

# *Synergy Physics - A Holistic View*

by Stephen A. Brenner



FQXi "What's Ultimately Possible in Physics?" Essay Contest



What really intrigues me regarding the future of physics is the possibility that what we already know about quantum theory inherently contains a germ of fundamental principles that we have somehow overlooked. It is these same principles that in one manifestation or another would provide a mechanism for governing life at all levels of being. We can continue to probe the deepest inner regions of matter and energy with massive particle accelerators. And we can develop ever more far reaching and fantastic images of our astronomical context with our sophisticated telescopes. I sincerely believe, however, that back here on earth what we already know about physics will ultimately gel and transition into concepts that help us understand ourselves and our human nature in the most profound ways.

I am very much blown away by how far we have progressed in our understanding of physics and the quantum nature of reality. What a tremendous scientific achievement this is, and its practical applications have literally opened up a kind of magical understanding and transformative control of the material world. I find this very exciting, but even with this sophisticated science and technology, we will ultimately fail in our understanding of nature if we don't find some way to understand how all aspects of existence (physical, mental & spiritual) fit together in a larger system.

**Body, Mind, & Soul** as fundamental aspects of nature? I sense that this may sound preposterous to a physicist tweaking complex mathematics to forge a new variant of string theory, but these concepts are intuitively taken for granted as essential parts of who we are by most people.

A century ago, it was a common belief by many in the West that animals and certainly plants must not have a soul, that somehow only advanced humankind could support such a special entity. I'm guessing that by now we've all broadened our mind set in this area to at least consider that spirit (as well as mind) permeates throughout the entire universe at all levels. But don't you think that by now, with all our advanced knowledge of physics, we should be able to describe at least the barest outline of where spirit and mind fit into laws of physics?

I guess it's a bit of an outrageous assumption that the expansive divide between the world of the physical and the world of the spiritual could ever be bridged within the same scientific framework. An even more audacious assumption would be that we could also understand very clearly and scientifically what we mean by the relationship between the Body, the Mind and the Soul, and that every aspect of reality has these three manifestations. But that, my friends, is my deeply felt sense of what is possible when we eventually build up to a more synergistic comprehension of physics.

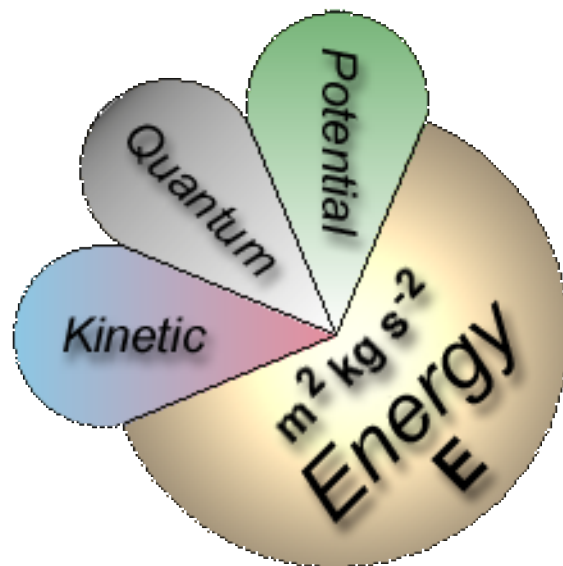
That, however, is really only the beginning of the journey on which a broader understanding of physics will eventually take us. Ultimately we are talking about the foundations of a universal language of being emerging from our knowledge of physics. We will understand in great detail various states of being and how we all naturally transition from one state to another. An atom may do this in a very precise (but perhaps probabilistic) fashion, but on our human level we will still follow some very general universal mechanisms.

I believe that a more integrated and healthy world view with radically new and powerful language tools will emerge as a result of our deeper understanding of the universal laws of physics. That's a big leap indeed, and it's not going to be easy. We tend to be wed to our belief systems and threatened by what we don't understand. But those who are able to see through to the new paradigm may experience a profound intellectual joy ride.

Imagine back to the time when we were confronted with the notion that the universe did not revolve around the earth. Some very clever scientists had worked out some very complicated Ptolemaic equations for describing the paths of the planets, and the system actually did have a few predictive scientific attributes. But it was based on fundamentally wrong assumptions. It's easy for people in the 21st century to chuckle at the notion that uneducated people centuries ago could cling to such obviously faulty science. We wonder how something so obvious as the Copernican counter theory could have taken so long to discover or be so fervently rejected by the powers that be. And now in our own time, with triumphant science at its pinnacle, is it possible or even inevitable that we too could be overlooking some obvious fundamental scientific truths?

One of my favorite discoveries in physics is Einstein's Photoelectric Equation. That one equation speaks to us about three types of energy and how they relate to each other. Quantum energy equaling the sum of Kinetic energy plus the Work or Potential energy. Light and electrons being emitted from and absorbed into an atom. The conservation of energy throughout the system. This is all pretty core stuff in physics.

In what I call "Synergy Physics", I'm going to show that the photoelectric equation (in reference to **Energy**) is just one of four very similar primary tripartite elements (and also part of six secondary equations with which we are all very familiar).

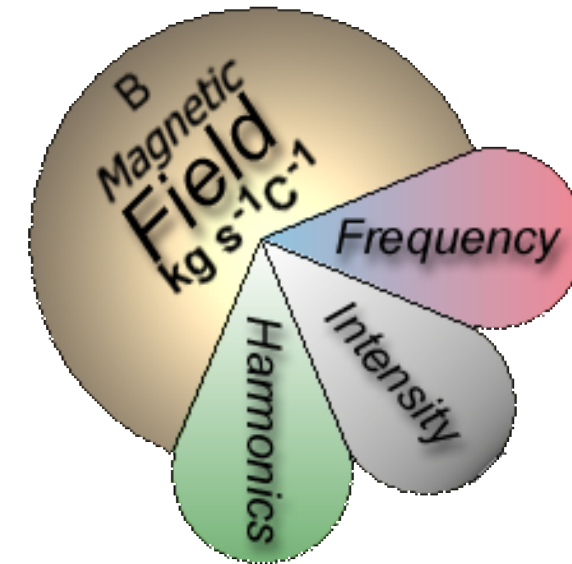


What would the other three primary elements in physics be?

I refer to them as **Field**, **Space**, and **Pole**.

I'm using broader terms than those generally applied. We often speak of Time, Space, Matter and Energy as our basic building blocks for physics. I use the term "Pole" because I want to include both matter and charge (in both stationary and kinetic expressions). I use "Field" because it is a superset of the notion "Time" (or actually "Frequency"). The other two definitions of Field are Field Intensity and Field Harmonics.

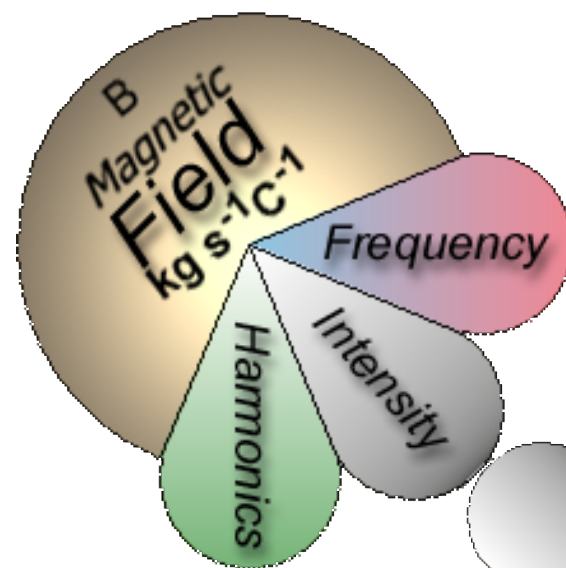
Let's take a look at Magnetic Field as an example



We see the definition of Magnetic Field in the sphere above.

Each of the three modes of Field is based on relationship it has with each of the other three primary elements. When **Magnetic Field** relates to **Energy**, we're talking about **Magnetic Field Intensity** relating to **Quantum Energy** and we end up with the equation for the **Bohr Magneton**.

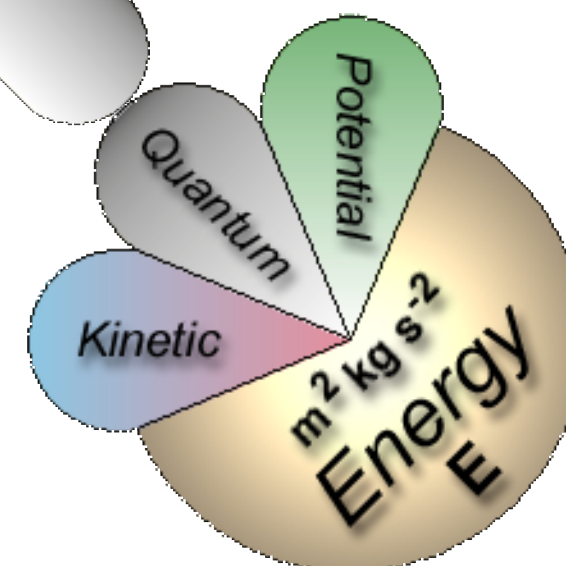
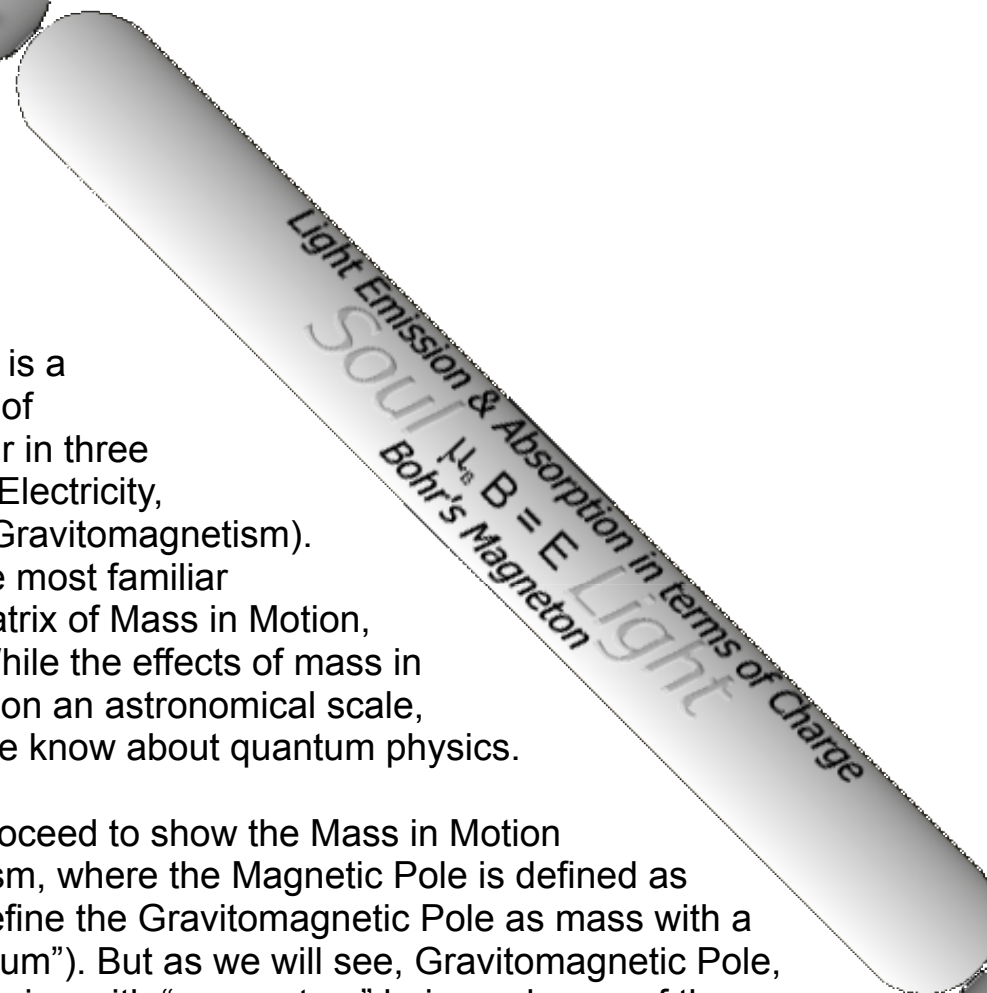


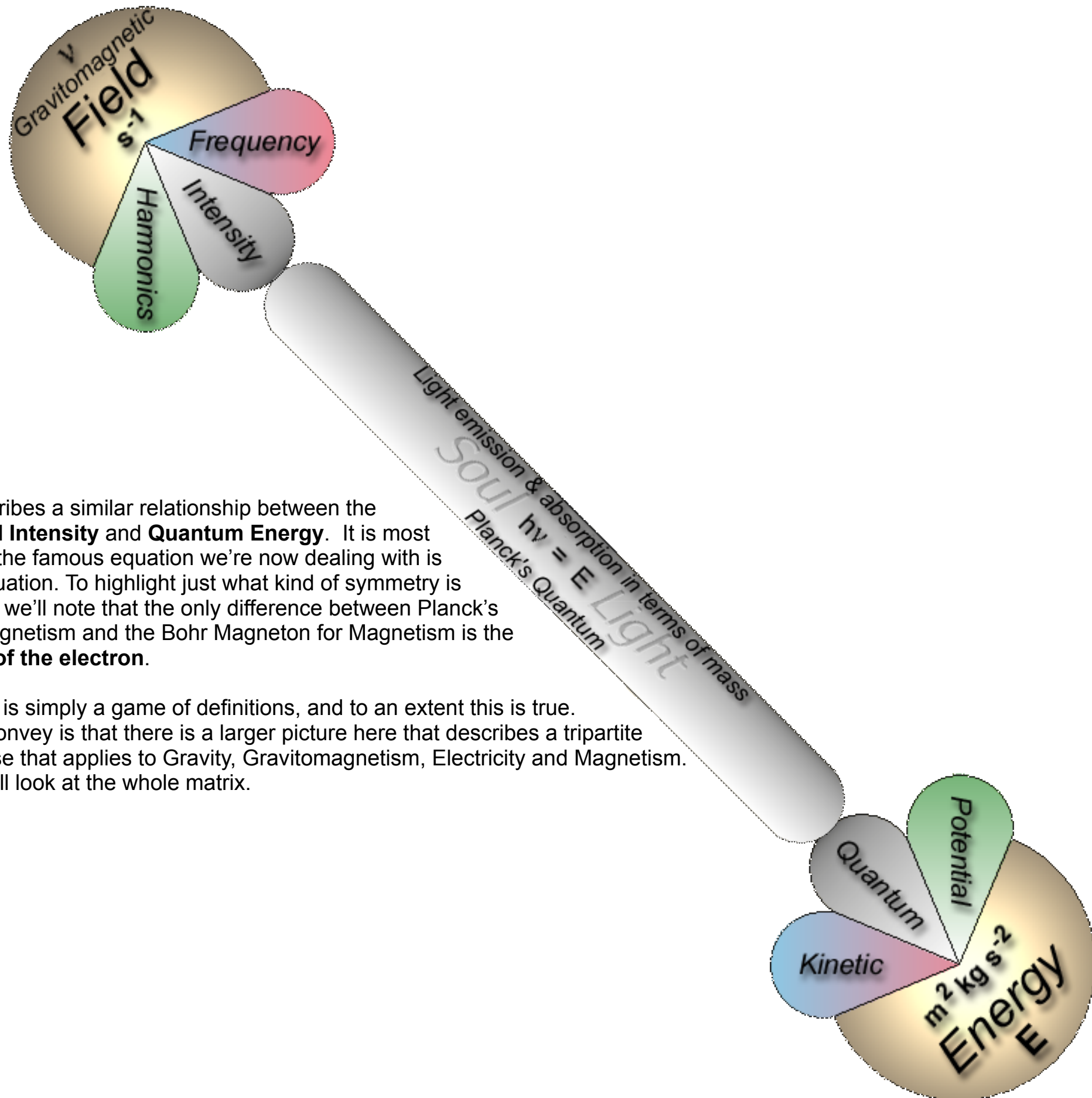


So as you can see, what we are beginning to build here is a kind of relationship diagram. Our four primary elements of **Field, Space, Pole & Energy** will all relate to each other in three modes. This matrix relationship applies to both Gravity, Electricity, Electricity in Motion (Magnetism), and Mass in Motion (Gravitomagnetism). What is most interesting is that we will soon see that the most familiar relationships (equations) will fall into place within the matrix of Mass in Motion, an area not heavily explored within quantum physics. While the effects of mass in motion (gravitomagnetism) are very difficult to measure on an astronomical scale, it oddly enough turns out to be the foundation of what we know about quantum physics.

We need to make two simple assumptions before we proceed to show the Mass in Motion matrix. The first assumption is that just as with magnetism, where the Magnetic Pole is defined as charge with a velocity, so with Mass in Motion we will define the Gravitomagnetic Pole as mass with a velocity (which is simply what we normally call "momentum"). But as we will see, Gravitomagnetic Pole, like all the primary elements, has three modes of expression with "momentum" being only one of them.

The second assumption is simply that we define Gravitomagnetic Field as Frequency..





This diagram now describes a similar relationship between the **Gravitomagnetic Field Intensity** and **Quantum Energy**. It is most interesting to note that the famous equation we're now dealing with is **Planck's Quantum** equation. To highlight just what kind of symmetry is found within the matrix, we'll note that the only difference between Planck's Constant for Gravitomagnetism and the Bohr Magneton for Magnetism is the **charge to mass ratio of the electron**.

One might say that this is simply a game of definitions, and to an extent this is true. But what I'm trying to convey is that there is a larger picture here that describes a tripartite character to the universe that applies to Gravity, Gravitomagnetism, Electricity and Magnetism. In the next diagram we'll look at the whole matrix.



So here we have the whole shebang (at least for the gravitomagnetic realm). I have to admit that if our goal is to describe the core principles of how the universe functions, the fact that we are doing it with just three constants and six equations does seem to stretch the limits of believability. So let's toss in Einstein's photoelectric equation (and the equivalents for Field, Space & Pole if they exist) to make us feel a bit more all-encompassing. :-)

But seriously, I believe that this relationship diagram does more than hint at the possibility that **Planck's Constant** (and its twin the **Bohr Magneton**) describe the world of the **Soul**, that the **Constant Speed of Light** describes the world of the **Mind**, and lastly that predictable **Forces between objects** at varying distances describe the world of the **Body**.

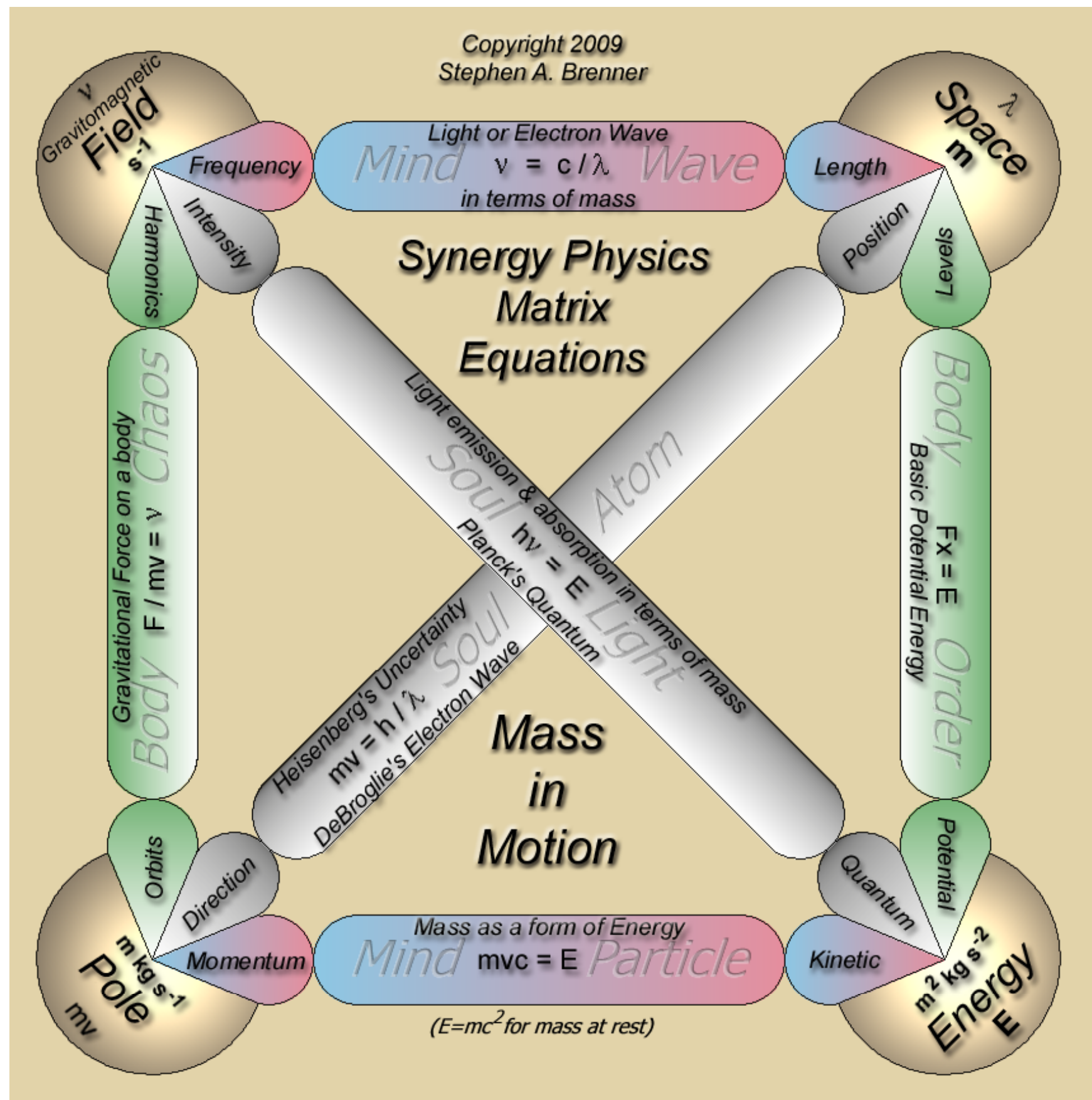
It looks as though each of these realms of Body, Mind & Soul are based on a kind of dualistic nature:

**Soul** has both an **Atomic** and a **Light** nature.

**Mind** has both a **Wave** and a **Particle** nature.

**Body** embraces both **Chaos** and **Order**.

I think it's safe to imply from all of this that Body, Mind, & Soul are not truly separate entities. They seem to me more like concepts that are intimately intertwined and relating to each other. On the other hand, if the photoelectric equation is any guide, it does seem that the concept of Soul dominates the other two realms.



What I'd like to do in the remaining space is extrapolate on the implications of all this for the human condition. If this theory does turn out to have validity, I'm sure it would take a good deal of time for many gifted people to bring more clarity and depth to these concepts. While the physics part of the theory is anchored in the reality of familiar equations, the following intuitions on the dualistic nature of Body, Mind, & Soul are my best initial efforts at getting us started at seeing the same relationships within the human context.

One aspect of the physical world is what I call "Order". On the quantum scale the seven electron orbit levels of the atom are the foundation for building all of the chemical elements, and are thus a basis on which all of the physical world is formulated. Implied in this concept of order is a tendency for life to evolve ever more complex and ordered life forms from simpler life form components. I call this tendency "Synergy," which implies the advancement of a body's intelligence beyond what would be expected from its component parts. This ongoing synergy is a balancing dualism to the process of entropy that is also part of the physical universe.

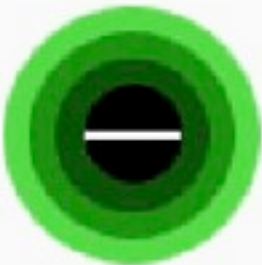
The physical world as expressed within a living being is found in the genetic structure that is passed from one generation to the next. You could say that the process of evolution of life on earth is basically a synergistic process which brings a higher level of order and organization to the universe. This is a potential for a higher intelligence, and not necessarily a guarantee of achieving it.

While Order creates the potential for physical existence, Entropy or Chaos is what fuels and drives it. As living creatures, our survival is based on being able to feed ourselves on the life energy found in our food. Our very existence is thus both a contributing factor to the overall entropy of the world (as we consume high level life forms to fuel our own bodies) and to the overall Order of the world as we grow and become involved in creative endeavors.

You might say that the whole Darwinian concept of the "survival of the fittest" is directly related to a concept of the chaos of multiple life forms competing for natural resources. This same competition between multiple needs goes on even within an individual, who must decide which need to focus on and which to ignore. But what is missing from the Darwinian model is the fact that Synergy is really the primary force in the Universe. There are many more tendencies for intelligent cooperation and symbiotic relationships in nature than there are for their random breakdown.

# Body Order

Spatial  
Levels



Potential  
Energy



*Categorize - Learning - Conceptualize*

# Body Chaos

Field  
Harmonics



Pole  
Orbits



*Fulfillment - Motivation - Drives*



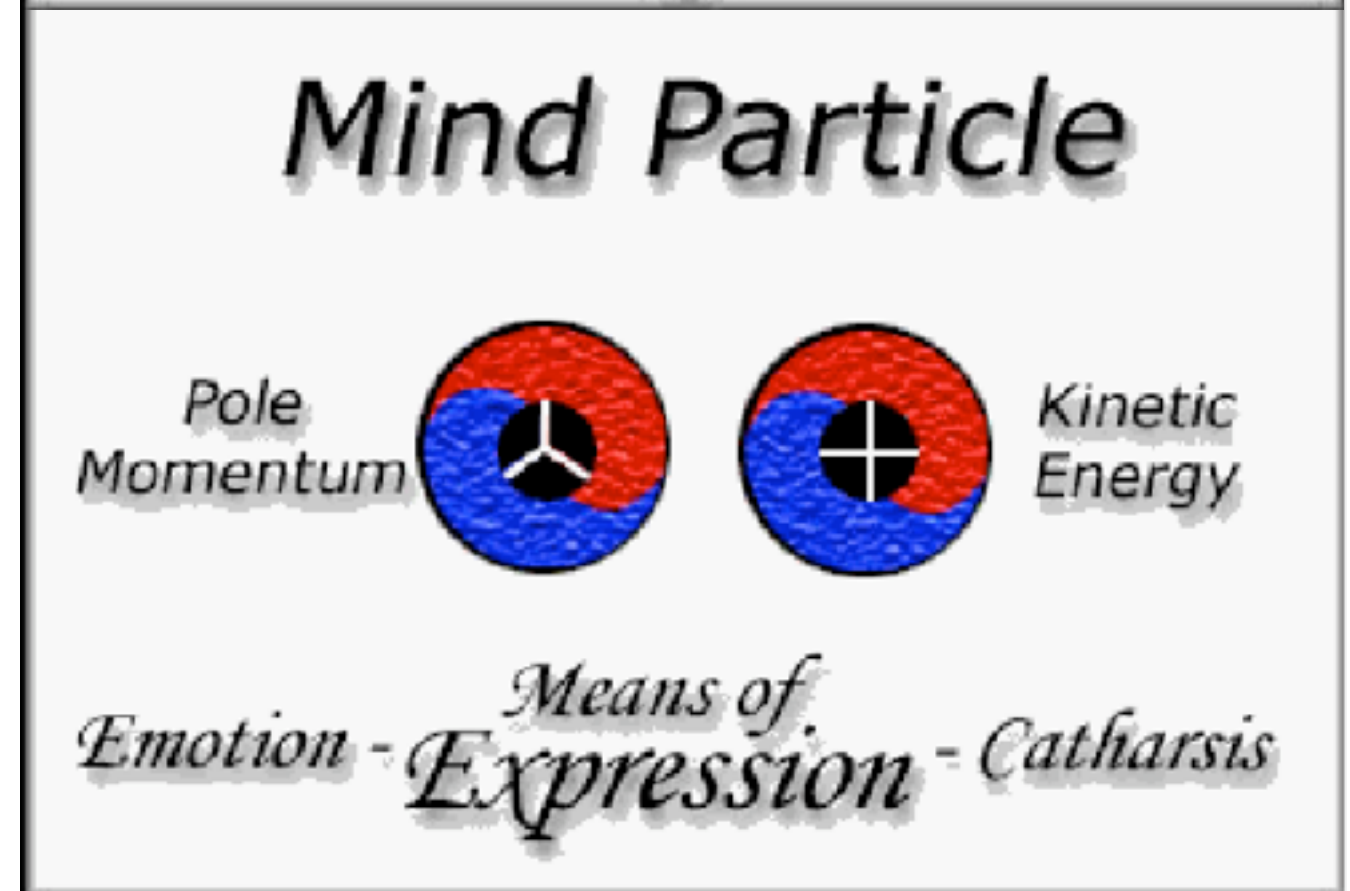
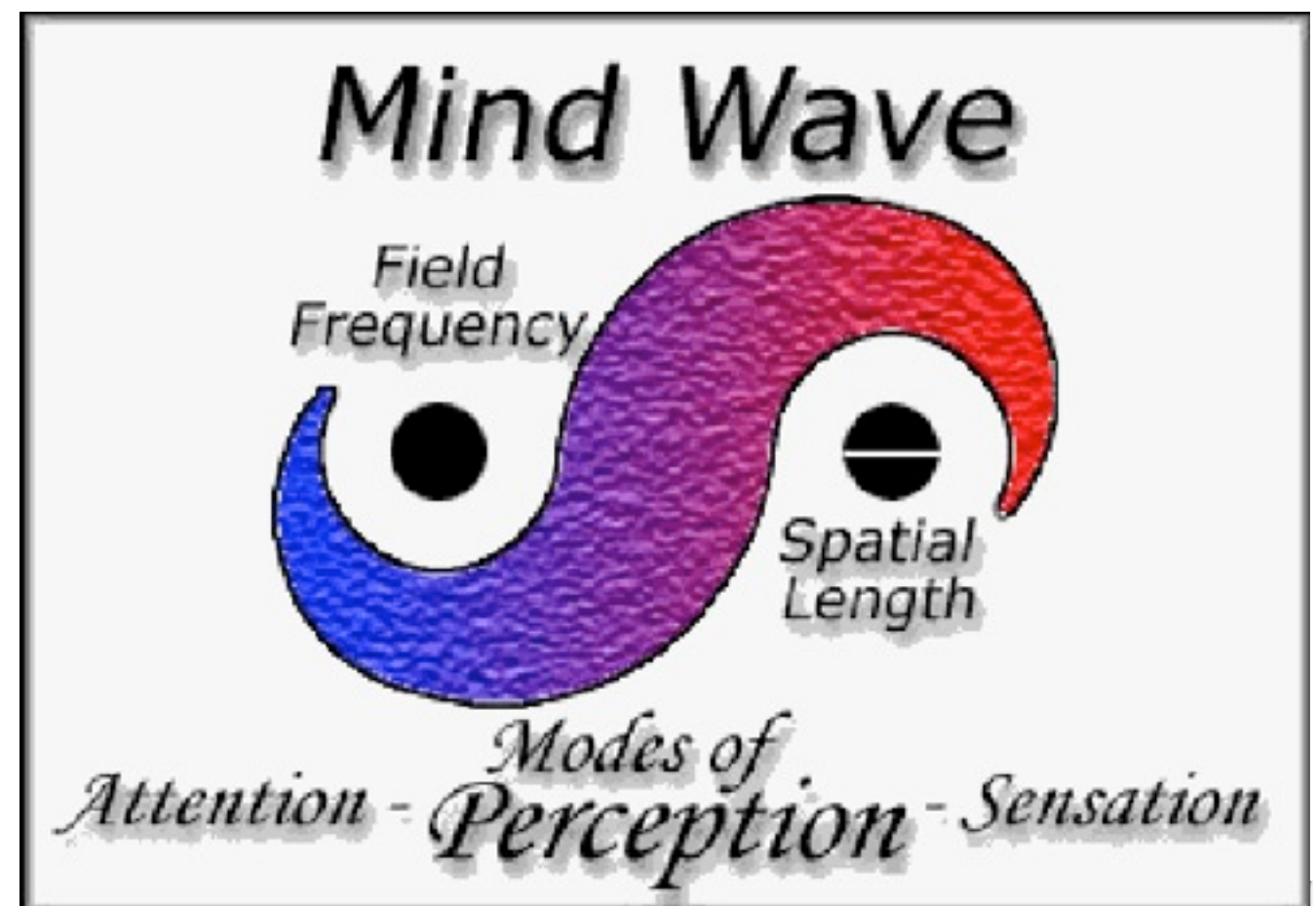
The mind is the realm of consciousness and experience. While it is the aspect of ourselves which we are most acquainted with and which dominates our existence, it is also the most transitory aspect of our lives. The mind encompasses the life span of an individual as it grows and decays from infancy to old age. It is an adaptation of our spirit being incarnated into a unique body, and thus the color of our lives, our experiences may vary significantly from one life time to the next. The mind attempts to maximize one's pleasure and minimize one's pain. You might then say that Thomas Jefferson's famous "pursuit of happiness" has a basis in quantum physics!

The Wave is the consciousness that is outside and observing and guiding one's experience. It is the realm of language and thoughts and the ego. The Wave is the context or channel in which we experience the world. From a world of infinite possibilities at birth where any number of different aspects of ourselves are given free expression, the ego crystallizes over time and acts as a way to safely navigate through and make sense of the world. Without the stability of a healthy ego, we are tossed about by the whims of our emotions. If the ego becomes too dominant, then we lose our ability to open ourselves to fully experiencing life.

Lucid dreaming is the state of mind that is the balance point between Wave and Particle, between consciousness and unconsciousness. This is where who we think we are meets who we might be. It's a very powerful state of full consciousness. Perhaps enlightenment is a continuous state of lucid dreaming, with little difference between the waking or sleeping states. It would be the ultimate joy ride. I doubt if there are many people who have ever been able to sustain such a state for very long (Jesus, Buddha, etc.).

Particle is associated with being inside and flowing with the experience. It is in the realm of the id and libido, and the subconscious and unconscious processes that occur within our minds. It is an expression of our complex feeling states. It reflects the more spontaneous and holistic aspects of self.

Some cosmologies have attempted to describe archetypal "active" and "passive" principles in the universe or may even go so far as to describe these as "male" and "female" dualisms. If one has to make this kind of analogy, in this framework, the "active" principle, the Particle, is more closely associated with the feminine, since it is women who seem to be more comfortable with their feeling states. And like all dualisms, balance is the key to achieving a healthy lifestyle. Thus men without feelings are like clever navigators lacking ships to take them anywhere.



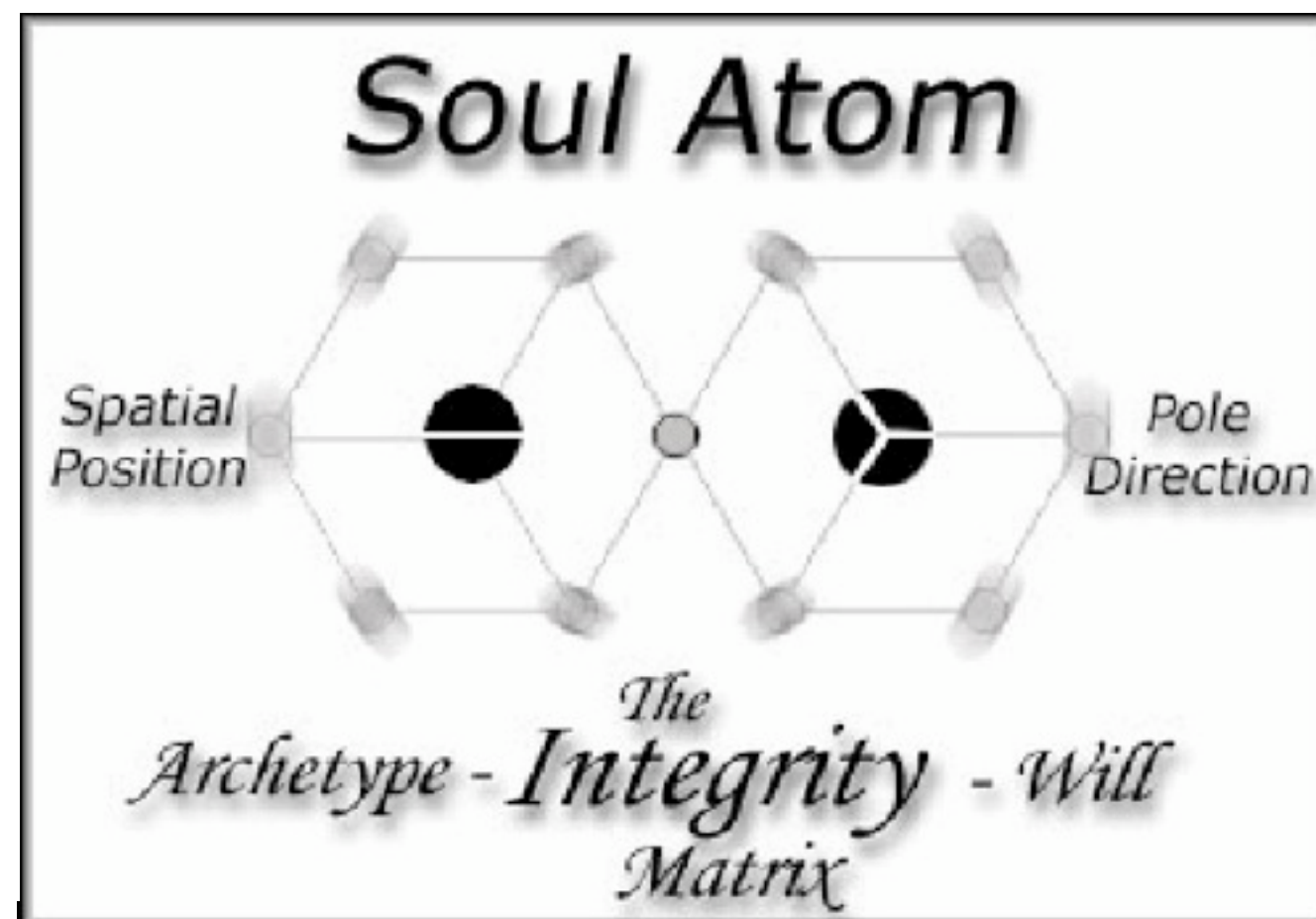


The Soul is the sacred life force that manifests itself throughout and essentially creates the entire universe from the tiny atom to the human to the galaxies and beyond. It is the source for manifestations in both the physical and mental realms. From our human context, the spirit is eternal and continues on from one incarnation to the next. While the goal of the Body is survival and growth, and the goal of the Mind is the pursuit of happiness, the goal of the Soul is to attain wholeness and to be fully alive and healthy and in unity with the rest of the universe. The balancing dualism's for the spiritual realm are "Atom" (spirit forming the bonds within matter) and "Light" (free spirit).

The light that holds us together is our "Integrity Matrix", who we are at the most fundamental level. It reflects the karmic manifestation of which aspects of ourselves are dominating and embraced and which aspects are disowned and being repressed into the shadows. At birth karmic forces push us to choose a body that will be a suitable vessel for the type of lessons that we need to work on. We can resist these forces, but they will just return even stronger in the next cycle. Finding our mission or lessons in life is the same as finding our own personal divine archetypes (the vision we have of our highest selves). These archetypes guide us to a higher state of being. This is literally a process to cultivate ourselves as suitable vessels for the manifestation of the divine Spirit, enriching God as much as ourselves.

I refer to the process of free light vibrating from or to our bodies as the "Magic Journey". All of us are surrounded by a karmic web of individuals and spirits in whom we are invested and with whom we are in orbit. These are the people who help to shape our lives through the influence of their relationships with us. Each significant relationship involves an exchange of spiritual energy that forms a kind of bond between individuals. This sharing of spiritual energy is literally a process of exchanging a piece of ourselves with others. So in effect, we become a mutually defining group entity in the process. These special people will often show up in each of our incarnations, with old unresolved issues subtly influencing current interactions.

So in a larger sense, on a time scale beyond our senses, there is an ongoing karmic dance and drama that we play out with those in our web. Those who have hurt us before may now come forward as our healers. Past friends may now be unrecognized and spurned in their current manifestations. Some special soul mates may consistently share the excitement of our journey. On a deeper level, and perhaps in another plane, all of this is known.



Way back in 1968, when I was an idealistic student at U.C. Berkeley, I was struck by the notion that human nature must operate in ways that paralleled the fundamental laws of physics. My main interest and passion was to discover some of the more universal aspects of language and psychology. Learning the basics about quantum physics was a means to establish a frame of reference or foundation for speculations in that area. Along the way though, I believe I stumbled onto some fundamental truths about physics and ontology.

The Holy Grail of physics has been the elusive unified field theory. Synergy physics may be helpful in that endeavor since it implies that some of our core equations (Planck's Quantum for example) actually apply to gravitomagnetic fields. But perhaps the most elusive goal in theoretical physics is to go beyond our purely material conceptions of the world and recognize how science can also describe the mental and spiritual aspects of existence as well.

I look forward to discussing the pros and cons of this theory at the FQXi website at  
<http://fqxi.org/community/forum>.

If you'd like to send a private message with your responses, you can address it to [sbrenner@archetype.org](mailto:sbrenner@archetype.org)