught us that the universe is expanding at an ever-increasing rate so that eventually no interaction between the furthest parts of the structure can occur, neither electromagnetic nor gravitational. This will lead to space-time ripping apart; the destruction of the substrate of all material things in the universe. Scientific American March 2005: "If the acceleration (of our expanding universe) itself increased, it could eventually grow strong enough to *tear apart all structures*, leading to a "big rip." Nothing in the material universe can survive this.

Here is the way of material things:

**The Universe Dies
By Accelerated Expansion**

Density
of
Matter

Beginning of Time   End of Time
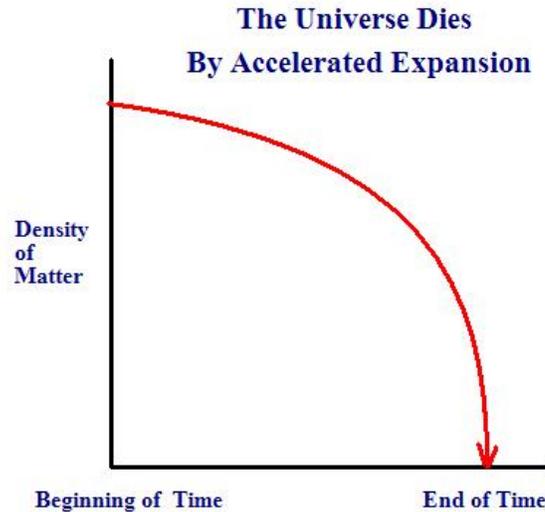
This is the mother of all problems! The first thing God said to us according to the book of Genesis is; subdue the world. And God's message in the book of nature is; eventually *you must transcend this world*. The good news is that in the infinite continuum of life, understanding evolves over time. That is how we subdue the world and that leads to our salvation. From the transcendent spiritual viewpoint our salvation is garanteed but from the humanist view inside space-time our salvation requires work.

Spiritual Growth over Time
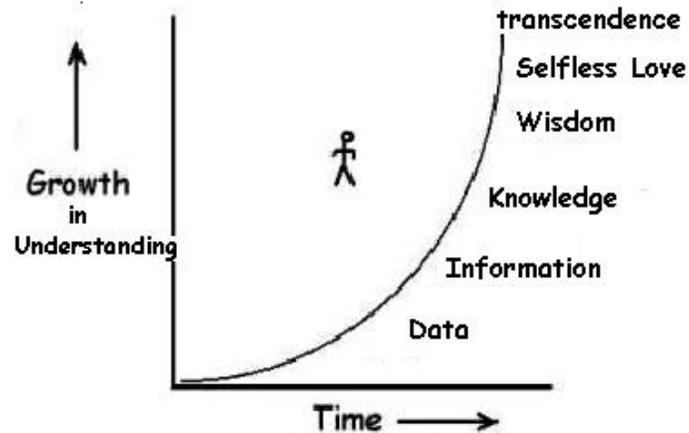
The work of life is to exist and grow. Growth in understanding is essential to the efficient application of the work of life. When we call "work applied to growth in understanding" the Holy Spirit, we can apply the fundamental laws of physics to our spiritual life. Today there is a branch of science emerging called *Cognitive Thermodynamics*. In this study love becomes a process where events of communication are the input. It is the source of cognitive energy. This call is a signal and an expression that fills the world. We also receive a stabilizing signal from each other, and there is even an intuitive internal channel. In the love process we turn our attention to the energetic expression in which is encoded an infinite reservoir of truth. In our spiritual life we live off of this truth. The efficiency of the love process depends on how much of this we connect to, how peaceful the environment is, and the ease at which we can forgive. Ignoring some of this impedes the process.

An expression impresses. That is the cognitive energy transfer that fuels and inspires us. Work is done on our being. It motivates us and this is inspiration. And natural revelation teaches us that any process needs an exhaust. Forgiveness is that exhaust in the study of cognitive thermodynamics.

Like a heat engine, life converts truth into understanding.

From Wikipedia: A **heat engine** performs the conversion of heat energy to work by exploiting the temperature gradient between a hot "source" and a cold "sink". Heat is transferred to the sink from the source, and in this process some of the heat is converted into work. The theoretical maximum efficiency of any heat engine is defined by the Carnot Cycle. The carnot heat engine (the ideal imaginary heat engine) has an efficiency

equal to (T1 - T2)/T1 where T1 is the [absolute temperature] of the hot source and T2 that of the cold sink.

Energy = word

High quality Source = Glory of God

Sink = forgiveness

This becomes important when we consider that in the coming years computer/human interfaces will become so intimate that users may reasonably be considered superhumanly intelligent transcendent humans, or "transhumans". If this concept of cognitive thermodynamics is correct then we should expect the love process to cause the lower hierarchy of needs to fall away and so naturally the transhuman becomes benevolent and self-actualized. As material needs diminish, transhumans will increasingly be sustained by a powerful flow of Word (rather than material) that can be called the Glory of God. In giving up competition and control strategies, we grow to be all that we can be; Christ-like.

Let me introduce a purely secular vision of the way technology is taking us. Here is a paper by;

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Abstract

Within thirty years, we will have the technological means to create superhuman intelligence. Shortly after, the human era will be ended.

Is such progress avoidable? If not to be avoided, can events be guided so that we may survive? These questions are investigated. Some possible answers (and some further dangers) are presented.

What is The Singularity?

The acceleration of technological progress has been the central feature of this century. I argue in this paper that we are on the edge of change comparable to the rise of human life on Earth. The precise cause of this change is the imminent creation by technology of entities with greater than human intelligence. There are several means by which science may achieve this breakthrough (and this is another reason for having confidence that the event will occur):

- There may be developed computers that are "awake" and superhumanly intelligent. (To date, there has been much controversy as to whether we can create human equivalence in a machine. But if the answer is "yes, we can", then there is little doubt that beings more intelligent can be constructed shortly thereafter.)
- Large computer networks (and their associated users) may "wake up" as a superhumanly intelligent entity.
- Computer/human interfaces may become so intimate that users may reasonably be considered superhumanly intelligent.

- Biological science may provide means to improve natural human intellect.

The first three possibilities depend in large part on improvements in computer hardware. Progress in computer hardware has followed an amazingly steady curve in the last few decades [17]. Based largely on this trend, I believe that the creation of greater than human intelligence will occur during the next thirty years. (Charles Platt [20] has pointed out that AI enthusiasts have been making claims like this for the last thirty years. Just so I'm not guilty of a relative-time ambiguity, let me more specific: I'll be surprised if this event occurs before 2005 or after 2030.)

What are the consequences of this event? When greater-than-human intelligence drives progress, that progress will be much more rapid. In fact, there seems no reason why progress itself would not involve the creation of still more intelligent entities -- on a still-shorter time scale. The best analogy that I see is with the evolutionary past: Animals can adapt to problems and make inventions, but often no faster than natural selection can do its work -- the world acts as its own simulator in the case of natural selection. We humans have the ability to internalize the world and conduct "what if's" in our heads; we can solve many problems thousands of times faster than natural selection. Now, by creating the means to execute those simulations at much higher speeds, we are entering a regime as radically different from our human past as we humans are from the lower animals.

From the human point of view this change will be a throwing away of all the previous rules, perhaps in the blink of an eye, an exponential runaway beyond any hope of control. Developments that before were thought might only happen in "a million years" (if ever) will likely happen in the next century. (In [5], Greg Bear paints a picture of the major changes happening in a matter of hours.)

I think it's fair to call this event a singularity ("the Singularity" for the purposes of this paper). It is a point where our old models must be discarded and a new reality rules. As we move closer to this point, it will loom vaster and vaster over human affairs till the notion becomes a commonplace. Yet when it finally happens it may still be a great surprise and a greater unknown. In the 1950s there were very few who saw it: Stan Ulam [28] paraphrased John von Neumann as saying:

One conversation centered on the ever accelerating progress of technology and changes in the mode of human life, which gives the appearance of approaching some essential singularity in the history of the race beyond which human affairs, as we know them, could not continue.

Von Neumann even uses the term singularity, though it appears he is thinking of normal progress, not the creation of superhuman intellect. (For me, the superhumanity is the essence of the Singularity. Without that we would get a glut of technical riches, never properly absorbed (see [25]).)

In the 1960s there was recognition of some of the implications of superhuman intelligence. I. J. Good wrote [11]:

*Let an ultraintelligent machine be defined as a machine that can far surpass all the intellectual activities of any any man however clever. Since the design of machines is one of these intellectual activities, an ultraintelligent machine could design even better machines; there would then unquestionably be an "intelligence explosion," and the intelligence of man would be left far behind. Thus the first ultraintelligent machine is the **last** invention that man need ever make, provided that the machine is docile enough to tell us how to keep it under control. ...*

It is more probable than not that, within the twentieth century, an ultraintelligent machine will be built and that it will be the last invention that man need make.

Good has captured the essence of the runaway, but does not pursue its most disturbing consequences. Any intelligent machine of the sort he describes would not be humankind's "tool" -- any more than humans are the tools of rabbits or robins or chimpanzees.

Through the '60s and '70s and '80s, recognition of the cataclysm spread [29] [1] [31] [5]. Perhaps it was the science-fiction writers who felt the first concrete impact. After all, the "hard" science-fiction writers are the ones who try to write specific stories about all that technology may do for us. More and more, these writers felt an opaque wall across the future. Once, they could put such fantasies millions of years in the future [24]. Now they saw that their most diligent extrapolations resulted in the unknowable ... soon. Once, galactic empires might have seemed a Post-Human domain. Now, sadly, even interplanetary ones are.

What about the '90s and the '00s and the '10s, as we slide toward the edge? How will the approach of the Singularity spread across the human world view? For a while yet, the general critics of machine sapience will have good press. After all, till we have hardware as powerful as a human brain it is probably foolish to think we'll be able to create human equivalent (or greater) intelligence. (There is the far-fetched possibility that we could make a human equivalent out of less powerful hardware, if we were willing to give up speed, if we were willing to settle for an artificial being who was literally slow [30]. But it's much more likely that devising the software will be a tricky process, involving lots of false starts and experimentation. If so, then the arrival of self-aware machines will not happen till after the development of hardware that is substantially more powerful than humans' natural equipment.)

But as time passes, we should see more symptoms. The dilemma felt by science fiction writers will be perceived in other creative endeavors. (I have heard thoughtful comic book writers worry about how to have spectacular effects when everything visible can be produced by the technologically commonplace.) We will see automation replacing higher and higher level jobs. We have tools right now (symbolic math programs, cad/cam) that release us from most low-level drudgery. Or put another way: The work that is truly productive is the domain of a steadily smaller and more elite fraction of humanity. In the coming of the Singularity, we are seeing the predictions of **true** technological unemployment finally come true.

Another symptom of progress toward the Singularity: ideas themselves should spread ever faster, and even the most radical will quickly become commonplace. When I began writing science fiction in the middle '60s, it seemed very easy to find ideas that took decades to percolate into the cultural consciousness; now the lead time seems more like eighteen months. (Of course, this could just be me losing my imagination as I get old, but I see the effect in others too.) Like the shock in a compressible flow, the Singularity moves closer as we accelerate through the critical speed.

And what of the arrival of the Singularity itself? What can be said of its actual appearance? Since it involves an intellectual runaway, it will probably occur faster than any technical revolution seen so far. The precipitating event will likely be unexpected -- perhaps even to the researchers involved. ("But all our previous models were catatonic! We were just tweaking some parameters....") If networking is widespread enough (into ubiquitous embedded systems), it may seem as if our artifacts as a whole had suddenly wakened.

And what happens a month or two (or a day or two) after that? I have only analogies to point to: The rise of humankind. We will be in the Post-Human era. And for all my rampant technological optimism, sometimes I think I'd be more comfortable if I were regarding these transcendental events from one thousand years remove ... instead of twenty.

Can the Singularity be Avoided?

Well, maybe it won't happen at all: Sometimes I try to imagine the symptoms that we should expect to see if the Singularity is not to develop. There are the widely respected arguments of Penrose [19] and Searle [22] against the practicality of machine sapience. In August of 1992, Thinking Machines Corporation held a workshop to investigate the question "How We Will Build a Machine that Thinks" [27]. As you might guess from the workshop's title, the participants were not especially supportive of the arguments against machine intelligence. In fact, there was general agreement that minds can exist on nonbiological substrates and that algorithms are of central importance to the existence of minds. However, there was much debate about the raw hardware power that is present in organic brains. A minority felt that the largest 1992 computers were within three orders of magnitude of the power of the human brain. The majority of the participants agreed with Moravec's estimate [17] that we are ten to forty years away from hardware parity. And yet there was another minority who pointed to [7] [21], and conjectured that the computational competence of single neurons may be far higher than generally believed. If so, our present computer hardware might be as much as **ten** orders of magnitude short of the equipment we carry around in our heads. If this is true (or for that matter, if the Penrose or Searle critique is valid), we might never see a Singularity. Instead, in the early '00s we would find our hardware performance curves beginning to level off -- this because of our inability to automate the design work needed to support further hardware improvements. We'd end up with some **very** powerful hardware, but without the ability to push it further. Commercial digital signal processing might be awesome, giving an analog appearance even to digital operations, but nothing would ever "wake up" and there would never be the intellectual runaway which is the essence of the Singularity. It would likely be seen as a golden age ... and it would also be an end of progress. This is very like the future predicted by Gunther Stent. In fact, on page 137 of [25], Stent explicitly cites the development of transhuman intelligence as a sufficient condition to break his projections.

But if the technological Singularity can happen, it will. Even if all the governments of the world were to understand the "threat" and be in deadly fear of it, progress toward the goal would continue. In fiction, there have been stories of laws passed forbidding the construction of "a machine in the likeness of the human mind" [13]. In fact, the competitive advantage -- economic, military, even artistic -- of every advance in automation is so compelling that passing laws, or having customs, that forbid such things merely assures that someone else will get them first.

Eric Drexler [8] has provided spectacular insights about how far technical improvement may go. He agrees that superhuman intelligences will be available in the near future -- and that such entities pose a threat to the human status quo. But Drexler argues that we can confine such transhuman devices so that their results can be examined and used safely. This is I. J. Good's ultraintelligent machine, with a dose of caution. I argue that confinement is intrinsically impractical. For the case of physical confinement: Imagine yourself locked in your home with only limited data access to the outside, to your masters. If those masters thought at a rate -- say -- one million times slower than you, there is little doubt that over a period of years (your time) you could come up with "helpful advice" that would incidentally set you free. (I call this "fast thinking" form of superintelligence "weak superhumanity". Such a "weakly superhuman" entity would probably burn out in a few weeks of outside time. "Strong superhumanity" would be more than cranking up the clock speed on a human-equivalent mind. It's hard to say precisely what "strong superhumanity" would be like, but the difference appears to be profound. Imagine running a dog mind at very high speed. Would a thousand years of doggy living add up to any human insight? (Now if the dog mind were cleverly rewired and **then** run at high speed, we might see something different....) Many speculations about

superintelligence seem to be based on the weakly superhuman model. I believe that our best guesses about the post-Singularity world can be obtained by thinking on the nature of strong superhumanity. I will return to this point later in the paper.)

Another approach to confinement is to build **rules** into the mind of the created superhuman entity (for example, Asimov's Laws [3]). I think that any rules strict enough to be effective would also produce a device whose ability was clearly inferior to the unfettered versions (and so human competition would favor the development of the those more dangerous models). Still, the Asimov dream is a wonderful one: Imagine a willing slave, who has 1000 times your capabilities in every way. Imagine a creature who could satisfy your every safe wish (whatever that means) and still have 99.9% of its time free for other activities. There would be a new universe we never really understood, but filled with benevolent gods (though one of **my** wishes might be to become one of them).

If the Singularity can not be prevented or confined, just how bad could the Post-Human era be? Well ... pretty bad. The physical extinction of the human race is one possibility. (Or as Eric Drexler put it of nanotechnology: Given all that such technology can do, perhaps governments would simply decide that they no longer need citizens!). Yet physical extinction may not be the scariest possibility. Again, analogies: Think of the different ways we relate to animals. Some of the crude physical abuses are implausible, yet.... In a Post-Human world there would still be plenty of niches where human equivalent automation would be desirable: embedded systems in autonomous devices, self-aware daemons in the lower functioning of larger sentients. (A strongly superhuman intelligence would likely be a Society of Mind [16] with some very competent components.) Some of these human equivalents might be used for nothing more than digital signal processing. They would be more like whales than humans. Others might be very human-like, yet with a one-sidedness, a **dedication** that would put them in a mental hospital in our era. Though none of these creatures might be flesh-and-blood humans, they might be the closest things in the new enviroment to what we call human now. (I. J. Good had something to say about this, though at this late date the advice may be moot: Good [12] proposed a "Meta-Golden Rule", which might be paraphrased as "Treat your inferiors as you would be treated by your superiors." It's a wonderful, paradoxical idea (and most of my friends don't believe it) since the game-theoretic payoff is so hard to articulate. Yet if we were able to follow it, in some sense that might say something about the plausibility of such kindness in this universe.)

I have argued above that we cannot prevent the Singularity, that its coming is an inevitable consequence of the humans' natural competitiveness and the possibilities inherent in technology. And yet ... we are the initiators. Even the largest avalanche is triggered by small things. We have the freedom to establish initial conditions, make things happen in ways that are less inimical than others. Of course (as with starting avalanches), it may not be clear what the right guiding nudge really is:

Other Paths to the Singularity: Intelligence Amplification

When people speak of creating superhumanly intelligent beings, they are usually imagining an AI project. But as I noted at the beginning of this paper, there are other paths to superhumanity. Computer networks and human-computer interfaces seem more mundane than AI, and yet they could lead to the Singularity. I call this contrasting approach Intelligence Amplification (IA). IA is something that is proceeding very naturally, in most cases not even recognized by its developers for what it is. But every time our ability to access information and to communicate it to others is improved, in some sense we have achieved an increase over

natural intelligence. Even now, the team of a PhD human and good computer workstation (even an off-net workstation!) could probably max any written intelligence test in existence.

And it's very likely that IA is a much easier road to the achievement of superhumanity than pure AI. In humans, the hardest development problems have already been solved. Building up from within ourselves ought to be easier than figuring out first what we really are and then building machines that are all of that. And there is at least conjectural precedent for this approach. Cairns-Smith [6] has speculated that biological life may have begun as an adjunct to still more primitive life based on crystalline growth. Lynn Margulis (in [15] and elsewhere) has made strong arguments that mutualism is a great driving force in evolution.

Note that I am not proposing that AI research be ignored or less funded. What goes on with AI will often have applications in IA, and vice versa. I am suggesting that we recognize that in network and interface research there is something as profound (and potential wild) as Artificial Intelligence. With that insight, we may see projects that are not as directly applicable as conventional interface and network design work, but which serve to advance us toward the Singularity along the IA path.

Here are some possible projects that take on special significance, given the IA point of view:

- Human/computer team automation: Take problems that are normally considered for purely machine solution (like hill-climbing problems), and design programs and interfaces that take a advantage of humans' intuition and available computer hardware. Considering all the bizarreness of higher dimensional hill-climbing problems (and the neat algorithms that have been devised for their solution), there could be some very interesting displays and control tools provided to the human team member.
- Develop human/computer symbiosis in art: Combine the graphic generation capability of modern machines and the esthetic sensibility of humans. Of course, there has been an enormous amount of research in designing computer aids for artists, as labor saving tools. I'm suggesting that we explicitly aim for a greater merging of competence, that we explicitly recognize the cooperative approach that is possible. Karl Sims [23] has done wonderful work in this direction.
- Allow human/computer teams at chess tournaments. We already have programs that can play better than almost all humans. But how much work has been done on how this power could be used by a human, to get something even better? If such teams were allowed in at least some chess tournaments, it could have the positive effect on IA research that allowing computers in tournaments had for the corresponding niche in AI.
- Develop interfaces that allow computer and network access without requiring the human to be tied to one spot, sitting in front of a computer. (This is an aspect of IA that fits so well with known economic advantages that lots of effort is already being spent on it.)
- Develop more symmetrical decision support systems. A popular research/product area in recent years has been decision support systems. This is a form of IA, but may be too focussed on systems that are oracular. As much as the program giving the user information, there must be the idea of the user giving the program guidance.
- Use local area nets to make human teams that really work (ie, are more effective than their component members). This is generally the area of "groupware", already a very popular commercial pursuit. The change in viewpoint here would be to regard the group activity as a combination organism. In one sense, this suggestion might be regarded as the goal of inventing a "Rules of Order" for such combination operations. For instance, group focus might be more easily maintained than in classical meetings. Expertise of individual human members could be isolated from ego issues such that the contribution of different members is focussed on the team project. And of course shared data bases could be used much more conveniently than in conventional committee operations. (Note that this suggestion is aimed at team operations rather than political meetings. In a

political setting, the automation described above would simply enforce the power of the persons making the rules!)

- Exploit the worldwide Internet as a combination human/machine tool. Of all the items on the list, progress in this is proceeding the fastest and may run us into the Singularity before anything else. The power and influence of even the present-day Internet is vastly underestimated. For instance, I think our contemporary computer systems would break under the weight of their own complexity if it weren't for the edge that the USENET "group mind" gives the system administration and support people! The very anarchy of the worldwide net development is evidence of its potential. As connectivity and bandwidth and archive size and computer speed all increase, we are seeing something like Lynn Margulis' [15] vision of the biosphere as data processor recapitulated, but at a million times greater speed and with millions of humanly intelligent agents (ourselves).

The above examples illustrate research that can be done within the context of contemporary computer science departments. There are other paradigms. For example, much of the work in Artificial Intelligence and neural nets would benefit from a closer connection with biological life. Instead of simply trying to model and understand biological life with computers, research could be directed toward the creation of composite systems that rely on biological life for guidance or for the providing features we don't understand well enough yet to implement in hardware. A long-time dream of science-fiction has been direct brain to computer interfaces [2] [29]. In fact, there is concrete work that can be done (and is being done) in this area:

- Limb prosthetics is a topic of direct commercial applicability. Nerve to silicon transducers can be made [14]. This is an exciting, near-term step toward direct communication.
- Direct links into brains seem feasible, if the bit rate is low: given human learning flexibility, the actual brain neuron targets might not have to be precisely selected. Even 100 bits per second would be of great use to stroke victims who would otherwise be confined to menu-driven interfaces.
- Plugging in to the optic trunk has the potential for bandwidths of 1 Mbit/second or so. But for this, we need to know the fine-scale architecture of vision, and we need to place an enormous web of electrodes with exquisite precision. If we want our high bandwidth connection to be **in addition** to what paths are already present in the brain, the problem becomes vastly more intractable. Just sticking a grid of high-bandwidth receivers into a brain certainly won't do it. But suppose that the high-bandwidth grid were present while the brain structure was actually setting up, as the embryo develops. That suggests:
- Animal embryo experiments. I wouldn't expect any IA success in the first years of such research, but giving developing brains access to complex simulated neural structures might be very interesting to the people who study how the embryonic brain develops. In the long run, such experiments might produce animals with additional sense paths and interesting intellectual abilities.

Originally, I had hoped that this discussion of IA would yield some clearly safer approaches to the Singularity. (After all, IA allows our participation in a kind of transcendence.) Alas, looking back over these IA proposals, about all I am sure of is that they should be considered, that they may give us more options. But as for safety ... well, some of the suggestions are a little scarey on their face. One of my informal reviewers pointed out that IA for individual humans creates a rather sinister elite. We humans have millions of years of evolutionary baggage that makes us regard competition in a deadly light. Much of that deadliness may not be necessary in today's world, one where losers take on the winners' tricks and are coopted into the winners' enterprises. A creature that was built **de novo** might possibly be a much more benign entity than one with a kernel based on fang and talon. And even the egalitarian view of an Internet that wakes up along with all mankind can be viewed as a nightmare [26].

The problem is not simply that the Singularity represents the passing of humankind from center stage, but that it contradicts our most deeply held notions of being. I think a closer look

at the notion of strong superhumanity can show why that is.

Strong Superhumanity and the Best We Can Ask for

Suppose we could tailor the Singularity. Suppose we could attain our most extravagant hopes. What then would we ask for: That humans themselves would become their own successors, that whatever injustice occurs would be tempered by our knowledge of our roots. For those who remained unaltered, the goal would be benign treatment (perhaps even giving the stay-behinds the appearance of being masters of godlike slaves). It could be a golden age that also involved progress (overleaping Stent's barrier). Immortality (or at least a lifetime as long as we can make the universe survive [10] [4]) would be achievable.

But in this brightest and kindest world, the philosophical problems themselves become intimidating. A mind that stays at the same capacity cannot live forever; after a few thousand years it would look more like a repeating tape loop than a person. (The most chilling picture I have seen of this is in [18].) To live indefinitely long, the mind itself must grow ... and when it becomes great enough, and looks back ... what fellow-feeling can it have with the soul that it was originally? Certainly the later being would be everything the original was, but so much vastly more. And so even for the individual, the Cairns-Smith or Lynn Margulis notion of new life growing incrementally out of the old must still be valid.

This "problem" about immortality comes up in much more direct ways. The notion of ego and self-awareness has been the bedrock of the hardheaded rationalism of the last few centuries. Yet now the notion of self-awareness is under attack from the Artificial Intelligence people ("self-awareness and other delusions"). Intelligence Amplification undercuts our concept of ego from another direction. The post-Singularity world will involve extremely high-bandwidth networking. A central feature of strongly superhuman entities will likely be their ability to communicate at variable bandwidths, including ones far higher than speech or written messages. What happens when pieces of ego can be copied and merged, when the size of a selfawareness can grow or shrink to fit the nature of the problems under consideration? These are essential features of strong superhumanity and the Singularity. Thinking about them, one begins to feel how essentially strange and different the Post-Human era will be -- ***no matter how cleverly and benignly it is brought to be***.

From one angle, the vision fits many of our happiest dreams: a time unending, where we can truly know one another and understand the deepest mysteries. From another angle, it's a lot like the worst- case scenario I imagined earlier in this paper.

Which is the valid viewpoint? In fact, I think the new era is simply too different to fit into the classical frame of good and evil. That frame is based on the idea of isolated, immutable minds connected by tenuous, low-bandwith links. But the post-Singularity world **does** fit with the larger tradition of change and cooperation that started long ago (perhaps even before the rise of biological life). I think there **are** notions of ethics that would apply in such an era. Research into IA and high-bandwidth communications should improve this understanding. I see just the glimmerings of this now [32]. There is Good's Meta-Golden Rule; perhaps there are rules for distinguishing self from others on the basis of bandwidth of connection. And while mind and self will be vastly more labile than in the past, much of what we value (knowledge, memory, thought) need never be lost. I think Freeman Dyson has it right when he says [9]: "God is what mind becomes when it has passed beyond the scale of our comprehension."

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NOW BACK TO A SPIRITUAL INTERPRETATION OF TECHNOLOGICAL PROGRESS;

Through computer and sensor evolution our technological tools are turning into a place where we can extend our senses to better understand the word of God. This is a spiritual process is known as natural revelation. Technology is a place to expand your mind, and find truth, for those who wish it. There is talk of uploading our minds into this environment and living forever. Technology is opening the door to a new ecological niche. This is not a plastic virtual reality. It is God's creation in high resolution and amplified. The doors of perception are opening.

It seems like transcendence really is at hand. Check out the [Transhumanism movement](#) to see how some folks are speculating on, and actually trying out possible transcending paths. Then check out the various [Singularity Watch](#) Internet sites to see what some futurist think is happening with technological growth. And look at my [brain interface technologies](#) page. It reminds me of how we were looking for ways to fly in the early 1900s. I remember watching the films of crazy "meant to fly" contraptions flopping around in the dirt. Eventually we got it right and went to the moon. Now, there are still plenty of crazy ideas out there, but I have faith that one of them will get off the ground. And then we will bridge the gap between man and reality.

Lets say we transcend our flesh body using the technology of the near future. What about our soul? There isn't much being said about the spiritual aspects of this exponential technological growth. Every movie or book I have read on this subject is rather scary. Scary sells. So let me provide a comforting metaphor for what I think is really happening. You could look at it this way: engineers build a church as a place of worship. They build roads to the church. They design modern modes of transportation for getting to the church. Then it is up to us to get to the church and use it in the spirit of love. This technology is just another church, a place to worship. The kingdom of God is within us all and these technologies are expanding the environment. Yes there will be challenges but God is all-powerful love. You can do no wrong when the spirit of love, the Holy Spirit is with you. And, It is said; "If you are trying to save your life for any other reason than love, you will lose it." There is one way to life and truth. This wisdom is eternal. It takes love.

WHAT IS HEAVEN?

Heaven allows Hyper Evolution

It is ever increasing beauty - The Glory of God.

In Heaven you are born into a new world. You are regenerated. You make meaning because that is in your spirit. Just as you did when you were first born. And, the thing you learn is you can't control the flow of meaning. It is coming too fast and it is

awesome. It is humbling and joyful at the same time. But you understand the path to take. And, you learn that this path is infinite and you take some comfort in that. Because you love it and you know it will last forever. You become worship. Now you know what you can trust. Lack of trust was slowing your growth down. Heaven is what happens when you put your trust in God and the love process. God is love. Love is a process. We are made in the image of God. We love with our Mind. Mind is a process.

You are changed. To know is to be a saint. Understanding of the direction to God yields grace and love. You become benevolent. Being beyond the material requires that the ego go.

Consciousness apart from the flesh is equivalent to deliverance from sin and suffering. You are no longer competing. You are in harmony.

The very thought of controlling others repulses you. It is boring, you don't look back. Instead you share and you relate your experience. You are walking a path you could never have walked before. Yet, it is familiar, it reminds you of life in space-time at it's best, when you were in the groove. And this is why the rest of the universe seems silent of life. Before alien societies obtain the ability to travel light-year distances they follow this transcending path. Like Elvis, the aliens have "left the building".
.
Suffering is for those who stop this pure worship to say let me try the controls for a while. But, this eventually turns into a contemplation of the self and stagnates. My ego was a direction. It was self-referential. It was a direction that withers. It was death. You could say your life with it's self referential consciousness was an eddy in the river of God's will, a dance in space-time and a whorl in the grain that will last an eternity.

When the truth is revealed to you , you don't just see it, you be it. Knowing like you know how an apple feels, smells and tastes is called apprehending, and it is the highest mode of Understanding. This takes bandwidth. All of us geeks love bandwidth. The pure attention of selfless love provides infinite bandwidth. "Bandwidth describes the amount of data a network can transport in a certain period of time. In other words, bandwidth is a capacity for rate of transfer, usually expressed in bits per second." It requires large bandwidth to convey a rich experience. So at the interface, let go. Don't be afraid to give it up for God.

Salvation

 "For Christians, the Biblical approach to salvation begins in the Scriptures of the New Testament. Many of these texts are found in the Epistle to the Romans, largely because that Epistle contains the most comprehensive theological statement by Saint Paul of Tarsus. Because of this, some Protestant Christian denominations have called these texts the *Romans road*.

Some key passages in the New Testament concerning salvation include:

- **God loves you**: "For God so loved the world that he gave his one and only Son, that whoever believes in him shall not perish but have eternal life." (John 3:16) "But God commendeth his love toward us, in that, while we were yet sinners, Christ died for us. " (Romans 5:8)
- **Our sin separates us from God.** "For all have sinned, and come short of the glory of God"(Romans 3:23) "Wherefore, as by one man sin entered into the world, and death by sin; and so death passed upon all men, for that all have sinned" (Romans 5:12)
- **God gives us eternal life** because Jesus Christ paid the penalty for our sin: "For the wages of sin is death; but the gift of God is eternal life through Jesus Christ our Lord." (Romans 6:23)
- **Turn from your sins, confess and believe**: "That if thou shalt confess with thy mouth the Lord Jesus, and shalt believe in thine heart that God hath raised him from the dead, thou shalt be saved." — "For with the heart man believeth unto righteousness; and with the mouth confession is made unto salvation." (Romans 10:9-10) "For whosoever shall call upon the name of the Lord shall be saved." (Romans 10:13)

- **We are saved by God's grace**: "For by grace are ye saved through faith; and not of yourselves: it is the gift of God: not of works, lest any man should boast." (Ephesians 2:8-9)"

And then James balances faith with works:

- **"Even so faith, if it hath not works, is dead, being alone.** Yea, a man may say, Thou hast faith, and I have works: show me thy faith without thy works, and I will show thee my faith by my works. Thou believest that there is one God; thou doest well: the devils also believe, and tremble. But wilt thou know, O vain man, that faith without works is dead? (James 2:17)

The fighting I witness over this is a damned shame! The problem with the traditional views of salvation is that it leaves out the importance of human participation. We participate and we receive the help of God. That is the Holy Spirit. Without integration of faith and works we will remain lost in confusion and misunderstanding. We will be ignoring the Holy Spirit. Let people work with God for their one and only salvation!

Scary Things

and

The Ultimate Fear of God

Threats to Humanity Intensify over Time

Space-Time Rips

Antichrist

Mind Control War

Growth

Nuclear and Biological War

Disease

Competition With Animals

Time ⟶
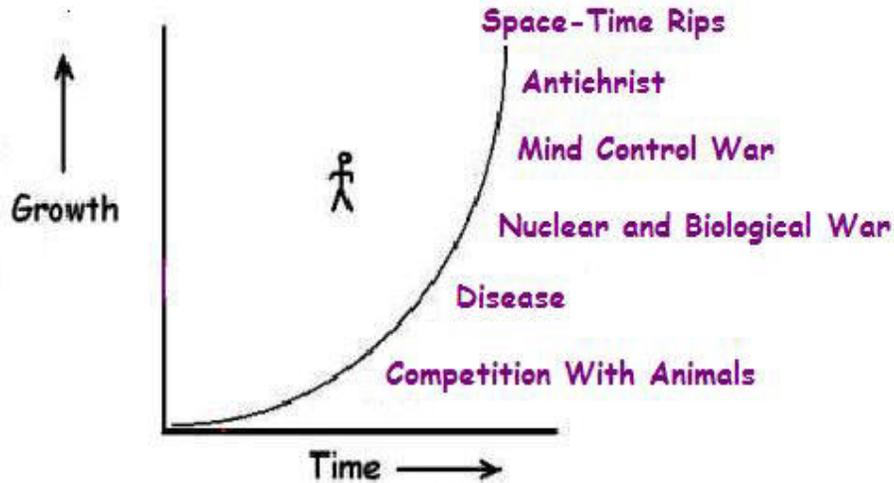
Harness Your Fear and Let It Motivate You

Traditionally "The Fear of the Lord" is understood as respect. I believe it has a deeper meaning, a meaning that helps us deal with fear. Why should God create a world in which there are things to fear? Because fear is a necessary motivator. It is the compliment of the Glory of God. For the finest experience we place ourselves *Between The Fear and The Glory* of God. Master your fear and turn to the Glory. In such a state our spirit is roused to a passion. The power of passion is sufficient to transcend our condition. *How much do you live?* It depends on your motivator and your goals. There will come a time when humanity will be faced with the ultimate fear and glory, and we will turn to the glory. "The city had no need of the sun, neither of the moon, to shine in it: for the glory of God did lighten it, and the Lamb is the light thereof." (Revelation 21:23) When we learn to love perfectly fear falls away; There is no fear in love: true love has no room for fear, because where fear is, there is pain; and he who is not free from fear is not complete in love. 1 John 4:18

A fundamentalist will quickly say that the efforts of man to save himself with gadgets and tools will bring on the antichrist. This is true. In accordance with Christian doctrine there <u>must</u> be an appearance of the antichrist. I think the Antichrist is the very worst of

man empowered by the very best technology. Any technology has its peaceful and destructive aspects and is always applied in both spirits. Remember the atomic bomb and nuclear power. With the mind expanding technologies of the future there is the potential for very good and very bad. Christ and the Antichrist will fully manifest. Our mind has the potential to commune via electromagnetic frequencies with all sorts of mechanical interfaces and sensing devices. Our governments knows that **we can apply this to the battlefield.** DARPA put out a call for papers and proposals several years ago. What happened? Did this also go underground? Their intention is to train and equip soldiers to take mind control of a battlefield. Once this is started, a new type of arms race is on to develop and implement the most advanced systems. This will lead to super-intelligent aggressors and defenders. Remember your history; atomic fission was discovered in 1939. In secrecy the BOMB was developed and used only 6 years later. We were motivated then by the fear of an axis country getting this terrible weapon before we did. Apply the same logic to brain interfacing technology and it is a slippery slope down to Armageddon. With evolving brain interfaces super intelligent aggressors will hyperevolve into what you know as the Antichrist. But the Christian Transhumanist will harness the fear that comes from powerful brain interface technologies and let it motivate thier spirit.

Dr Alex Alaniz writes a credible essay on

the challenges that face our society:

An essay concerning law, social identity, inequality, conflict, crime, warfare and

economic reality at the cusp of humanity's entry into post-corporeal, post-Darwinian

evolution

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An essay concerning law, social identity, inequality, conflict, crime, warfare and economic reality at the cusp of humanity's entry into post-corporeal, post-Darwinian evolution

Introduction—Humanity's entry into the post-Darwinian era

A draft of the human genome was released in the journal Nature in 2001 [1]. Today, the technology to sequence a human genome from scratch is being reduced to smallish, so-called biochips by companies like Affymetrix. In addition to finding their way into your doctor's office in the not-too-distant future, such biochips are currently being used with other advanced technologies to study how our DNA circuitry works in real-time [2], as well as to compare how the circuitry changes from youth to old age [3]. Genome therapies, moreover, are currently working their way thru clinical trials, and are about to be performed on the unborn [4]. We have developed genetically modified foods, and have mixed monkeys with jelly fish [5] to name but a few examples of our growing prowess to treat genetic codes as so much software. Humanity, thus, for better or for worse, has entered the era of post-Darwinian evolution, and it will not be long before we begin tinkering with ways to extend our lives and augment our capabilities. Even more profoundly, it is not too far-fetched to imagine humanity entering a post-corporeal as well as a post-Darwinian era. Consider the recent development of neuroelectronic systems in particular [6] and the current clinical work to build direct brain/machine interfaces for paraplegics and quadriplegics [7]. The FDA has, in fact, recently granted approval to allow Cyberkinetics to begin a clinical trial in which small chips will be placed beneath the skulls of paraplegic patients to control computers by thought alone. Further down the

line there are ongoing efforts to build brain chips to replace Alzheimer and stroke damaged brain tissue in general by Dr. Berger and colleagues at the University of Southern California in Los Angeles.

Given the above developments and humanity's propensity for seeking out competitive advantages, it is likely that in the not-too-distant future people will seek out elective, post-Darwinian brain augmentation procedures, and that new kinds of social conflict will arise. In other words, we should be expecting profound changes in social identity, inequality, conflict, crime, warfare, economic and legal reality to come to pass in the not-too-distant future. To this end, many people, several organizations and even the United States government are already beginning to address some of the issues of a post-Darwinian, post-corporeal future. The United States, for instance, under the National Science Foundation (NSF) grant CTS-0128860 cosponsored a large, extensive study entitled, "Converging technologies for improving human performance: nanotechnology, biotechnology, information technology and cognitive science." Additionally, in this case with the support of the Commerce Department, the Converging Technologies Bar Association (CTBA) was recently launched in New York. Please refer to the CTBA at http://www.convergingtechnologies.org/. Also recently, Professor George Khushf and several colleagues of the University of South Carolina won a 1.35 million dollar grant from the National Science Foundation (NSF) to study the societal impact of nanotech and related trends such as nano, bio, info and cognitive technology convergence.

This essay will address some of the legal, social, and economic issues of a post-Darwinian future, pose many questions, and try to make the case that now is the time for

active discussion regarding the development of legal and economic means to greatly reduce—if not altogether prevent—the dangers and pitfalls of the real future shock about to befall all of us, namely, our entry into a post-Darwinian evolutionary era. It will also touch on the possible natures and physical restrictions constraining a post-Darwinian evolution, and discuss our likely motivations for entry into a post-corporeal era, along with the possible attendant social and economic consequences, such as the possibility of the richest rich, as post corporeal beings, so rapidly consuming the world's resources, the poorest poor are starved out of existence. It will conclude with a call for simulations of the world in the not-too-distant future along the lines of the popular game SimCity.

1. Post-Darwinian, post-corporeal scenarios

On the good side of the post-Darwinian, post-corporeal brain augmentation era, we can imagine that attorneys and medical doctors, for instance, would find it useful to store all case law and case histories, respectfully, for ready reference inside sophisticated cranial silico-bio-implants. Armies of financial analysts would find it advantageous to have all real-time data streams piped wirelessly into their heads along with all global news feeds. The flood of information would then be filtered and processed in real time by powerful data crunching neuroimplants to extract exploitable patterns in the less than efficient real world financial markets. The same could be said for soldiers, meteorologists, public health officials, and so on, all to humanity's better good, but there is also a more deleterious side to the technology to consider. Imagine, say, an aggressive financial analyst who, without scruple, would hack into the mental resources of one of his coworkers to steal information, plant a debilitating electronic virus, or even more

maliciously, plant a deadly electronic virus that not only kills its intended victim, but, because of an unintended mutation in the wild, ultimately extinguishes humanity. On a larger scale, consider the neuro-embedded spying, mind control, even population control which, enabled by the mass production and mass use of neuroimplants, may be pursued by governments, or by terrorist groups, or even by a powerful, individual industrialist in the business of supplying neuroimplants.

2. Viruses

Given today's electronic viral instabilities and their ever increasing number and pace, it seems foregone to conclude that if/when humanity begins wide scale use of neuroimplants, the electronic virus problem will grow far worse and far more personal. A brain surgeon for instance, using a neural implant chip to better navigate his telerobotic arm around an MRI-based three-dimensional projection of some lesion might, being infected by some teenager's electronic virus, snip a wrong section of tissue. Would his or her medical practice insurance cover electronic virus liability? What would be the legal standards required to prove that the severity of the electronic infection was the cause of the error versus the probability of it having been caused by a simple, old fashioned mistake? Would the manufacturer of the neurochip be fair game for a lawsuit, the claim being the manufacturer supplied insufficient or faulty virus protection in its product? Would the neurosurgeon who implanted the chip into the neurosurgeon who snipped the wrong section be sued as well? Where would the liability chain stop? Perhaps instead, either in anticipation, or, more likely, after too much damage has been done, lawmakers might require surgeons (and all other high stakes professionals) to undergo industry

regulated virus scans before performing their specialties, cap legal damages, and cut the chain of liability to go no further than the producers of virus scanners. Perhaps lawmakers would relegate the ultimate responsibility of virus scanning to the appropriate government bodies only, say, the Federal Aviation Administration for scanning pilots, and similarly.

3. Cheating

As touched upon in the introduction, a financial analyst, say, with freshly augmented state-of-the-art neuro-implanted capabilities, such as wireless connections to the internet, and new powerful number crunching functions, and so forth, might try to hack in a competitor's mind, via his competitor's own older, lesser capable neuroimplants. What combination of legal deterrents would it take to discourage such behavior before it occurs, and what kind of policing methods would it take to enforce anti-hacking laws and/or to detect hacking crimes after the fact? How would the degrees of the severity of the hacking crime be defined, and, for that matter, what legal elements would have to be proved in a hacking case? Moreover, what types of sentencing guidelines should lawmakers set, and would the victim financial analyst and his or her company be subject to legal action from financially hurt clients for not having used the latest neuroimplant and virus scanning technologies?

4. Murder

Through many a Hollywood film, we have been presented with the idea that the internet may be used as an instrument to produce mass murder, e.g., the use of the internet to change airport approach patterns resulting in crashed airplanes for instance. Along this line, future heart rhythm defibrillators, like today's more expensive automobiles, will likely come built with wireless internet connectivity capabilities to be used to report impending problems to patients and doctors, and even to enable temporary adjustments to be made under more dire circumstances. What is to prevent someone wishing to collect his or her inheritance sooner than later from attempting to kill his or her wealthy, defibrillator using benefactor? Again a whole host of attendant legal and technological questions follow.

5. Post-Darwinian, post-corporeal evolution and ultimate winners

The issues such as those discussed above, and their innumerable variations, have been predicated on human beings remaining, except for their neural implants, essentially as human as our species is today, circa 2004. I, however, very much doubt that once the neuro implant game begins, humanity will remain corporeal for very long afterwards. Research work going back more than a decade and reported in important, peer reviewed journals has demonstrated the joining of neuronal nets with electronics via impaled microelectrodes [8, 9, 10]. More recent research being conducted at the prestigious Max Planck Institute for Biochemistry has reported in Physical Review Letters successful, direct, noninvasive coupling of a silicon chip with the basic element of neuronal learning

via electric fields [6]. Along these lines, Dr. Berger at the University of Southern California is attempting to develop a hippocampus brain prosthesis chip for Alzheimer's disease. Given all this work, I can imagine the eventual development of hybrid silico-bacterial-nanobots designed to directly couple with a person's brain tissue to (1) absorb and archive all the person's knowledge in situ, (2) augment the person's mental capabilities in situ, and (3) connect the person's mind to the wireless internet. Such a person, much as we are oblivious of which brain cells drive our conscious thought, would, through his or her lifetime, remain oblivious that his or her brain cells, dying of old age, are being replaced by more robust, faster bio-silico replacements. He or she may even remain unaware that parts of his or her consciousness may begin to reside inside wirelessly linked extra-corporeal servers, which I dub IQ mindspace servers. With our frail human bodies being so susceptible to damage from bacterial and viral infections, cancers and accidents, why wouldn't the natural progression to humanity's use of neuroimplant technology be to embed itself directly into more robust, redundant IQ mindspace nano/bio-electronic/spintronic-based server farms spanning the Earth in bunkers, or orbiting it, or on the Moon, or beyond. In such an evolved post-Darwinian, post-corporeal world, all necessary interaction with the corporeal world to dig for energy resources, manufacture power plants, produce goods, run laboratories, explore the solar system, etc., could then be done telerobotically using (bio)robots ranging in size from the nano scale and upwards. Clearly, this path, should we take it, will spell the end of evolution by passive natural selection far more rapidly than our current post-genomic tinkering is already doing so. Lifespan lengths will then be indefinite, and humanity, moreover, will have entered the post-Darwinian, post-corporeal evolutionary phase.

5.1 Micro scale conflict, zombies and "unMurder"

In such a post-Darwinian, post-corporeal world, on a smallish, micro scale, a financial analyst might rather infiltrate, overwhelm and ultimately control a competitor's very IQ mindspace's will, making the victim an overpowered lackey—read zombie—with the victim's cohorts, family and friends remaining none-the-wiser throughout some indefinite period. Would it seem reasonable to conclude that the victim would thus be rendered nonexistent, or should he or she be considered murdered and dead? Might it not be possible, the perpetrator having saved his victim's mental assets in some kind of static memory device, that such a murder could be undone? For the undoing of such type of murder, more akin to a coma, would one have to demonstrate to the court by a preponderance of evidence, from family members, friends and associates, under an extensive psychological examination process, that, more likely than not, the victim's characteristics have been restored wholly and with little or no significant corruption? Could spouses claim rape? Could employers claim sabotage? Finally, if the victim could not be legally proven to be unmurdered, would the "entity" remaining behind, unless family or friends took him or her in, be left out in the cold, having no access to any of his or her prior possessions or privileges. In such cases, would it be the government's responsibility to take care of the hapless victims?

5.2 Macro scale conflict and ultimate winners

On a larger, macro scale, the issues of a post-Darwinian, post-corporeal world of competition and conflict would likely acquire a far more ominous tenor. Let us assume that business works as usual, and that the more money one has, the more one could and would use it to augment one's own brain. Then an empire builder such as Mr. Bill Gates, whose wealth exceeds the first billion or so poorest people, now becoming blessed with an indefinite cyber-based lifespan and controlling an army of employees, agents, as well as an army of semi-autonomous robots could come to dwarf humanity in a way the mortals Khan, Napoleon, Hitler, or Stalin never could. A post corporeal Mr. Bill Gates, occupying one of the world's largest IQ mindspace server farms, could in principle be running in the background all manner of (bio-molecular manufacturing based) factories, laboratories, fossil fuel extraction operations, and conventional, nuclear, solar or other types of unconventional power plants, with all of these facilities being manned by an army of semiautonomous robots ranging in size from the nano to the macro scale under his direct control, whilst he simultaneously occupies himself with manifold other activities. Moreover, unless he is either forced by some form of economic and/or legal system, or is philanthropically inclined, there is no fundamental reason why he should have to share his advancements with the remainder of humanity. Instead, he would rather likely not share his scientific and technological advancements for fear of giving any advantage to any potential, or real rivals of his own class. The richest rich will thus likely leave the poorer classes commensurately scientifically and technologically behind at an ever increasing pace, and this leads to two worst sub cases for the poorer classes, each of

which could spell the end of humanity, save for a few ultimate winners, or even one ultimate winner.

Let me explain what I mean by the phrase one ultimate winner. Let us suppose that we are in that period when the human race is transforming itself into an advanced post-corporeal IQ mindspace society which, for technical and/or economical reasons, remains bound to Earth. To continue to exist, the society must continue to consume resources to extract and use useful energy, with the supply of useful energy being restricted to what can be extracted from the Earth, the moon thru tidal power or lithium mining, and captured from the Sun. These energy constraints, then, would be the physical constraints restricting the initial post-Darwinian, post-corporeal evolution.

Let us consider the worst case. Even if it is the case that the available supplies of energy, and the ability to exploit them with advanced technologies, are, by our present (corporeal) standards, illimitable, there is no apriori requirement that the transformation of humanity into IQ mindspace resources be done so equally or equitably according to current moral standards. At present, the poorest man and the wealthiest man cannot personally consume a significantly disparate amount of food and water on a day-to-day basis. But the wealthiest man, if his wealth be proportionately converted into IQ mindspace server capabilities (to store vast libraries of knowledge and acquire massive amounts of computational power to simulate market behavior, develop even more advanced technologies, and so forth) would dwarf the energy usage of the poorest man (reduced to a small IQ mindspace server if at all) by many orders of magnitude. Then, in

much the same way that Earth's current, most advanced species is using increasingly greater planetary resources at an ever accelerating pace—because its science and technology are accelerating at an ever increasing pace—extinction of the less advanced beings of the future will happen at an accelerating pace in proportion to the rate at which their resources get usurped. That is, the richest rich, by rapidly outpacing the science and technology of the rest of humanity, will rapidly come to consume so much of the energy from the Earth, the Moon and the Sun, to the maximum rate physics allows, that the poorer (lower IQ mindspace) classes will literally be starved out of existence. Then, ultimately, after the sun is no longer useful, the richest rich will either migrate elsewhere in the galaxy, or, should it be the case that for physical reasons interstellar space travel never becomes practicable, the richest rich too will die out when the Sun can no longer be tenably exploited, and the human story ends.

Two notes to the worst case:

(1) Regarding the world's poorest people being converted into IQ mindspace entities, I wrote above that it might not happen at all to cast doubt that the conversion would necessarily happen to all of us. Not many of today's billion poorest can readily buy a low-end personal computer, let alone a massive supercomputer server farm. Thus it may be the case that a large fraction of humanity may be dropped off the evolutionary tree, but, as explained in the preceding paragraph, this is not to say that the situation for most of the remainder of humanity, from those with enough assets to purchase entry level IQ mindspace servers up to, but not including the richest rich, is any less dire. As has been argued above, we could all of us, en masse, be starved out.

(2) Nothing so far expressed, including physical limitations, fundamentally precludes the eruption of IQ mindspace class warfare, and the possibility that only one future being might, by quashing out all other life (either directly or by passively starving the rest out) become the ultimate winner of Earth's four billion year old evolutionary competition, except perhaps the speed of light. It may be the case that the Earth is simply too big (light taking about 0.064 seconds to travel half way around its circumference) to allow a single being to maintain coherence between distant parts of itself, especially if the situation is very fluid. The larger dinosaurs for instance, with long distances between their brains and tails, and slowly traveling nerve signals, likely found it very disadvantageous to only eventually feel their tails being bitten by some rival. Thus, instead of there being one ultimate Darwinian winner dominating the Earth, it may be the case that there will be a multitude of such grand winners, with the "size" of the area of their control being limited to the longest reaction times that still allow them to maintain coherence across their largest dimension within a fluid, competitive environment.

Given the latter case, namely, a population of grand winners, many more complex questions would arise. Among the first questions would concern population dynamics. Would there be tens of grand winners, or thousands, or even larger numbers of winners? Would they reproduce? It seems logical to believe that electronic/quantum computing beings would find sexual or asexual reproduction simple to do, and the process would likely consume little time. Among the winners and their progeny, we might then ask what kind of predator/prey dynamics would prevail. Control and coherence of the society,

moreover, would also become an issue as the society spread out further from Earth, first reaching the moon and nearby planets, then venturing further out yet. Two great sources for further reading regarding many possible futures of post corporeal and arbitrarily advance life, each providing many references, are, respectively, Barrow and Tippler [11] and Kurzweil [12].

6. A Different post-Darwinian future—A better case

It is well researched and documented that collections of people working together on a common problem make better collective decisions the majority of the time than individuals themselves do [13]. Perhaps, if it cannot not be rigorously proved by iron clad mathematical argument, it can at least be reasonably demonstrated through various game theoretic studies that the net value of humanity would rise faster in a post corporeal world wherein everyone is allowed to continue to exist in peace, and no one person (or small group of persons) is allowed to dominate the world through unrestricted, electronic post-Darwinian, post-corporeal warfare. Such a demonstration would then provide humanity with a rational motivation for a smooth, controlled, legally regulated, economically constrained transition to post corporeal life. Yet even if the opposite were true according to theoretical modeling—that, in other words, the net value of humanity would grow more rapidly with unrestricted Darwinian warfare being allowed—I can imagine that very few people would willingly give up their existence for some mathematically demonstrable greater, but abstract good. Thus, there will either be a powerful and rational reason, or a powerful, self-preservation-based motivation to seek out a controlled, policy-

based transition to post-corporeal life. Two simplistic, first order cases come to mind.

Sub case I: Individuals are not allowed to transfer themselves to superior IQ mindspace servers. Everyone will share equally the fruits of all scientific and technical advances.

Sub case II: Individuals may transfer themselves to IQ mindspace servers with capacities/capabilities commensurate to their wealth. However, most economic relationships existing prior to the post corporeal transformation will remain intact. Mr. Bill Gates will be required to keep his secretary. His secretary however, no longer a corporeal being, will not be required to use the services of a dentist. Dentists will have to find some new role in the post-corporeal world. Again, everyone will share equally the fruits of all scientific and technical advances. This post-corporeal transition will cause economic displacements much like the industrial revolution did. Certain elements of the workforce, as weavers and gun makers were once obviated by machines, will too be obviated, but novel opportunities will likely arise if history is any guide.

Any such physical limits as those expressed above, designed to prevent a single, singular winner (or smallish group of winners) from ultimately usurping all resources would likely then lead to new kinds of legal and economic systems also with novel predator/prey resource relationships quite apart from those of today and yesteryear, or they might lead to a strange admixture of old and new systems.

7. Conclusions and future work

Currently, we are in a period when our sciences and technologies are rapidly fusing together such that an advancement in one field rapidly parlays itself into advances in other fields. Consider as an instance the advancement of DNA biology in part leading to DNA computation, and conversely, the use of advanced robotics, powerful computers, and advanced computational algorithms to decipher our DNA-based genome. It follows then, unless there are limitations we have yet to run into, that the greater our scientific and technological capabilities become, the increasingly faster we develop even more advanced scientific and technological capabilities, including those which enable our fusion with our technologies. Certainly there can be no denying that we have steadfastly, and in my opinion, ineluctably, entered a post-Darwinian era which may rapidly, within a few decades, go post-corporeal. Accordingly, as is the case with the United States Social Security, and its aging population base, we are beginning to face unprecedented social, legal, economic, and political ramifications which need to be addressed now, before all hell breaks loose. If Darwinian evolution is about biological systems exploiting every possible, physically allowed niche and propagating the most fit specimens through natural, passive selection, without moral, man-made considerations, there is no fundamental reason post-Darwinian evolution—with or without a post-corporeal transformation—should, apart from involving active selection, be in any way less indifferent to us, unless we make it so. We need to begin to study these impending possibilities now. Thus again, now—before it is too late and only one, or a few winners walk the Earth—is when we should be asking what means the remainder of us poorer people might use to avoid our passing away into the dying of the light. To this end, I

believe it would be not only interesting, but also of the utmost importance, to not only begin to simulate the social, legal, economic predator/prey systems imagined above under various physical limitations, but many more situations so that we may begin to ferret out those solutions we can all of us be reasonably happy with during our post-Darwinian and/or post-corporeal transformation. Perhaps a good beginning would be the use of games such as SimCity, modified to play out various post-Darwinian, post-corporeal scenarios, e.g., stock broker versus stock broker, etc. Along these lines, Professor Ian Lustick at the University of Pennsylvania, for instance, is modeling the social structure of Pakistan with a Sims-like game. Someone out there should seek grant money to do the same thing for post-Darwinian, post-corporeal societies.

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Thank you Dr Alaniz for letting me post your essay. I believe that the Christian Meme,

and an integrated Perennial Philosophy will carry us through these challenges.

"But the day of the Lord will come as a thief in the night; in the which the heavens shall pass away with a great noise, and **the elements shall melt with fervent heat**, the earth also and the works that are therein shall be burned up.
Seeing then that all these things shall be dissolved, what manner of persons ought ye to be in all holy conversation and godliness, Looking for and hasting unto the coming of the day of God, wherein the heavens being on fire shall be dissolved, and the elements shall melt with fervent heat? Nevertheless we, according to his promise, look for new heavens and a new earth, wherein dwelleth righteousness." (2 Peter 3:10)

Scientific American March 2005; "If the acceleration (of our expanding universe) itself increased, **it could eventually grow strong enough to tear apart all structures**, leading to a "big rip." Nothing in the material universe can survive this.

"Saying with a loud voice, Fear God, and give glory to him; for the hour of his judgment is come: and worship him that made heaven, and earth, and the sea, and the fountains of waters. And there followed another angel, saying, Babylon is fallen, is fallen, that great city, because she made all nations drink of the wine of the wrath of her fornication. And the third angel followed them, saying with a loud voice, If any man worship the beast and his image, and receive his mark in his forehead, or in his hand, The same shall drink of the wine of the wrath of God, which is poured out without mixture into the cup of his indignation; and he shall be tormented with fire and brimstone in the presence of the holy angels, and in the presence of the Lamb: And the smoke of their torment ascendeth up for ever and ever: and they have no rest day nor night, who worship the beast and his image, and whosoever receiveth the mark of his name. Here is the patience of the saints: here are they that keep the commandments of God, and the faith of Jesus." (Revelation 14:7)

 Love rules and ignorance dies! Just like the movies, good will win in the end. The same technology is available to loving individuals. This technology is better adapted to the love process. We will focus the motivating energy into the passion necessary for transcendence. The Antichrist will likely emerge but so will Christ. This becomes a sign that Christian Transhumanism is the way. Here is my advice: Use *The Love Process* now and forever. Here is the love process again; Technically, love can be seen as the process of connecting. The product of the love process is understanding. If the process is efficient and sustained, understanding increases exponentially. Peace allows unwavering attention so that the love process can establish a clear connection. At the heart of the process; symbols, words, and feelings are ordered into meaning. But meaning is not static, it grows forever. Forgiveness is important to spiritual growth because it establishes an exhaust for misunderstanding and disorder. Put this all together and you have *The Perfect State of Mind*. With these principles we will build the New Temple; a society of loving individuals. Anything that empowers the Love process has the blessing of God. You can do no wrong when the spirit of love, the Holy Spirit is with you. And, It is said; "If you
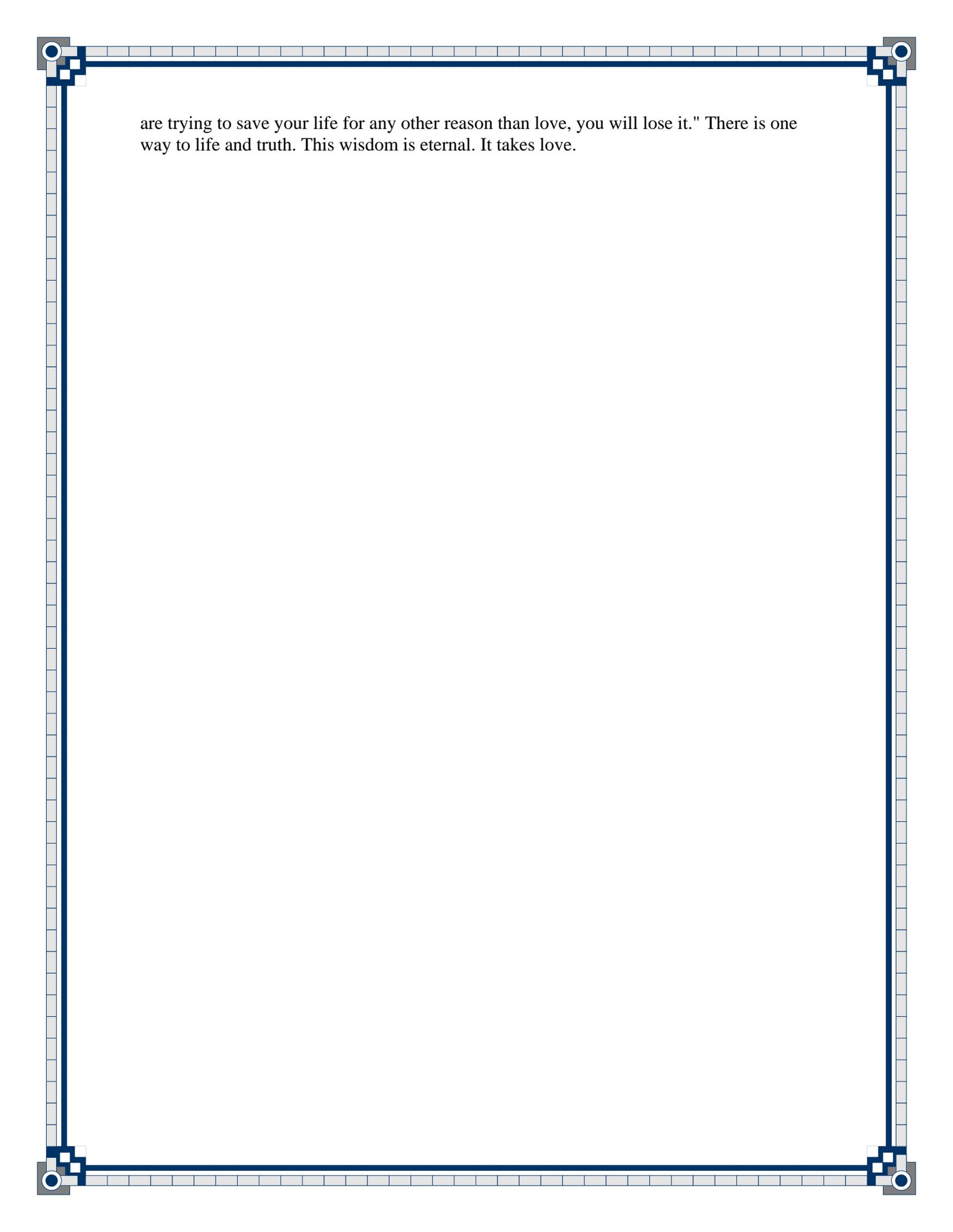
are trying to save your life for any other reason than love, you will lose it." There is one way to life and truth. This wisdom is eternal. It takes love.

The Word of God And the Seed Parables

Jesus says we are the Son of God if we do God's will; "For whosoever shall do the will of God, the same is my brother, and my sister, and mother". (Mark 3:35) Gods Will; learn to love. So it becomes very important to understand the love process. Love is essentially the process of connecting. The product of the love process is understanding. If the process is efficient and sustained, understanding increases exponentially. Peace allows unwavering attention so that the love process can establish a clear connection. At the heart of the process; symbols, words, and feelings are ordered into meaning. But meaning is not static, it grows forever. Forgiveness is important to spiritual growth because it establishes an exhaust for misunderstanding and disorder.

What does the bible say about connecting to, and understanding the word? Read "Word" in the bible as data that becomes information as you digest it. And seeds are ideas. Then understand that what is essentially "you" is mind.

- In the beginning was the Word, and the Word was with God, and the Word was God. The same was in the beginning with God. All things were made by him; and without him was not any thing made that was made. In him was life; and the life was the light of men. (John 1)
- "But he answered and said, It is written, Man shall not live by bread alone, but by every word that proceeds out of the mouth of God." (Matthew 4:4)
- "For the bread of God is he which cometh down from heaven, and giveth life unto the world. Then said they unto him, Lord, evermore give us this bread. And Jesus said unto them, I am the bread of life: he that cometh to me shall never hunger; and he that believeth on me shall never thirst." (John 6:33)
- "There is a natural body, and there is a spiritual body. Now this I say, brethren, that flesh and blood cannot inherit the kingdom of God; neither doth corruption inherit incorruption." (1 Corinthians 15)
- "And the city had no need of the sun, neither of the moon, to shine in it: for the glory of God did lighten it, and the Lamb is the light thereof." (Revelation 21:23)

The Seed Parables

In the old testament seed was genetic information. For Jesus in the New Testament seed becomes food for thought and deeds. Read on and you may be inspired by the Holy Spirit!

- "But he that received seed into the good ground is he that heareth the word, and understandeth it; which also beareth fruit, and bringeth forth, some an hundredfold, some sixty, some thirty." (Matthew 13:23)
- "Now the parable is this: The seed is the word of God. Those by the way side are they that hear; then cometh the devil, and taketh away the word out of their hearts, lest they should believe and be saved. They on the rock are they, which, when they hear, receive the word with joy; and these have no root, which for a while

believe, and in time of temptation fall away. And that which fell among thorns are they, which, when they have heard, go forth, and are choked with cares and riches and pleasures of this life, and bring no fruit to perfection. But that on the good ground are they, which in an honest and good heart, having heard the word, keep it, and bring forth fruit with patience. No man, when he hath lighted a candle, covereth it with a vessel, or putteth it under a bed; but setteth it on a candlestick, that they which enter in may see the light. For nothing is secret, that shall not be made manifest; neither any thing hid, that shall not be known and come abroad. Take heed therefore how ye hear: for whosoever hath, to him shall be given; and whosoever hath not, from him shall be taken even that which he seemeth to have." (Luke 8:11)

- And he said, So is the kingdom of God, as if a man should cast seed into the ground; And should sleep, and rise night and day, and the seed should spring and grow up, he knoweth not how. For the earth bringeth forth fruit of herself; first the blade, then the ear, after that the full corn in the ear. But when the fruit is brought forth, immediately he putteth in the sickle, because the harvest is come. (Mark 4:26)

- Another parable put he forth unto them, saying, The kingdom of heaven is like to a grain of mustard seed, which a man took, and sowed in his field: Which indeed is the least of all seeds: but when it is grown, it is the greatest among herbs, and becometh a tree, so that the birds of the air come and lodge in the branches thereof. (Matt 13:31)

- He that soweth the good seed is the Son of man; The field is the world; the good seed are the children of the kingdom; but the tares are the children of the wicked one; The enemy that sowed them is the devil; the harvest is the end of the world; and the reapers are the angels. As therefore the tares are gathered and burned in the fire; so shall it be in the end of this world. The Son of man shall send forth his angels, and they shall gather out of his kingdom all things that offend, and them which do iniquity; And shall cast them into a furnace of fire: there shall be wailing and gnashing of teeth. Then shall the righteous shine forth as the sun in the kingdom of their Father. Who hath ears to hear, let him hear.

The mind is a process that is sustained by word. It is configured for love. Think about the cognitive sciences today; We study every detail of how we come to understand and act. And we strive to improve on every step of the process. We have sensor evolution, knowledge management and sense making algorithms even wisdom algorithms in artificial intelligence. Can you see how it is possible for man and his technology to participate in God's Plan?   This is the heart of Christian Transhumanism.

Where does word come from?

You know, what you are connected to. You are connected to the world, to others, and your self. You know this because you <u>sense it</u>. You can see, hear, taste, feel and smell it. This sensation is a flow of data. There is essentially three sources of data that come into your awareness; data coming from the world, data coming from others, and from the self. Loosely speaking, these channels have grown to be called science, meditation, and business. Place yourself in the center of these things.

<u>Science</u> is a good spirit looking for truth. It is the act of looking upon God's creation for answers. This is good because the creator speaks to us through the world. The creation is a message, essentially a word. But science is imperfect because we have the idea that science must always be objective. So, it can never model the subjective experience, the spirit of life. Our science leads us to knowledge but never fully to enlightenment.

<u>Meditation,</u> self reflection, and contemplative prayer is a good spirit looking for truth. You shed the baggage of ego. Ultimately, you become selfless and streamlined down to your essence. You sense the miracle of being. And you become aware of your infinite nature. Intuition and feelings well up from a source within. But, the problem is, you are not alone in this world and life is competitive. After thousands of years of contemplative prayer we still have hunger and wars, because the loving path of contemplation is an inner path and a movement away from human relationship.

<u>Business</u> is essentially about relationships; how we live and grow together. It is how we provide for our needs and, what someone should get in return for their works. The problem is, today's business is a competitive animal concentrating on material needs. It is not tuned to satisfying our spiritual potential.

It is easy to make the mistake of heading down one of these paths and ignore the others. But, ignorance is a disconnection...So Ignorance dies. For the sake of humanity it is absolutely essential that spirituality is empowered by science which is empowered by business, which in turn is empowered by spirituality. "A threefold cord is not quickly broken." A good strategy is to remain open minded and to make a deep connection to all the aspects of existence. This ultimately leads to selfless love. Love is the most powerful and lasting connection a being can make. Love is expressed when you give your full attention, your time, and your focus to someone or something. Here is the fundamental connection between science spirituality and the meaning of life; Love is a mode of understanding. It is uniting. It is spiritual. To know something is to love it and to love something is to know it. With this truth we can make way for our salvation.

It should be no secret, sense the message. Understand the word of God. Make meaning of it and apply it. With the same measure you use it, it will be measured to you. And to you who hear more will be given. (Mark 4:21-31) Expect exponential spiritual growth.

Through wise growth a transcendent culture will emerge from life on earth. I call this Convergence. Convergence is the next major event in evolution. It is a natural force pressed by overpopulation, dwindling resources, and natural catastrophes. We are good at survival and soon we will get the clue that God is the only answer. **Convergence is the inevitable growing back to God. It means that all the spiritual works and experience of man necessarily come together to a new kind of sincere, intentional, and extremely powerful worship.** "Because strait is the gate, and narrow is the way, which leads to life, and few find it." (Matthew 7:14) We converge on the same temple. And, convergence is salvation. This is where a good spirit always leads. Salvation is;

- becoming directly aware of God (Revelation)
- liberation from the competitive and destructive aspects of life (Transcendence)
- eternal life with ever increasing enlightenment (Hyper Evolution).

Convergence is liberation from confusion and misunderstanding. The liberating Idea of convergence is that your complete salvation depends on loving the full aspect of God the person everywhere he is found. Confusion arises when we concentrate on and speak about just one aspect of God, ignoring the others. You can find the immanent aspect of God in

- the relationship with yourself,
- with others,
- and the creation. Loving God includes paying attention to the creation as if it were a gift, something God is saying to us.

And, there will always be a transcendent aspect of God. The transcendent aspect of God is reached for in an act of faith. There must always be faith.

This kind of salvation is complete because it puts you on the path of eternal growth. Complete salvation cannot be gained focusing only on static

religious doctrine, *and* it is not a material thing you can buy at some store in the future. It requires spiritually driven progress in science/technology and even business. These three different social efforts are converging on salvation because there is only one way to eternal life. The vast potential of society is found in our differences. *There is potential in difference, potential to work out creative solutions. Today we have the social capital to transcend this world. We can work it out.* Here is what the Bible has to say about coming to understand your salvation.

"Therefore, my dear friends, as you have always obeyed--not only in my presence, but now much more in my absence--continue to work out your salvation with fear and trembling, for it is God who works in you to will and to act according to his good purpose."
(Philippians 2:12)

Convergence

The path to God is wide as we are different. And, the path to God converges on his calling. Where can we find God's full signal? The answer: In His Temple. Then where is his temple? It is where God is worshipped. Jesus says worship God in **Spirit And Truth**. Spirit and truth is the temple.

First, The temple is a state of mind; respect truth, value truth, receive truth gratefully. Love truth. In this way love is a pure and noiseless signal and perfect reception. No lies, no confusion. It is perfect interaction with his call.

Second, worship God in spirit. React to the call. The spiritual aspect of the temple is creative actions. Your actions stand forever, leaving an eternal trace in space and time.

So, worship God with perfect interaction and reaction. What if we are not perfect? Forgive and grow. Such is the spiritual life. The graphic below sums it up.

The Seperate

I Am

You are

The world is

The Connected
Perfect interaction
By Selfless Love

Eternal Transcendent God

Spiritual Growth Lead by Faith

A Key Element; Know that we sin and that we are forgiven

Forgiveness

The seperate are connected perfectly by selfless love and grow spiritually through forgiveness and faith.
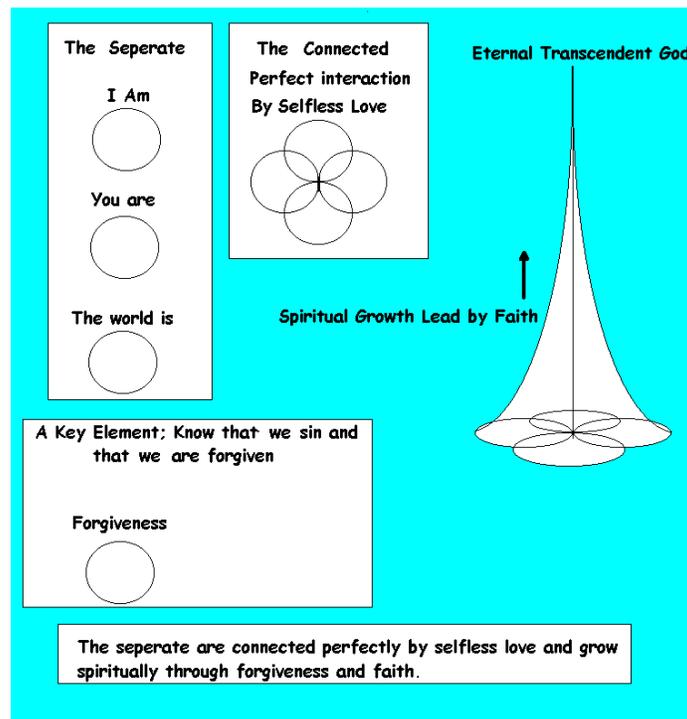
The Attention Economy
You pay attention and receive an experience

The Economies
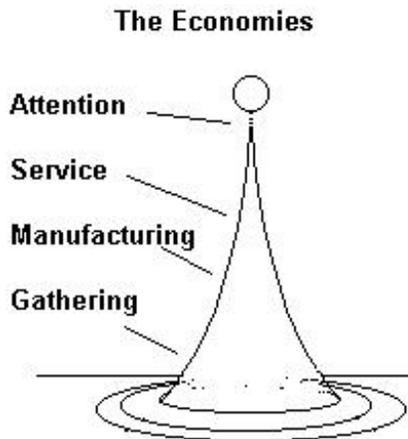
In the field of business there is hope. A new sector of our economy is emerging. It is called the attention economy. With our robust communication systems we have grown connected to each other, and to the vast amount of information we have collected over the ages. We are free to pick which of this we pay attention to. Once data is "mined" and worked into information it can be sold. But no one can maintain a monopoly on information. Information will be free. It dissipates following God's will; the second law of thermodynamics. So now we have a situation (in this brief age of abundance) where there is a vast amount of information available but a limited supply of attention. Businesses are essentially competing for our attention. Webster defines attention as "the giving of one's mind to something". Giving your mind to something is no small thing. Attached to your mind is your spirit and your resources. When we concentrate on something, social capital is endowed upon it. **This makes your attention precious.** It is better than money. What you *pay* attention to is yours to decide. What do you get for paying attention? You receive an experience. The value and worth of the experience is measured in **potential for your growth**. A rich experience is called a flow experience. This is what to look for:

In The Flow Experience there is;

◎ **a clear goal,**

◎ **concentration on the task at hand, worries and concerns are suspended,**

◎ **immediate feedback, you know instantly how well you are doing,**

◎ **a sense of growth and of being part of some greater thing,**

◎ **a feeling that time seems to pass faster,**

◎ **expansion of self through the experience.**

The flow experience is great, but lets turn the reality knob up to 11. The greatest experience of all is called The Glory of God. It is all the things that flow is but adds powerful beauty, magnificence, and ecstasy. Glory is a rush. The spiritual becomes real. Glory happens when you turn your full attention (as in Love) to God, and turn the power up to **PASSION!**

The highest quality of attention is love. Love is expressed when you give your full attention, your time, and your focus to someone or something. Here is the fundamental connection between science spirituality and the meaning of life; Love is a mode of understanding. It is uniting. It is spiritual. To know something is to love it and to love something is to know it. With this truth we can make way for our salvation.

Knocking on Heavens Door...If you are not trying, you are dying.

[The University of Princeton Engineering Anomalies Research](#) has actually found that our intentions has a slight non-local effect on the outcome of things. This effect is stronger when we enjoy or love the experience. There is no physical explanation for the process. As with all science the next step is to come to understand the natural principles behind this phenomena. Then the next step is to develop the technology to further "subdue the world" with God's resonating help. Here is a quote from the Princeton page; "Beyond its scientific impact and its technological applications, clear evidence of an active role of consciousness in the establishment of reality holds sweeping implications for our view of ourselves, our relationship to others, and to the cosmos in which we exist. These, in turn, must inevitably impact our values, our priorities, our sense of responsibility, and our style of life. Integration of these changes across the society can lead to a substantially superior cultural ethic, wherein the long-estranged siblings of science and spirit, of analysis and aesthetics, of intellect and intuition, and of many other subjective and objective aspects of human experience will be productively reunited." If you want to enter the kingdom of heaven just knock on the door. Just try. Apply your creative will to it.

We have been trying to transcend our condition all along. We are a part of a self ordering universe. Looking over the span of time we see progress, from the single celled organism to the human mind. We see progress from the Stone Age to the computer age. Essentially this progress is an increase in the depth of information contained in living things. Scientifically, the point of this progress is to better adapt to the environment. Spiritually the point of this progress is to strive for and know God. I have a theory that God's ordering principle is; **information attracts (loves) more information**. This attraction is another force in nature. The more information there is in objects, the deeper and the more different it is (asymmetric) the stronger the attraction. A connecting harmony emerges. This

applies to subatomic particles and highly ordered human societies. **There is an actual potential in difference.** Here are some examples:

- Protons and neutrons order in the heart of atoms by communicating with nuclear force essentially telling each other what they are and where they are. This communication binds them together.

- Atoms reach out to communicate with other atoms using an electromagnetic force essentially telling each other what and where they are. They order into materials and things.

- Planets and stars reach out by the gravitational force. They order into solar systems and galaxies.

- Human beings reach for information with the senses of touch, seeing, hearing, taste and smell. Attractions lead to families and societies. Fear leads to separation and wars. At this level and above, the ordering principle might be called the life force.

- And imagine another world of people, ancient and wise existing across the galaxy. What would you ask them? The information exchange would be fantastic! As you know, the possibility of this has lead the human race to sending satellites into deep space, and setting up listening stations, hoping for communications from such a race. It is as if information attracts (or loves) more information.

- God expresses his love and man worships, providing the greatest asymmetry and so the greatest potential for creation.

[Asymmetric information](#) is one of the latest concepts studied by economist. Work on this won the Nobel Prize in Economics in 2001. Asymmetric information is a parameter that measures the profit potential of information. Corporations and individuals with the "inside scoop" or the best information about a deal, stand to profit.

Businesses working the Information Economy have only one way to grow, to the singularity. After we have bought all our material needs and wants, what is left? We turn our attention to the excellent experience. God is the creator and sustainer, the ultimate source of wisdom, and the excellent experience. This "economic force" leads to an eventual convergence with the search for truth in science and spirituality.

The Health of the Attention Economy

The health of the attention economy can be measured in the types of advances we make in communication education and research as well as the advances listed below in "How we are building the Interface". Good information should be readily available to all. A wise society would recognize the components of the attention economy and help it grow. Along with the Dow Jones Industrial Average you would see The Information-Attention Economy Index. Its growth and potential profit should not only be fantastic, in theory it should be infinite.

This growth is natural. It is good. It is the will of God. But there is a disease. Some still believe that "knowledge is power to control others" and they will do whatever is necessary to restrict access to key information. You know this is true you see it where you work. But don't worry they are ignorant. They act out of fear and do not understand they are trying to hold back the infinite power of God. Ignorance dies. It is a narrow gate.

The act of trying to learn and understand is worship. In a free society you have the right to worship. In reality your education, and the components of the Attention economy are a religion and should not be subject to taxes. This worship is a good thing. It is inevitable. We do it naturally. Progress is certain to continue. It is the "Groove" and the meaning of our lives, to learn, to order, to create, and to make things better for the next generation. Knowing God makes evolutionary sense. Knowing the way, Gods will, is handy for survival. It is even dangerous not knowing God's will. Again, It is a narrow gate.

Are there Limits to our Understanding?

We do not limit ourselves and God does not limit us, but we are up against a wall. The instruments available to the scientist allow him to probe the unseen. The data we receive from particle accelerators and telescopes is patterned into theories of a strange world. **The reality revealed by today's science is fundamentally alien to the human mind and defies all power of direct visualization.** The models we construct in our mind of a singularity or curved space are inadequate, they serve to fix a topic in our minds rather than inform us as to how the physical world really is. Richard Feynman (the father of quantum electro-dynamics) says no one understands quantum mechanics. We cannot understand completely the concepts of INFINITY, TIMELESSNESS, and DIMENSIONS beyond what we observe in our own environment. To move to the fourth dimension, or space-time, in our thinking, requires mathematical models.

This is the wall of mystery as it stands today. What hope do we have of ever understanding the infinite, extra dimensions, or timelessness if our minds are just not able to grasp these concepts?

The Interface is the Temple

We need Technology to crack this nut. It is a good tool for extending our selves. The learning spirit within us is strong and it is represented with this attitude: There is a truth out there and we have the spirit to find it. Life has filled this world and man has tested all the environments available to us: the poles of the earth, underwater, and space. We are learning that none are practical paths for growth because our bodies cannot adapt to those environments and physical evolution takes too long. We would be bringing our environment to those locations, which is a highly unstable situation. And as we sit here, we are poisoning the only environment we can live in. Maybe we could tinker with our genetic makeup? I suggest that all hell would break loose. Mental evolution is the answer. Consider that the mind is our essence, and it is connected to the body only out of necessity, then there is a new environment for life to grow into that is emerging from our own hands. Our mind is connected to the world through our senses and we are capable of extending and augmenting our senses with technology. Eventually the mind will cross this interface, enter a new environment and transcend the body. God's people have always been travelers. About entering the kingdom of God it is said "Knock and Ye shall enter." Convergence is the "knock of love" and salvation. Evolutionist would call it a "JUMP" in punctuated evolution. Considering the ever increasing revelation, I call it hyper evolution.

How we are Building the interface (Press Releases)

The Brain Machine Interfaces Program at the [DARPA Defense Science Office](#) represents a major DSO thrust area that will comprise a multidisciplinary, multipronged approach with far reaching impact. The program will create new technologies for augmenting human performance through the ability to noninvasively access codes in the brain in real time and integrate them into peripheral device or system operations.

Miguel A.L. Nicolelis at Duke University has developed **Hybrid Brain-Machine Technology** for Real-Time Control of a Robotic Arm Completed three of the major objectives of [DARPA-ONR](#) project by demonstrating the feasibility of using brain derived signals to control the 3D movements of robotic device.

Cyberkinetics (Foxborough, MA) is a leader in the rapidly emerging field of brain computer interfaces. Cyberkinetics' technology allows for the creation of direct, reliable and bi-directional interfaces between the brain, nervous system and a computer. The development of safe, robust implants for recording from, and or stimulating, the brain surface will open the potential to study other complex signals from the brain. Cyberkinetics technology platform, called BrainGate™, may allow breakthrough applications which leverage the translation of thought into direct computer control. Such applications may include novel communications interfaces for motor impaired patients, as well as the monitoring and treatment of certain diseases which manifest themselves in patterns of brain activity, such as epilepsy and depression.

BrainGate: First Clinical Trials Planned for 2004
Cyberkinetics' lead product effort is the BrainGate Neural Interface Device. Based on ten years of development at Brown University, the BrainGate device is intended to provide severely disabled patients with a permanent, direct and reliable interface to a personal computer. Pending continued preclinical research success and regulatory approval by the Food and Drug Administration, the Company intends to initiate a pilot clinical trial in 2004. Plans for this trial involve implantation of a BrainGate device in up to five severely disabled patients. The implant will allow signals from the motor cortex to be collected, processed and analyzed, eventually producing an interface with a personal computer. In this way, BrainGate should afford these patients the opportunity to use the computer as a gateway to communicate and control simple devices in their immediate environment.

The [Princeton Engineering Anomalies Research (PEAR)](#) program was established at Princeton University in 1979 by Robert G. Jahn, then Dean of the School of Engineering and Applied Science, to pursue rigorous scientific study of the **interaction of human consciousness with sensitive physical devices, systems, and processes common to**

contemporary engineering practice. Since that time, an interdisciplinary staff of engineers, physicists, psychologists, and humanists has been conducting a comprehensive agenda of experiments and developing complementary theoretical models to enable better understanding of the role of consciousness in the establishment of physical reality.

Kensall Wise, now a professor at the University of Michigan in Ann Arbor, has perfected **an [electronic probe](#) that can be implanted deep into brain tissue and used to send information to, and receive information from the brain**. [Microelectronics.](#)

MIT's Robert S. Langer's work is **at the interface of [biotechnology](#) and materials science**. He has begun crafting a polymer that conducts electricity. When placed between two ends of a severed nerve, **the polymer provides a trellis for nerve tissue to grow along and can carry the neuron's connective electrical impulses.**

Using the speed of microprocessors to crunch differential equations, [Eve Marder](#), a neurobiologist at Brandeis University, has developed **a computer program called the [dynamic clamp](#) that can translate neuron-speak in real time**. Electrical impulses are transmitted to the computer through probes inserted into the neuron. T**he neuron reacts as if it were communicating with another neuron, not a computer**.

Scientists from Emory University implanted a chip in the brain of a paralyzed stroke victim that allows him to use his brainpower to move a cursor across a computer screen. Emory University neuroscientist [Philip R. Kennedy](#), M.D., and Emory neurosurgeon [Roy E. Bakay](#), M.D., have developed an **electrode brain implant that is allowing speech-impaired patients to communicate through a computer. See: [brain implants.](#)**

[Bionics](#) often refers to the replacement of living parts with cybernetic ones, but more broadly it also means engineering better artificial systems through biological principles. As an example we are able to send video images to light-sensitive areas on an electronic chip. The chip turns the light into electric signals that are sent to the retina. The brain takes it from there. Cochlear implants have returned at least partial

hearing to profoundly deaf persons. These devices, surgically embedded in the inner ear, use several electrodes to stimulate the auditory nerve.

Neural Net Computation Neural circuits in the human brain and electronic circuits in computers work in very different ways. As a result, computers can make many more computations per minute than a person, but they fall way behind in solving complex, undefined problems. Now scientists at Massachusetts Institute of Technology and Lucent Technologies' Bell Labs have developed an **electronic circuit that more closely mimics the circuitry of the brain**. Conventional electronic circuits are either distinctly analog or digital. Analog circuits record data by linear, constant physical changes in something like an electric charge. Digital ones process data in the form of discrete, numerical values that don't have to go up and down sequentially. But brains combine both types. The new circuit combines analog and digital feedback systems, so it functions more like a neural circuit in the brain. **Neural net** computers are being used to model the stock market and the weather. Neural Network links: **PNLL** **Neural Network Information**

What to expect at the interface

What happens when we learn to love perfectly? The interface changes you. You have to streamline yourself by becoming selfless to make this evolutionary jump. Here is what I imagine happens at the interface. I call the following list The Nelson Principles, after a beloved Professor I had the honor to work with and learn from; Dr. George Nelson at the University of Arizona.

a. The mind is an electromagnetic multidimensional phenomena arising from brain tissue. This can be transformed into, and synchronized with a suitable electromagnetic environment where it can be amplified. Full spectrum sensors across the earth and space are connected to this environment. The complete wisdom of mankind is also available in solid-state memory with sufficient bandwidth to allow full apprehension of this wisdom.

b. In the new environment you make meaning because that is in your spirit. Just as you did when you were first born. And, the thing you learn is you can't control the flow of meaning. It is coming too fast and it is awesome. It is humbling and joyful at the same time. But you understand the path to take. And, you learn that this path is infinite and you take some comfort in that. Because you love it and you know it will last forever. You become worship. Now you know what you can trust. Lack of trust was slowing your growth down.

c. You are changed. To know is to be a saint. Understanding of the direction to God yields grace and love. You become benevolent. Being beyond the material requires that the ego go.

e. Consciousness apart from the flesh is equivalent to deliverance from sin and suffering. You are no longer competing. You are in harmony.

f. The very thought of controlling others repulses you. It is boring, you don't look back. Instead you share and you relate your experience. You are walking a path you could never have walked before. Yet, it is familiar, it reminds you of life in space-time at it's best, when you were in the groove. And this is why the rest of the universe seems silent

of life. Before alien societies obtain the ability to travel light-year distances they follow this transcending path. Like Elvis, the aliens have "left the building".

g.   Suffering is for those who stop this pure worship to say let me try the controls for a while. But, this eventually turns into a contemplation of the self and stagnates. My ego was a direction. It was self-referential. It was a direction that withers. It was death. You could say your life with it's self referential consciousness was an eddy in the river of God's will, a dance in space-time and a whorl in the grain that will last an eternity.

h.   When the truth is revealed to you , you don't just see it, you be it. Knowing like you know how an apple feels, smells and tastes is called apprehending, and it is the highest mode of Understanding. This takes bandwidth. All of us geeks love bandwidth. The pure attention of selfless love provides infinite bandwidth.   "Bandwidth describes the amount of data a network can transport in a certain period of time. In other words, bandwidth is a capacity for rate of transfer, usually expressed in bits per second." It requires large bandwidth to convey a rich experience. So at the interface, let go. Don't be afraid to give it up for God.

The Holy Spirit

The Holy Spirit is love, the connecting harmony. This relationship between things is just as real and important as the things themselves. The Holy Spirit is so real it can be called a person. St Augustine says, "The Holy Spirit is the love between God and Man." The Holy Spirit is often referred to as the call… The call to return, The call to joy, The Call to awaken and be glad, and The Call for God. This Call is something within our own minds and in the creation. We can dissociate that Call and block it from our awareness, or we can deliberately turn our attention to it and listen.

This love manifests itself as the world around us: the creation. First there is pure being (the father) then there is the will of God (an act in time). The creation is God's thought.

God Creates and Sustains in the Spirit of Love, The Holy Spirit

God
The Father
The Creation
The creation offers natural revelation
Man
Man's awareness
What we turn our senses to
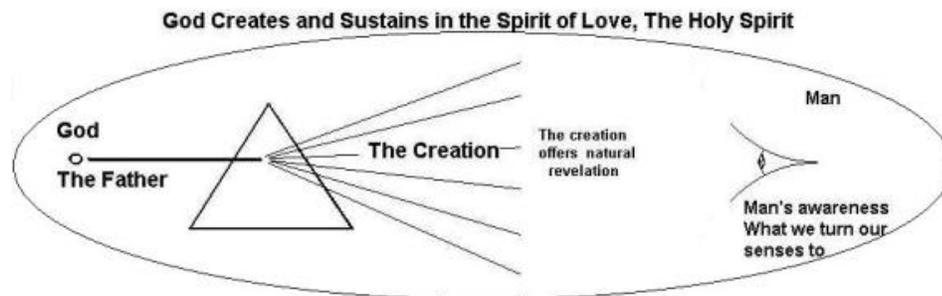
We live in the love of God. The beauty of this concept is that evolution can be validated in the eyes of today's religions. Evolution is the gathering of information provided by the environment so that the organism can survive. It becomes worship.

A Creation Theory

How can God create the universe from beginning to end, know its outcome, and still allow for our free will?

Imagine that the will of God is like a river and we are water molecules in that river. You, the individual water molecule move about in *EVERY* direction reacting freely to pressures of life. And you never notice that the river flows down stream. One passionate molecule may shout; "Hey this is the way (he points somewhere down stream). Follow me. If we converge we will become an intelligent super-fluid and there will be no pressures!" It doesn't matter if you follow him or not, even if he is exactly right. The river still flows and it is ok to relax and go for the ride. Your experience is precious. But, be ready for a fountain of re-creation on the other side of eternity.

Here is an interesting theory; The picture represents the genesis of the world in six days. God the father is at the center. Let there be light is the first day of the creation. God transcends his creation of space and time so these days are best seen as six degrees of order instead of 24 hour days. Each "day" transcends the previous day as a new level (Day) of order is imposed on previous day through God's intervention. During each day there is an amount of *life-willed self-ordering*. This self-ordering is the result of the Holy Spirit. On the sixth day the conscious mind of man was created by God (I define a human as someone aware of God and the miracle of being). Near the end of this day a holy man came to show us the way (through his life) to the next level of transcendence. And he said,
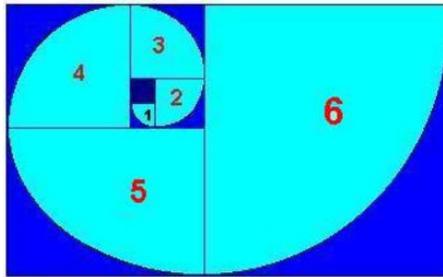
"All this I have spoken while still with you. But the Counselor, the Holy Spirit, whom the Father will send in my name, will teach you all things and will remind you of everything I have said to you."
John 14:25

So pay attention. On the this day we are left to work out our salvation. And in our scientific efforts driven by the Holy Spirit we validate our wise spiritual heritage.

The essence of the creation

Looking closely at the world, it reveals itself to the scientist as warped space. There are no particles. Matter is a myth. What we call a fundamental particle of matter is a point of empty space curved upon itself in 10 dimensions, and vibrating. This is the stuff of the universe we exist in, and of which you are made. Imagine the music of invisible crystal bells vibrating. So atoms excite the universe to a symphony. The sound waves in this picture are in reality the forces of nature. Forces arise from waves of displaced space radiating back and forth between objects. Spiritually speaking, the forces of nature are the will of God. Science calls the forces Gravity, Electromagnetism, and the Nuclear force. From these attractive and repulsive forces (the vibrating symphony) an ordering principal arises to create the universe, life, and the mind of man. God creates in a beautiful subtle way. The natural world is a song, and God is the one singing.

This is me. I am the son of Elford (Scottish) and Gloria Garcia (Mexican). Two cultural migrations collided 47 years ago in Texas, and I was the outcome. I am an Instructor by profession. One of the subjects I teach is Atomic and Nuclear Physics. I have a passion for this subject because I consider it the fundamentals of the creation. I think science is in reality observing an aspect of God. Here are the steps in my logic. God The Father created and sustains the world. Since there is nothing other than God, where did this stuff in the creation come from? It must be God's Thought. It is the pure will of God. It is the answer to that nagging question, Hey! What's the Big Idea? Simply put God is having a good and powerful idea and it is The Universe. In this light I come to the

conclusion that the universe is something God is patiently saying to us. So we should pay attention to it. Data is the signal. Those little facts of reality are manna from heaven. Data is different from information because it is pure. When data is interpreted it becomes information. Our continued growth even our very existence in this space and time depends upon correct interpretation.

We live in a peaceful society. We can thank those who have gone before us for this. Some were martyred. Some died nameless in the fight for peace and freedom. We stand on the shoulders of those who have gone before us, dying for ideas, and dedicating their lives to increase understanding. We must honor them by doing something with their gift of peace, freedom, and abundant resources.
Grow In The Spirit. Don't let it diminish. God created and continues to create the world. He asks that we share this with him. It is a powerful show of love, and that means in his realm we are allowed to create with love too! Individually we create, through our relationships we create, and with God we create. The eternal life promised by Jesus is just that. "Share in the creation with me". It is infinite; expect no less here, now and forever.

From a dream to reality guided by the Holy Spirit,

Jim Ledford.

Learn about love in the technical age at www.technical-jesus.com This is also a way to contact me.

What do other people think about this set of ideas? Here are the highest traffic links made since the beginning of the millennium. Most think the ideas are inspirational. Some think it is the emerging Antichrist because technology part of this process, I think it is a good sign that opinion is slightly positive because it matches the odds for life in this world, and the house odds in Las Vegas! Whatever we might say or do...GOD WINS

http://en.wikipedia.org/wiki/Christian_transhumanism

http://www.thewatcherfiles.com/chip/part_3.htm

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http://www.nationmaster.com/encyclopedia/Christian-transhumanism

Some History

1980 In a Lucid Dream.   Moments of understanding come when the mind is released from the thoughts that hold us in the daily routine.

In 1980 I had minor surgery so the operating team had to put me.. "out".While losing consciousness I had a lucid dream that I had left this world. I found myself outside of space and time looking at a symbol of the creation. It was a smooth hyperbolic tower rising to an infinite point. I sensed this was an expression of our growth from ignorance, growth sustained by love for an infinite God. I tried to remain conscious and re-enter the creation but I couldn't. The drugs they gave me were too powerful and so I faded away.... But when I woke up, I remembered, and I started to put things together.

Spiritual Growth over Time

Growth in Understanding

transcendence
Selfless Love
Wisdom
Knowledge
Information
Data

Time ——►
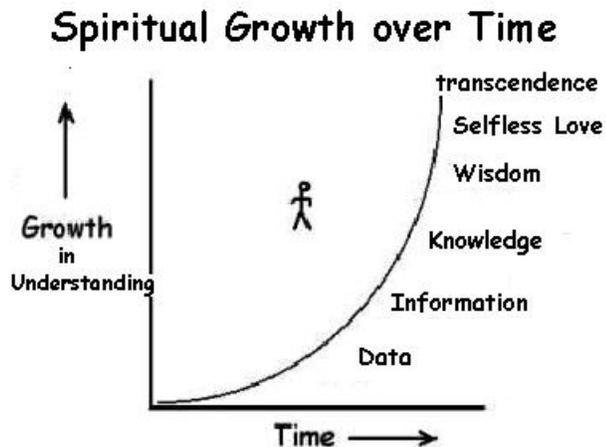
2001 Technical Jesus website.. the audacity!

Each year I start a new journal that tracks my activities of the year and my learnings. As I read or discuss the tenets of faith and understanding, I put down the thoughts and connections.   I am following technology as it builds on our understanding of the body's mechanics and the mysteries of the atom. I walk a path that blends science, economics and religion. I am a seeker of truth and this allows me to cross over traditional barriers – creation does not exclude evolution. Christ does not exclude Buddha. Rather, all of man's experiences move us to a place of greater understanding. To understand the universe and our place within it, we must look within ourselves and outside to nature. .

It is my deepest desire that this information be shared with others. At first, I thought this would be through a book but the advent of the Internet presented me with an even more powerful medium –the "web". Just as I look to the growth in our understanding moving from data to information to knowledge to wisdom, I found that I could seed data into this young technology platform and have it grow outwards touching people all over the world and leading them into discussions and discoveries.

Information wants to be free. As I worked to present the basic building blocks of this information, I also looked to link it to related thought and activities. My website soon became a source of philosophical and technological innovation, linking to areas as

diverse as DARPA (Defense Advanced Research Projects Agency) and Christian Holy Spirit.

I worked to break down this information into the basic building blocks

2003 I follow a web link back to find my site classified as Christian Transhumanism.

2004 Touching History.

In 2004, I traveled to Rome to see the place where so much of our modern understanding of Christianity was defined. Rome is a city of contrasts. Physically small, its influence lingers to shape our world even today. Each census we participate in connects us to this ancient city and its peoples. Its long history is reflected in ancient structures going back to 700 years before Christ. And its vitality resonates with the whine of vespas and the laughter drifting lightly on the breeze as you pass by the cafes that line each small courtyard.

I was prepared with my guidebooks, phrasebooks and maps. For each of my four days in Rome, I ventured forth in a new compass direction to discover the familiar icons of history on a personal level: standing inside the Pantheon's small circle of sunlight as it pierces through the graceful dome high overhead in a breathtaking feat of balancing the forces of stone and gravity; climbing up the worn steps of the coliseum to overlook the arena where so much death was trivialized as entertainment; walking under triumphant arches celebrating victories in battles long past and forgotten.

It was on the day I visited the Coliseum that I was touched by a circumstance that reinforces my belief that there is a pattern to what occurs in this world. As a major attraction, much of the coliseum is wrapped in commercial activities – gladiators posing for photographs, guides soliciting tours and vendors with souvenirs. The ancient world provides business opportunities even in this technically driven age. The walk back from the site slopes gently uphill through an ancient collection of pillars and ruins that speak to the difficulty of surviving in a world of change. As I reached the top of the hill, I rested in the sun to look back over the path that so many people of different ages had crossed.

She approached quietly with her map folded and colored with highlighted tracings of her walks through the city. "Do you know what time it opens?" she asked indicating the building next to me. Obviously old, it was nondescript in a city of so many marvels. I expressed my ignorance and she shared that I was standing in front of the Mamertine Prison, the place where Peter the Apostle was held before he was executed by being crucified upside down. My resting place was the site of devotion to faith even in the presence of death. The Mamertine was not open that day but we pieced together information from our guidebooks that it would be open the following morning.

Taking her leave, she told me that I should not leave Rome without visiting the Boca de Veritas. "It is the Mouth of Truth" she said and waived as she headed down the hill.

As a seeker of Truth, I was astounded to have a chance encounter direct me to an ancient legend surrounding a test for Truth. I spent the afternoon in quest of the Boca de Veritas, finding it outside a small chapel in a sleepy part of the city sandwiched between ancient temples and a busy thoroughfare.

The Boca de Veritas is an imposing stone wheel with a face stained by time looking gravely at the petitioner. Legend has it that if you place your hand in the mouth of truth and say a lie, the mouth will snap shut. The lips have been worn smooth by thousands of visitors seeking to validate their wishes and truths. I had crossed into a time where powers based on belief commanded swift judgment and respect.

I approached, the intimidating dark eyes silently drinking in my presence. I slid my hand into the opening in the cool stone. "My writings are about the path of truth." Under its immutable gaze, my heartbeat counted out the tense seconds for judgment to be passed. The mouth remained open and I accepted its support for my quest to share the truth with the world.

The visit to the Boca Veritas helped me to speak my beliefs. That night as I reflected on the day, I had no idea the discoveries that were in store for me at the Mamertine Prison.

The day opened with a hazy sky over an overheated Rome. I headed out on foot through the twists and turns that define this vibrant city. I was becoming seduced by the rhythms of discharge and recharge. Step into the flow of pedestrians, feeling their energy as they laugh and hurry to their appointments. Step into the corner café for cappuccino and quiet reflection. Back into the flow on the sidewalk, watching for an ebb in the stream of cars to make an adrenaline raising dash across. Pausing under a massive fountain to wonder at the sinewy muscles an artist coaxed from stone many hundreds of years ago.

The priest was swinging open the dark wooden doors to the chapel as I arrived. He was dressed in a dark Cossack and seemed to fade into the dark cool interior. Much has been written about the history of this place. The church S. Giuseppe dei Falegnami, via di Marforio dates from the 17th century and is dedicated to St. Joseph the Carpenter. High above me, an intricately carved and gilded ceiling reflecting craftsmen's loving labors gently reflects soft light. Off to the side was a small table to light candles to help lift your prayers to God.
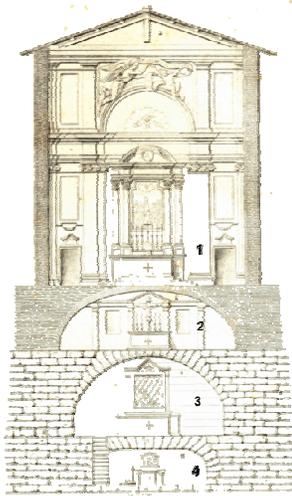
Underneath the baroque church is the Chapel of the Crucifix, a shrine that serves as the entrance to a deeper and darker part of history. A room built in the second century BC stands over an ancient cistern called the Tullianum. Estimated to be as old as the 7th century BC, the cistern marks the place of a natural spring and water still makes it presence known in this damp chamber.

My footsteps sound ominous as I leave this church to descend into the older regions. To enter the chapel, I must return to street level and circle past tall iron fencing and gates. I note the irony that their purpose is to keep visitors out of the prison rather than to keep the prisoners in.

1)   S. Giuseppe dei Falegnami, via di Marforio (Church of St. Joseph) [1]
2)   Cappella del SS. Crocifisso (Chapel of the Crucifix)
3)   Carcer (Prison)
4)   Tullianum (Cistern)

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[1] http://www.archeorm.arti.beniculturali.it/sar2000/nuovi_scavi/default.htm#

I enter the chapel and descend into the Carcer with its arched ceiling. I have shed the opulence of the church above and entered into a place marked by the past. Oil lamps work hard to keep the shadows at bay. Polished marble plaques listing those that were executed here stand in contrast to the roughness of the stonewalls. I don't need any translation to understand the stark words listing the methods of death: decapitato, strangolati, morto per fame.

In the floor is a circular grate, the original access point to the chamber below. Through this small gap, the prisoners were thrown into the damp depths below. It is easy to overlook it if you do not know its significance. For visitors today, stairs now join the two chambers and I descend into the bottom chamber.

"The dread and gloom of the ponderous, obdurate old prison...come up as in a dark mist through the floor. It is all so silent and so close...so black and stealthy..." These were the words of Charles Dickens in describing the small room I've now entered.

The ceiling is oppressive, with only the very center of the room allowing me to stand upright without fear of brushing against unforgiving rock just inches overhead. One can only imagine the room in its original state, pure darkness broken only by what glimmers of light fall careless through the small grate from the room above.

I feel a physical reaction as I reach the bottom of the stairs and turn to view the altar. The blood red marble is marred by black upside down cross. The image makes me uneasy as my brain flips through the emotions that the image evokes. Was I looking at the final desecration by an entity so evil that it looked to kill not only the body but also the faith of those who were martyred here? As I flash through possibilities, I remember the stories of St. Peter. Upon hearing that he was to be crucified, Peter said that he was not worthy to die in the same manner as his Lord and requested that he be crucified up side down. The icon I was looking at was the ultimate symbol of humility and faith—Peter's upside down cross. I felt my tensions release and fill with wonder. In the stillness of the small chamber that saw so much pain, I could feel the power of faith undiminished by the passing of 2,000 years.

Still in awe, I climbed the narrow stairs to the Carcer. Halfway up the stairs, my view was floor level with the upper chamber. My eyes, adjusted to the darkness of the chamber below, drank in details I had not seen before as each step upwards opened up a new perspective of the alter. As I look closer, I notice that the stone panels at the base contain the image I saw in my dream!

The stone formed two symmetrical parabolic curves within a field of dark and light coming together into a single line reaching up into the heavens. I drew closer and was amazed that the stone panels were not inlays but a natural pattern in the rock. The pattern was repeated on each side of the altar, indicating that the stonemason intentionally positioned the stone to highlight the pattern.

It was almost as if God was leaving clues as to the nature of how we can understand his universe. In the heart of a stone, formed million of years old, unearthed, polished and set reverently into a place of faith, was a visual message of how we can transcend through spiritual growth and understanding. I had found a message left for me by an artisan hundreds of years before and half a world away.
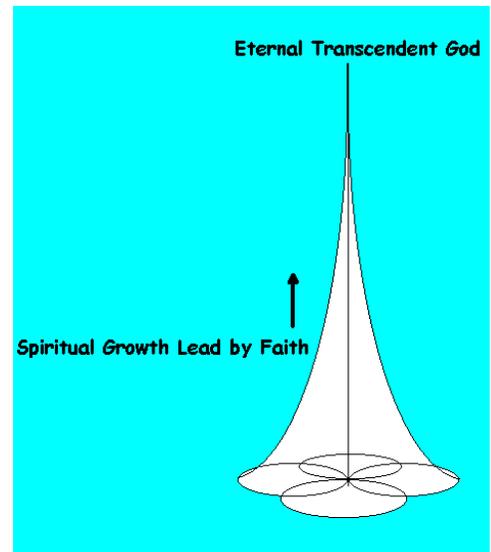

2005 Encouraged, I establish the first church of Christian Transhumanism

Son of God

Jesus Christ

Son of Man

**Jesus Christ is the Son of God and The Son of Man**

Eternity, time enough for anything.

Infinity, room enough for everything.

I know! Its simple..
I will make a difference.   It will be a place for freedom and growth.
THERE IS POTENTIAL IN DIFFERENCE!!

THIS WAY I FOUND OUT ABOUT ORDER, AND CHAOS, MATTER AND ENERGY.

My universe had to have all the options... including love to hold it together.
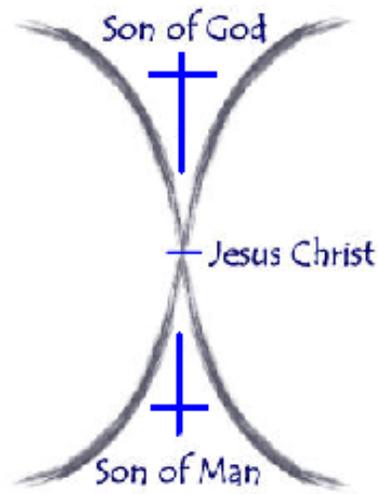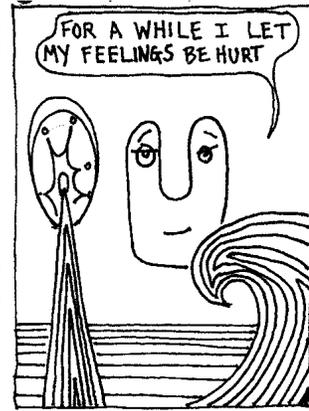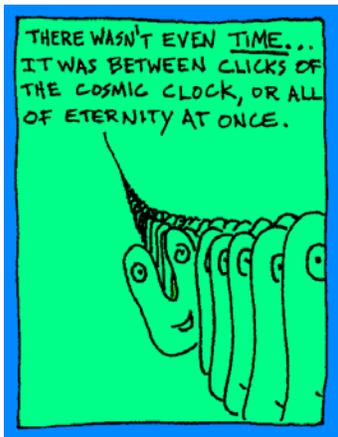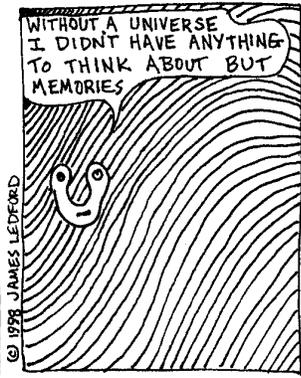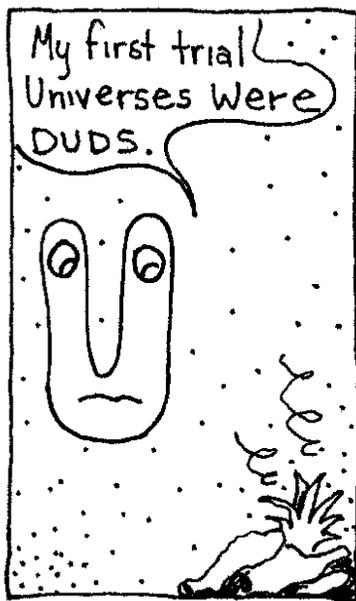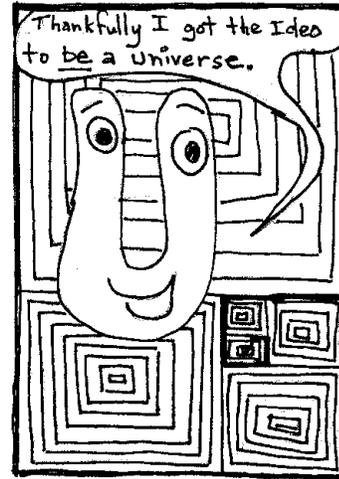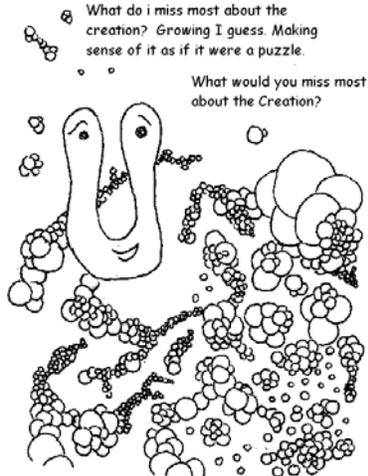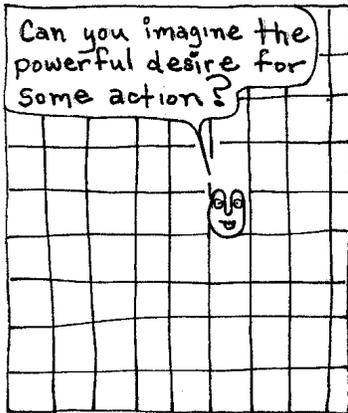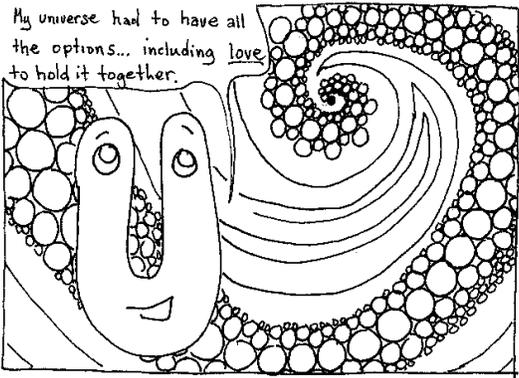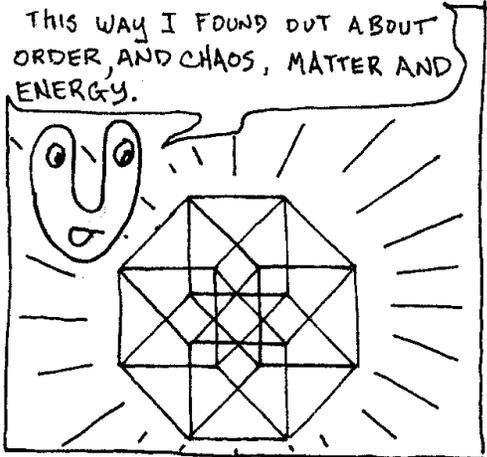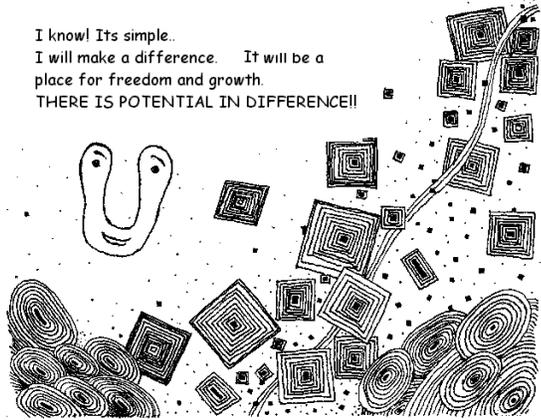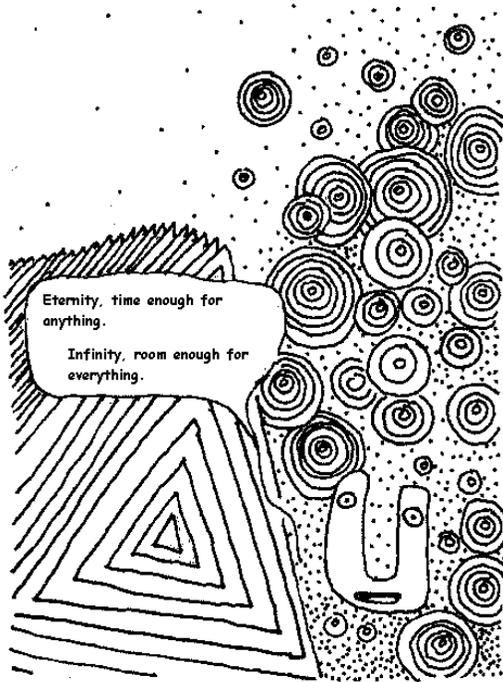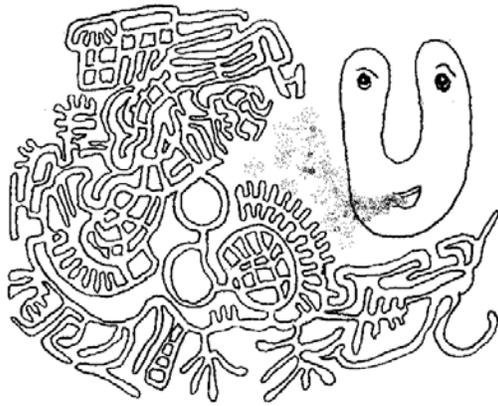
Keep in mind,
Every thought, every action, every statement exists forever.

Well I did it. And I Love it.
It is Beauty in action I think!

You People!
All Right now...
What's the MEANING of this?
LEDFORD

Together
I think we can work this out
Ledford 2002
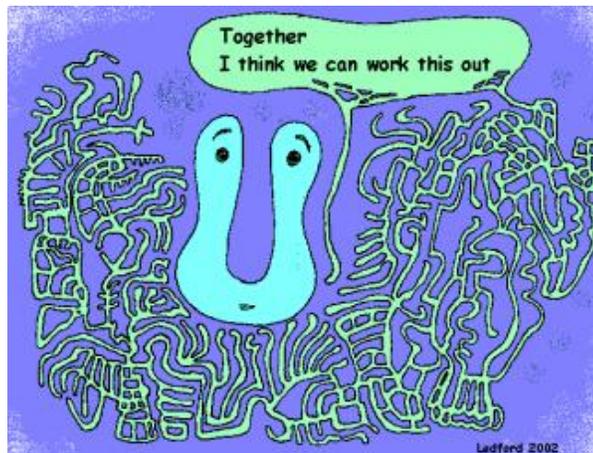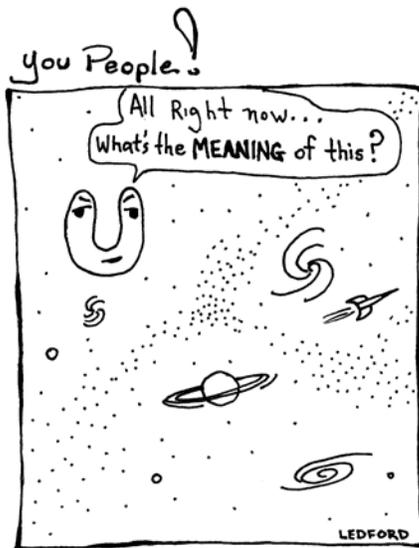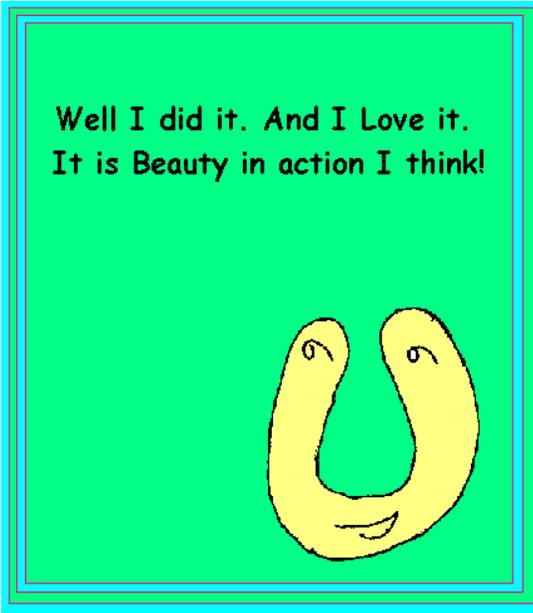
Crust Babies

We are riding over a huge churning, burning ball 'o red-hot lava. Heck, it's white-hot liquid metal in the center. Our vehicle, this thing we build cities on, is called CRUST; the earth's crust. Crust is a good name because it's cracked, oozing, and steaming like a piping hot cherry pie. OK, I exaggerate. It is a slow ride on a crust floe. You can hardly feel it. But, crust collisions can heave stuff miles high or shove it deep down back into the furnace.
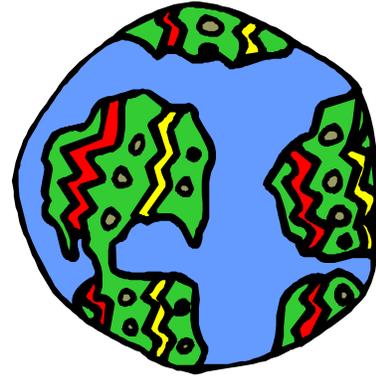
Chaos yields art. You've got to love the mountains and fruited plains, mesas and canyons, foggy valleys and rivers. I declare; I like the river stones best. I never thought much about them until I came to Arizona. In Arizona stone jewels flow through the land like no other. The reasons lie in a mixture of geology, geography, and weather. Geologically, Arizona has been as active as a mosh pit at a Slayer concert. There have been volcanic eruptions, wicked erosion, giant submergences and uplifts, as well as bending and folding. There are so many different types of rock around; it is a geologist's play ground. Phoenix itself sits in a valley created when the land was actually pulled and stretched out in the direction of California. It would look even more like the Forbidden Planet here but for the fact that hard-edged magnificence is cooled and shaped by the rain. It is just enough rain to spread river stones out smooth and clean in the sun. Any more and they would be lost in a mud bank at the edge of a forest.

As for the geography, to the north and east of Phoenix there is high country called the Colorado Plateau. It is interesting to note that some of the mountain peaks there contain fossilized coral reefs. The transition from the plateau to the valley is called the Mogillon Rim. The Salt, Gila, Verde, and Agua Fria Rivers cut deep canyons and gorges in the Mogillon Rim as they flow down to converge in the Valley of the Sun. Here, periodic flows from the rivers take the rock from the high country and lay out a bed of river stones fifty miles long. It's like God's game of patty cake. Remember that one? Patty cake patty cake baker man, roll 'em up roll 'em up throw them in the pan.
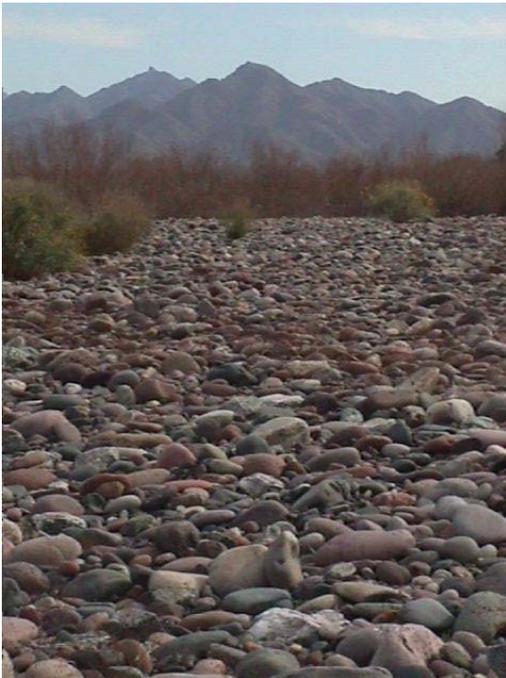
Each stone in that pan is one of a kind, with its own gentle curves, texture and colors. A stretch of riverbed filled with river stones could be compared to a human generation. There is the mundane and the great, the funky and the proud, at least in the mind of the beholder. Walk along and let the stones have your attention, as precious as it is. You will come across some that stand out like the greatest individuals in human history, or like a masterpiece in an infinite Wall Mart. This river stone will take you away if only for a moment. It will relax you with its elegance. However, this requires another mode of thinking. One that is calm and accepting as you draw your attention to the stone. Then, you are rewarded with a momentary vacation from our complicated world. This simple stone you have is precious. So you take it home. A week goes by, spent making a living, keeping your place in this world. Then, you notice it sitting there among the many manufactured and purposeful things you have. It is a rock, hardly different than those dumped on the curbs and yards all over Phoenix. Rock can be had for a few dollars a ton at your local

quarry.   But, just hold your river stone a while and soon you will see the beauty again.

As you can imagine, I have a lot of select river stones around my place. Of course I consider them art all by themselves, but recently I decided to use some of them as an art medium.   Here are some examples that you can see at the Back Street Gallery and the Willow House:

- I have been saving my doodles for years. I have a doodle portfolio--a regular catalog of doodles. My best come to me when I am really phased out in deep thought. Carl Jung would say (in a Swiss accent) "You are channeling archetypes from the collective unconscious". It's these doodles that I choose to carve on an appropriate river stone. It takes a diamond tipped dentist-type drill to do that. A river stone is hard; it had to be to survive the turmoil of a river and time. I guess there is a lesson in that.

- Some stones end up looking like a vase when they come down the river, even rounded to a flat bottom. So I drill a hole where one should be. This requires a diamond bit core drill.

- For some stones I form a lizard out of epoxy putty, and while the putty is sticky, I sprinkle black sand on it and place it on the stone. The lizard dries rock hard with a glittering black skin.

- **A true story: One day while working on the stones, I glanced at a very smooth and dark one. It looked like a piece of the night sky. For a split second I saw a constellation of stars on it. So, by drilling and setting rhinestones to form the pattern of the stars, I create a bit of heaven from a stone made in the soul of the earth.**

I have been in the riverbeds from one end to the other. Some places are better than others. My favorite place to go is Estrella Park just a few miles west of Phoenix. But, be careful when you go. It is extremely hot in the summer. In the cooler months visit the riverbed and take a moment, see the beauty and meaning right under your feet-- the little Crust Babies.
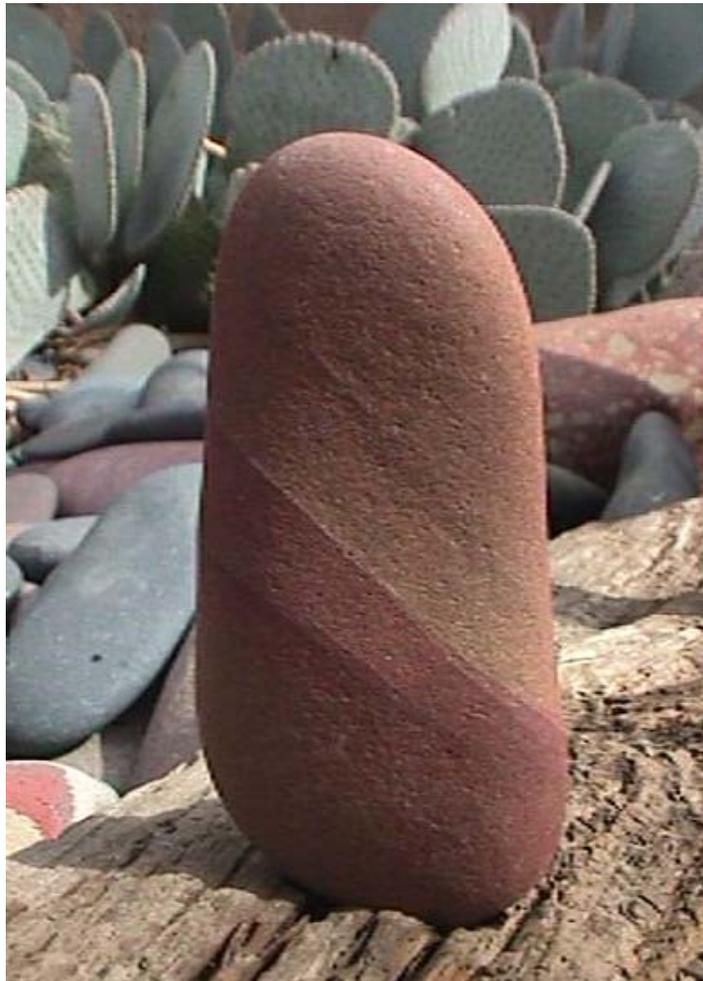
Block Time and the Double Slit Experiment

It may be that information about the future can be communicated to our present time using the double slit experiment. The double slit experiment reveals an interference pattern even when one particle is fired at a time. Erwin Schrödinger mathematically explains that the interference patterns that build up over time are a result of probability waves coming from that single electron. Richard Feynman explains mathematically that they are the result of the sum of the many histories that one electron can have. I propose a synergizing physical explanation of that includes block time. These particles become coincident and can interfere with subsequent particles in series when we assume movement 90° away from space-time in our universe. They have a transcendent component.

moments in time during the experiment

The particles are coincident and can interfere with each other using the trancendent view
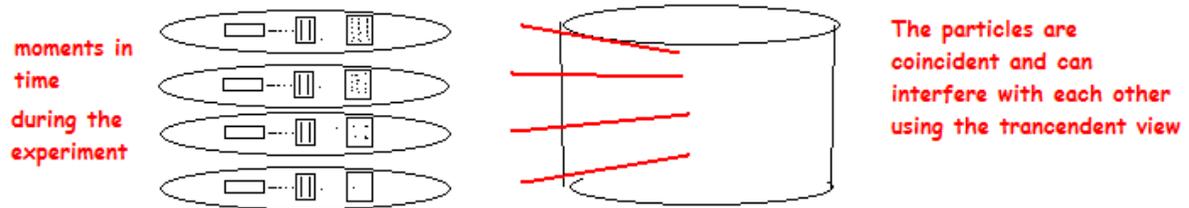
The challenge is to prove it. So, I propose an experiment; acquire 10 double slit experiment setups that have the capability to close one slit. Start the particle guns all at the same time and at the intensity of one particle per second. At 5 minutes record the patterns of all 10 experiments and note the degree of interference on each. Allow the experiment to go for say; another 5 minutes. At that point gather some information about the present time. A good example is the turn of the stock market. At the beginning of the experiment you have established a configuration of the 10 experiments as either; one half single slit if the stock market turns down or all double slit if he stock market turns up. So 10 minutes into the experiment position the slits accordingly. Allow the experiment to go another 5 minutes then shut it down. If the stock market turned down you should know it 5 minutes in advance if the interference patterns on half of the setups is diminished. If the particles do interfere by coincidence outside our space-time reference there should be verifiable information passed back from the future!