The conscious universe

Understanding the universe as a living entity,
manifesting through holographic crystallization

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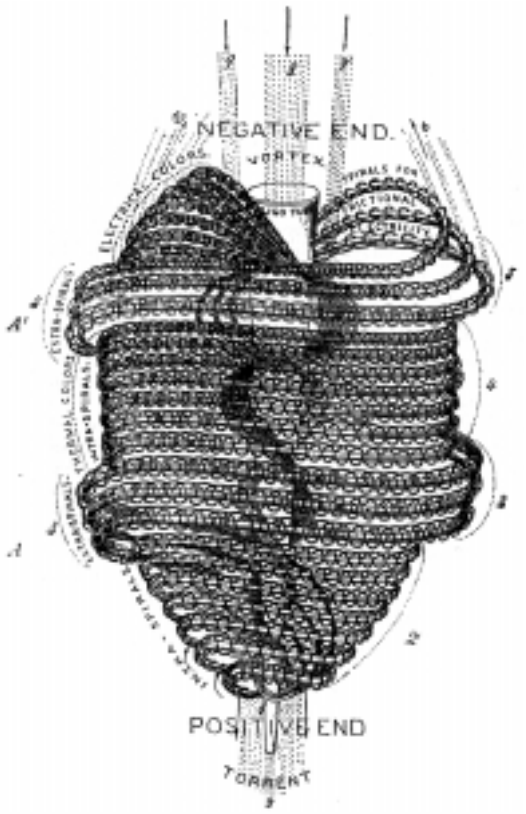

Abstract

For decades the holy grail of modern physics has been to unify the theory of relativity and quantum mechanics into a common theory. It is suggested that the clairvoyant investigation of matter (micro-psi), may offer some of the missing pieces in creating a unified theory. Micro-psi and esoteric science, gives us the tools to explain how everything in the physical universe, may essentially consist of crystallized thoughts (or more correctly condensed spirit). This explains a great deal of the mysteries of both physics and consciousness, and provides a simple and compelling framework for a future science, that unifies physics and metaphysics. The understanding that emerges is of a universe where everything is alive and is a reflection of the one source we call spirit. Physical reality can thus be considered to be a holographic patterns of interference, between two orders of consciousness, namely activity and form, giving rise to the quantum mechanical reality, through which the third basic aspect of the creator, intent, can express itself.

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The nature of reality

The questions of the origin of the universe, and the nature of reality, has occupied the imagination of humankind since time immemorial. The reason why we are so occupied with this issue, is that our conception of the world is one of the most fundamental forces shaping our lives. It quite literally influences every action we take and every thought we think. It determines how we interpret experiences, how we perceive the purpose of life and how we conceive of who we are.

Today thought about the nature of reality is dominated by two central pillars that grew out of the first quarter of the 20'th century, the *theory of relativity* and *quantum mechanics (QM)*. Each has in it's own way forced us to expand our conception of the world enormously and revealed to us the mysterious and elegant architecture of the universe.

But the dawn of the 20'th century also brought another scientific revolution much less known, yet just as profound. This was the result of an esoteric[1] approach to science, which involved exploring the fabric of reality through *clairvoyant means*[2]. For the first time offering a direct glimpse of the inner workings of nature and opening new vistas for understanding the relationship between physics and consciousness. This work, known as *Occult Chemistry*, has for a century remained more or less ignored by the scientific community. But the ideas it contains may actually hold the key to the holy grail of modern physics – *the theory of everything*.

The reason why I believe this might be the case is related to the apparent inability to unify the two main pillars of physics (relativity and quantum mechanics) into a common theory. The problem is that the theories are incompatible in their very nature since the theory of relativity assumes reality to be *continuous, deterministic and local* while quantum mechanics are *non-local, discontinuous and indeterministic.* All attempts at merging them into a common framework has thus far led to nonsensical infinities, indicating that a radically different approach is needed.

The basic problem

The problem that lies at the root of the discussion is the primary force in the universe, consciousness (the subjective dimension) or the physical reality (the objective dimension). This question has been discussed for centuries, without reaching any fundamental clarity on the issue.

What it really boils down to is:

1. either consciousness (subjective reality) has grown out of objective reality, thus being "caused" by spacetime, matter and electromagnetics phenomena, or
2. consciousness has "caused" the objective universe to come into existence, or
3. something else caused it all.

The first possibility (that consciousness is *caused by* objective reality (or has arisen as a consequence of the physical laws) is implicate in modern science, but how reasonable is this really?

If we turn to the sages and great spiritual teachers through the ages, there is one theme which we encounter again and again. That is the claim that the source of our being and the source of the manifest universe is transcendent. That the source is to be found beyond space and time as well as beyond the dualities that constitute our "reality".

When considering the possibility that this may in fact be true, it is clear that this is not only a plausible explanation for existence. It is also by far the simplest solution to the many mysterious properties of both matter and consciousness to imagine that some external force or agency outside space and time has caused both objective reality and consciousness. Something which embodies, but transcends both objectivity and subjectivity, and thus is able to manifest both because the constitute parts of a greater whole.

And this is this idea I want to explore in the following.

Reflections on oneness

The key hypothesis in this article, is that the physical universe and life are reflections of a single source, which originates *outside* time and space. This force will in the following be referred to as spirit or the naked consciousness, and is considered to of a nature that is beyond all dualities, and therefore also beyond all definitions and logic. This essence is indescribable even in principle, since all terms and concepts we could use to describe it with belongs to the world of dualities[3].

This is a simple and compelling explanation because it is congruent with both scientific fact as well as the essential teachings of all major spiritual traditions. It explains the mysteries of nature as well as how the different myths of creation has arisen. It furthermore provides an elegant explanation for many of the paradoxes in quantum mechanics as well as the phenomena's of transpersonal consciousness that confound orthodox science.

But the most important reason why this hypothesis, even at it's bare face deserve serious attention, is that it is far simpler to explain the existence of matter in terms of consciousness than consciousness in terms of matter or substance

The amazing universe

When studying the laws governing the universe, one is generally struck by the genius and elegance with which it work. Such marvelous simplicity and balance, yet able to create room for an essentially unbounded creativity. In order to explain how spirit could conceivable have given rise to the physical universe, the best place to start may actually be to explore the paradoxes that have arisen from the attempt to explain the universe in purely mathematical terms.

As mentioned, the orthodox (or mainstream) scientific perspective on reality, is largely dominated by quantum mechanics and the theory of relativity. Following their discovery in the early 20th century, physicists have striven to unify the two theories, with limited success. Some progress has been achieved though, especially within the domain of *superstring theory*, which today is the only real candidate for a theory of everything, but it is still riddled with unsolved problems [8].

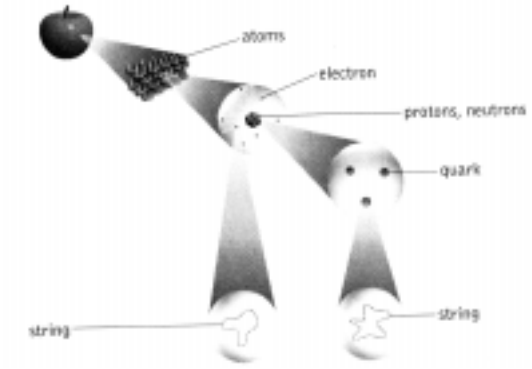

Figure 1: Shows the constitution of matter according to string theory. Depending on the vibrational state of the strings, different kinds of particles result.

The good news is that superstring theory contains some of the elegance we would expect from a theory of everything, and it is also interesting that it has an amazing number of similarities to the picture of the subatomic realm that emerges from the clairvoyant investigations, which will be described shortly.

The essential idea behind superstrings, is that all basic particles are made up of 1-dimensional strings, that can "create" particles such as electrons, quarks, neutrinos etc. through particular patterns of vibrations. In addition to this, string theory can also account for the various *properties* of the subatomic particles like for instance spin, charge and mass, through the different vibrational states it posses.

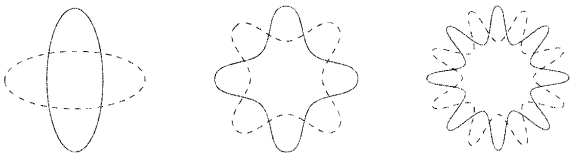

Figure 2: Strings are essentially thought of as one-dimensional objects that has a size of the order of the Planck length (10^{-33} m). The more violent vibration requires more energy and corresponds to particles with higher mass.

To explain this in any detail if beyond the scope of this article, the idea of vibrating strings as the source of all particles are an exciting concept (see Figure 2). And I believe that strings are likely to be part of the ultimate theory of everything, but perhaps in a version which also incorporates non-dual spirit as well as the phenomena of consciousness into it's basic framework (which is not the case today).

But actually superstring theory is in some ways even stranger than quantum mechanics and the theory of relativity. Current string theories thus predict that the universe is not just four-dimensional as Einstein claimed (time being a dimension) but 10 or 11-dimensional. The only reason why we experience the universe as 3-dimensional (excluding time) is that the remaining 6 or 7 dimensions are curled up into very small spaces, with a size the order of the Planck length *($l = 10^{-33}$ m).* But even if these curled up dimensions are very tiny, they are still large enough to enable the strings to vibrate, since the strings are even smaller. So while these extra dimensions are not visible at a macroscopic level (or even at ordinary microscopic levels), the strings can vibrate in all 10 or 11 dimensions as required by the theory.

The illusive substance

Throughout the history of physics, there has been a pattern that have repeated itself. Every time scientists have been able to extend their understanding to smaller and more fundamental particles, these particles have become less substantial and more like *dynamic nothingness.*

In classical physics, matter was thought of as a continuum, essentially *spacefilling substance*. Later on, physicists imagined that substance consisted of atoms, which where like small balls, but even this idea had to give way for an even more fundamental description, viewing the atom as shells of electrons orbiting a nucleus.

But to appreciate how insubstantial this really is, consider that in the current atomic theories, the proportion of substance (the electron and the nucleus) to space (the rest) roughly equals the ratio of substance in the solar system (sun & planets) to space. This means that there is virtually nothing in the subatomic realm. Only electric forces and the effects they create.

If one thus where able to remove the empty space in the atoms constituting the entire earth, what would be left would fit into the volume of a cubic centimeter. With superstring theory, it is even suggested that there is really *no volume at all*, only 1-dimensional objects and their vibrations. If one thus extrapolates this evolution of physics to the next stage, it would seem natural to consider that perhaps there is *no substance at all*, but only patterns of vibrations creating an illusion of substance.

Indications that this might indeed be true, can be found in the fact that if one calculates the combined energy in all the universe, it will add up to zero. What is meant by this is that by calculating to total energy of everything that exists in the universe, the combined energy is zero. The reason why this is possible is because the gravitational energy is negative while the energy of mass, light and motion is positive and for some strange the two cancel each other out exactly[4]. To understand how energy can be negative, one can consider that in order to move a mass (say a rock) from the surface of a planet and into space, one has to expend a lot of energy to get it up there. Thus relative to the zero-energy state of matter (when it is floating in space), matter inside a gravitational well (like on a planet) has a negative energy.

Another example of this zero-sum mechanism this can be found in general theory of relativity. Here the equations shows us that space-time is *caused* by the existence of gravitational fields which means that the two (matter and space-time) must be considered a duality and that space empty of gravitational fields cannot exist. Relativity also shows that all motion is relative, even for light. There is no fixpoint that can be said to be at rest anywhere. And even time is highly relative and illusory since it depends completely on the inertial frame, or context, from which a system is observed.

In fact it seems almost like *creating something out of nothing* is an almost universal mechanism, encountered again and again in physics. It is as if everything exist only by virtue of something else.

To summarize the previous arguments, there are many indications that what we perceive to be solid and real, in fact is nothing but the dynamic movement of forces, that through their interaction create the effect of substance. And in addition to this, it seems is if the universe has some fundamental symmetries, which add up to nothing, which again points to the possibility that none of it is really real.

To probe a little deeper into the mysteries of nature, lets now turn to the strange world of quantum mechanics, and the paradoxes it contains.

The quantum mysteries

Quantum mechanics (QM), has certain consequences that are very hard to understand intuitively but which have been experimentally verified, and whose truth cannot be doubted.

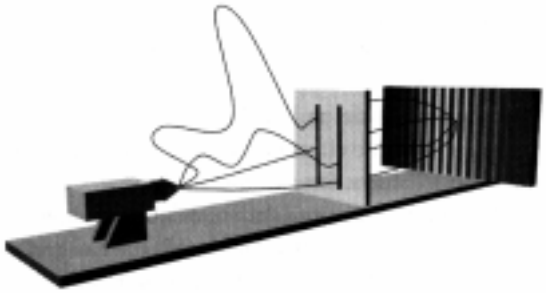

Figure 3: The wave/particle duality. Note that each particle is considered to travel through *both* slits simultaneously.

First of all, QM displays a wave/particle duality, which means that all subatomic entities with equal right can be considered to be waves and particles, depending on the context. This is true for subatomic particles, as well as macroscopic objects, such as a human being. However it is only on atomic scales, that the wave nature has any measurable consequences. In Figure 3 an experimental setup used to prove this duality is shown. When a beam of electrons is subjected to a double-slit barrier, a pattern of interference will emerge, just as if it was a lightwave. This can only be explained if the electron is considered to be a wave. However in many *other* experimental setups the electron will behave like a particle, which has led to the conclusion that it is both a wave and a particle.

Another very strange property of QM is the property of nonlocality, which literally means that particles in opposite ends of the universe, can influence each other *instantaneously*. This has also been experimentally verified[5].

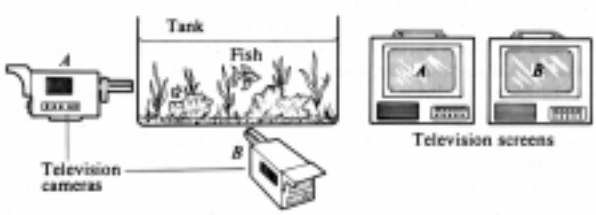

Figure 4: Illustrating how a 3-D reality when reduced to two 2-D images, will result in two images that a correlated and appears to "communicate" with each other with no time delay.

What the result shows is that if you have a set of particles that have interacted in a way that causes a coupling between them, then a measurement on one particle will cause an instantaneous change in the other. It is as if the two particles are part of a common dynamical system somehow.

This must necessarily lead us to conclude that

- either the particles (and by inference the entire universe), can only be understood as an *undivided whole*, and we must accept that non-local influences are a reality, or
- it has no meaning to talk about any kind of "quantum reality", but only probabilities of certain events (this is the orthodox Copenhagen interpretation of quantum physics attributes to Niels Bohr.)[6]

However the physicist David Bohm was not satisfied with a quantum theory, that accepted a fundamental lawlessness at the quantum level as indicated by the probabilistic nature of orthodox quantum mechanics. This led him to formulate an interpretation of quantum mechanics, based on an understanding of the entire universe as an *undivided whole.* An exhaustive treatment of his theory is beyond this article, but a few of the key aspects will be presented in the following.

In orthodox quantum mechanics, the wavefunction is treated as a probability function only, which means that the wavefunction in itself is not a field, but only represents the *chance* of encountering a particle a some point in space, as shown in Eq. (1).

$$P = |\Psi|^2 \, dV \qquad (1)$$

Here $P(t, \mathbf{x})$, is the probability of finding an electron in the volume dV for the wavefunction $\Psi(t, \mathbf{x})$, which in general is a function of both position and time.

Because of this interpretation, one is led to conclude, that the interference experiment as illustrated in Figure 3, can only be understood if the electron is considered to pass through *both* slits at the *same* time. This is of course highly counterintuitive, since we would expect any entity with a particle-like nature, to pass through one slit or the other.

As an alternative to this, Bohm suggested that one might consider the wavefunction of quantum mechanics as *real* field, that influences the electron through providing *information* about the surroundings like a pilot wave. The effect of such an informational (or formative) field, can be compared to a radio tower, telling an airplane which direction to fly. Although the information-field itself does not carry energy enough to change the course of the airliner, the airplane can change course under it's own power. Bohm furthermore demonstrated that interpreting the wavefunction as an informational field, would yield the same results as the orthodox interpretation.

For this to work on subatomic scales, it naturally necessitates a kind of *intelligence* on behalf of the particles such as the electron. And indeed it seems that Bohm thought that the electrons where alive[7].

Intelligence or chance

From the positivistic[8] scientists perspective, it makes little or no difference whether we are talking about an *intelligent* electron choosing what to do based on informational fields or a *stupid* electron whose behavior is determined completely by electromagnetic fields. If the behavior of both these electrons are identical in regards to observables (that which can be measured), then the physicist must conclude that the theories from a scientific point of view are equivalent, and can have no further opinion as to the underlying truth, or mechanism giving rise to the dynamics.

But if we have access to information about the underlying reality, from sources other than experimental measurements, then there might be strong arguments in favor of one theory over another. Thus the fact that Bohms theory of undivided wholeness, allows us to explain non-physical phenomena (such as ESP, out-of-body experiences and clairvoyance), is a strong indication that his theory is closer to the actual truth than the orthodox interpretation of quantum mechanics.

One of the key differences between Bohms theory and the orthodox interpretation (which was formulated by Niels Bohr), is the fundamental notion of order is relies on. The orthodox interpretation thus rests on a linear and stochastic notion of order, whereas Bohms interpretation rests on a holistic notion of order, symbolized by the hologram.

The key difference between the two notions of orders is that in a linear universe, changes at any point in the universe, will only affect a small neighborhood surrounding it. This is because changes are propagated linearly through space. In a universe built on a holographic principle, this is not necessarily the case. In this universe every point on the universe potentially reflect every other point, and a change anywhere in the universe, can theoretically affect every other point in the universe. So this obviously represent a very fundamental shift in perspective.

To make this a little clearer, lets explore the nature of the hologram.

The holographic reality

A holographic recording is essentially a recording of a pattern of interference between two beams of light. One way of creating such a recording is by using a monochromatic laser and a semi-transparent mirror as shown in Figure 5. Part of the light passes through the mirror and part is reflected and bounced of some object. The pattern of interference is then recorded on a photographic plate. When one wishes to bring the hologram back to life (to show it), the recording itself is subjected to laserlight and the reverse process takes place. Due to the patterns created in the recording, a pattern of interference will be created, resulting in a visual effect identical to the original 3D image.

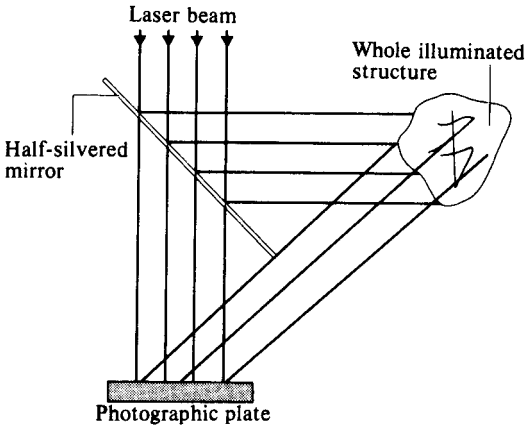

Figure 5: The hologram as a notion of order. Each point in the hologram recording is created by a pattern of interference containing contributions from every point on the object. Each point can thus be said to enfold the totality (or the whole) of the object.

What is special about a hologram is that there is not a one-to-one correspondence between points on the object and points in the picture. Rather one can say that *every* point on the object has been enfolded into *every* point on the media.

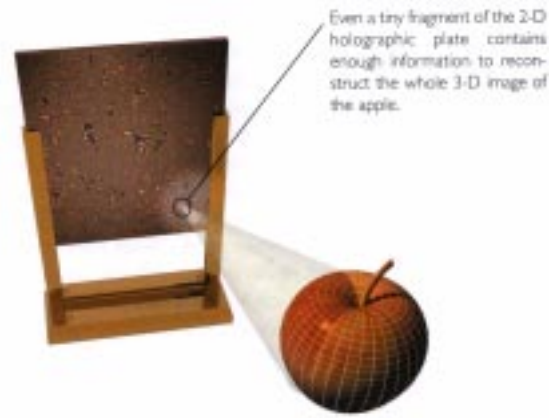

Figure 6: Due to the character of a hologram, the whole apple can be reproduced from even a tiny fraction of the hologram.

A curious result of this is that if one breaks of a small piece of the hologram and subject it to laser light, one can recreate a full picture of the original, although in a slightly fuzzy version since some detail has been lost.

In order to better understand this, it can be useful to look at the mathematics of holography. Readers unfamiliar with mathematics can just skip this section, as it is not essential to understand the discussion that follows.

We will now look at the mathematical formula for calculating the value of a point on the photographic plate B(**y**) in Figure 5. In this case the appropriate way to calculate the pattern of interference in the photographic plate, is determined by the Greens function relating amplitude at the illuminated structure to those at the photographic plate. If one assumes that only light of a single wavelength is used, having an angular frequency ω, the green's function is

$$G(\mathbf{x}-\mathbf{y}) = \frac{e^{i(w/c)|\mathbf{x}-\mathbf{y}|}}{|\mathbf{x}-\mathbf{y}|} \qquad (2)$$

where **x** is a vector coordinate relevant for the illuminated structure and **y** is a similar coordinate relevant to the plate and *c* the speed of light. Thus if A(**x**) is the amplitude of the wave at the illuminated structure, then the amplitude B(**y**) at the plate is given by

$$B(\mathbf{y}) \approx \int G(\mathbf{x}-\mathbf{y}) \cdot A(\mathbf{x}) d\mathbf{x} \qquad (3)$$

The hologram is of course a static recording and is only a *metaphor* for a new notion of order. It illustrates however that there are notions of orders that behave in a very different fashion from the linear order that we are used to rely on (and that is a useful approximation in many cases). In a "holistic" order, one can thus say that *all is enfolded in all*. Every part of the hologram corresponds to every point in the picture.

Causality or chance

In addition the above concepts, Bohm developed a way to measure the complexity of order.

To illustrate this with the simplest of examples, consider the infinite sequence of digits 2525252525. . . This sequence is said to have order of second degree, because two items of information (the digits 2 and 5) are required to fully specify the sequence. By the same token, the sequence 264926492649. . . has order of fourth degree, because four digits are required to specify it (namely, 2, 6, 4, 9).

Now consider the sequence 601324897. . . What is its order? This is difficult to say. At first glance, it appears to be an arbitrary sequence of digits because there is no discernible order. However, as the sequence continues, we might discover that it is really the following sequence: 601324897601324897601324897. . . in which case it has ninth degree, because the first nine digits are repeated forever. Or, we might find out that it is a sequence of hundredth degree, or millionth degree. Or, the sequence might never exhibit any discernible order whatever, in which case we say it is a sequence of infinite degree. Such a degree we usually think of as a random sequence. In any case, notice that *we must know the context to determine the order of the sequence.*

Randomness is dependent on context

The foregoing example hints at a much deeper insight that Bohm developed in a very general context: *randomness is not an intrinsic property of the order of a system, but rather randomness depends on context*[9]. This is a subtle but very important point, which is

likely to have powerful consequences in science for decades to come.

An example will illustrate the idea.

Consider a "random number generator," which is a type of computer program that generates a sequence of digits that appears to be random. If such a program is left running day and night, it will generate a sequence that has an order of extremely high degree (or practically "infinite"). Such computer programs work in different ways, but they all share an important characteristic: the process used to generate the sequence is a simple deterministic process[10].

If the program is run again with the same starting number, it will produce exactly the same sequence. Hence, the *program that generates this sequence has an order of very low degree*. Now comes the essential point. In the context of the computer program, the succession of numbers is determined by a simple order of low degree and, therefore, the order in the resulting numbers is also of the same low degree–which is far from random. However, in a narrower context that includes only the numbers themselves but not the computer program–that is, not the "meta" level–the numbers cannot be distinguished from a purely random sequence, and so the order of the numbers is essentially random.

From this, it follows that *randomness depends on context*, a result that Bohm demonstrated consistently in many examples throughout science. Randomness has played an essentially ontological role in science, being deemed intrinsic to certain natural processes. However, Bohm's findings imply that randomness may vanish whenever the context is deepened or broadened, meaning that *randomness can no longer be viewed as fundamental*.

Bohm's insights into randomness and order in science are summarized in the following statements "Randomness is assumed to be a fundamental but inexplicable and unanalyzable feature of nature, and indeed ultimately of all existence. However, what is randomness in one context may reveal itself as simple orders of necessity in another broader context. It should therefore be clear *how important it is to be open to fundamentally new notions of general order*, if science is not to be blind to the very important but complex and subtle orders that escape the coarse mesh of the "net" on current ways of thinking.

When considering the relation between conscious acts and stochastic systems, it is instructive to consider that certain aspects of human behavior can be very accurately modeled using probability models. Thus for a large group of people one can with great certainty say, how many will make a certain kind of choice or encounter a traffic accidents. When dealing with a certain individual, this is no longer possible.

Thus it is entirely possible, that the stochastic laws of quantum mechanics does not reflect an inherent lawlessness at the quantum level, but rather an inherent intelligence, reflected in unpredictable “choices” when dealing with individual particles. However when large number of particles are involved (an ensemble), then the behavior can be described with a probability distribution.

The implicate and the explicate orders

Quantum mechanics is essentially a probabilistic theory, postulating that we cannot say anything definite about the subatomic world because all that exists are probabilities of certain events taking place. Thus the wavefunction ψ which describes a system, only tells us the *likelihood* of a certain outcome, given that we repeat the experiment a great number of times.

But as Bohm showed, randomness is dependent on the context, and what is random from one perspective, may follow a simple causality from another perspective.

The led Bohm to postulate that there existed both an implicate order and an explicate order in nature. The explicate order is the one we can measure with our physical instruments, whereas the implicate order can be considered as a more subtle notion of order. Yet the implicate order is in many ways more important, because it is the informational template, or the source of evolution expressed in the explicate order. So even if it is more abstract, it has far greater influence on the development than does the explicate order.

Fractals and chaos as a metaphor

A metaphor that can be used to describe the implicate order is *fractals*. Fractals are generally very complex figures that are generated using a simple mathematical formula. We will use the Mandelbrot set as an example because it is one of the most well-known fractals and also one of the simplest in terms of the mathematical expressions underlying this fascinating structure. The set is generated using the complex[11] formula:

$$z_n = z_{n-1}^2 + c \qquad (4)$$

Each point is calculated by iterating the above formula a fixed number of times, and evaluating the result and assigning a corresponding color. What is characteristic is that the creative patterns occur on the *border* between the regions tending to either infinity (blue) or zero (black), and this is a characteristic found in many fractals and chaotic (non-linear but deterministic) systems in mathematics. This has led researchers to formulate the idea that the creative space is not in chaos, nor in order, but exactly on the *border between the two*.

This principle is illustrated in Figure 7, that shows how the famous fractal called the Mandelbrot set, arises from the iteration of a simple formula (Eq. 4). The metaphor is a powerful one, because it illustrates how the same reality can co-exist in very different forms.

In essence one can consider Eq. (4) as the *implicate order* of the fractal. The formula is timeless and eternal in the sense that it has always existed and will always exist as an idea. But in order to be expressed, it must be discovered and enter into a temporal or dynamical realm where it is unfolded, or explicated as Bohm would say.

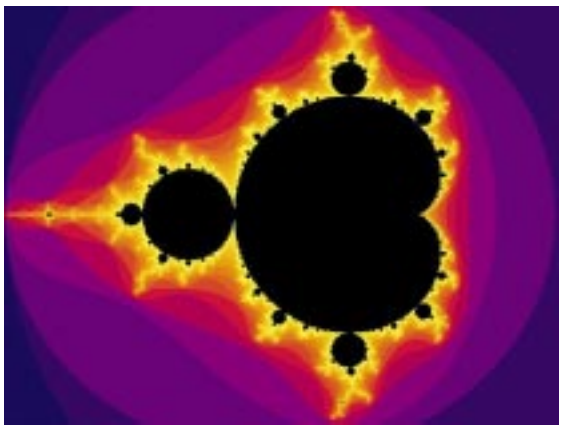

Figure 7: The Mandelbrot set. The "creative" domains are the border between the region resulting in infinities and the regions resulting in infinitesimal results (tends to zero).

If we consider the relation between the two orders in Figure 7 (the equation and the fractal) and what happens if we make a change in one of them, then we see that by changing the constant in Eq. (3) even slightly, this causes a *major* change in the image when performing the iteration, because the iterations magnify the original change. The model thus implies that if we where able to make a change in the implicate order, the resulting changes in the explicate order (physical reality) would be comparatively greater, because we *alter the dynamics of the generative order itself.* This means that changes in the implicate order is more basic than changes in the explicate order. This contradicts the materialistic idea that the concrete aspects are more important than the more abstract or subtle aspects of life.

Another interesting fact is that the fractal is in itself an example of a new kind of order–self-similarity–which incidentally is frequently encountered in nature. This notion of self-similar orders is in fact what *defines* a fractal. Self-similarity essentially means that one finds the same patterns repeated in large scale structures and small scale structures in the fractal. The reason for this is that the same dynamic principles are operating on different scales. In the fractal above, one can for instance see how the shape of the Mandelbrot set itself (the whole figure), can also be seen in smaller version along the rim.

Implication and explication

Another example of how one order can become enfolded into a different order, is shown in Figure 8.

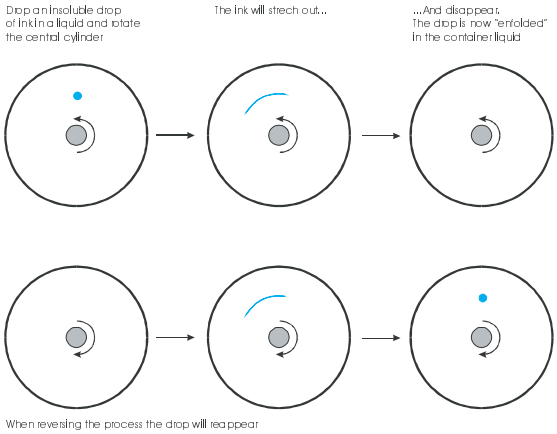

Figure 8: This figure shows how a drop of dye can be *enfolded* into the white paint. Even though it is not visible, the dye persist as an order inside the paint, and can be made explicit by reversing the action of enfoldment.

A drop of insoluble ink, is dropped into a cylinder containing a thick liquid. In the middle of the cylindrical container a smaller cylinder is rotated. This will result in the liquid being stretched and the drop will be stretched with it. Eventually the droplet will be so spread out that the eye no longer can identify it as separate from the liquid itself. The droplet is now *enfolded* within the liquid. Now, if the rotation is reversed, then the particles that constituted the droplet will retrace their paths and the droplet will be recreated.

One may also consider a series of droplets dropped in one after another and enfolded one after one. If after the last drop is enfolded, the rotation is reversed, they drops will appear one after the other *as if by magic out of nowhere*[12].

The esoteric perspective

We will now leave the traditional science for a bit, and explore the nature of reality in quite a different manner.

As mentioned, the dawn of the 20th century, also brought a third revolution in thought about nature, that has largely been ignored by mainstream science. This revolution was due to the clairvoyant investigation of matter. A tradition that goes back to the Vedic cultures, 3000 B.C., and who may now reemerge as a third leg of the physical sciences (in addition to QM and the theory of relativity).

This new information has largely been due to the theosophists Leadbeater and Besant during the period 1895-1933 and Geoffrey Hodson who extended their work with observations made in the period 1957-59.

To describe the work in any detail is beyond the current scope and I will restrict the description to the key issue relating to the nature of the basic energy structures, that has been clairvoyantly observed.

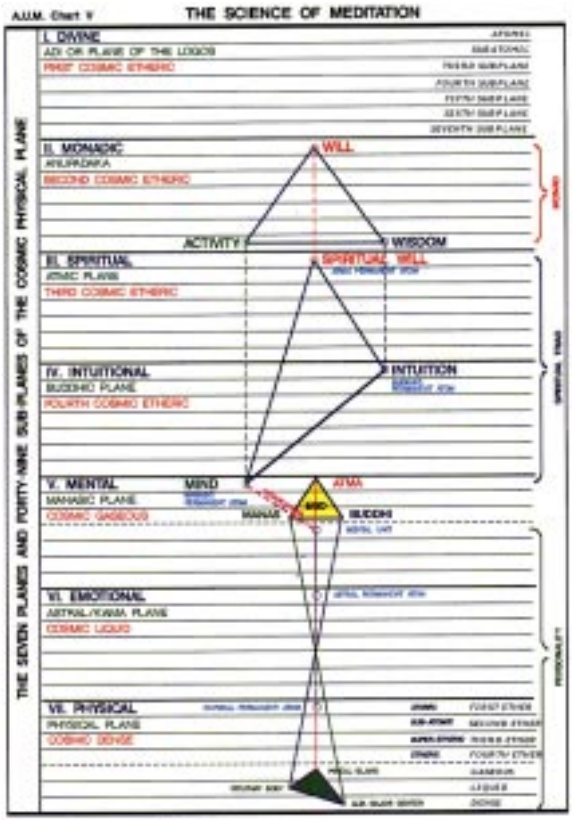

Figure 9: Illustration of the seven planes of reality according to the esoteric tradition. Each level has an atomic subplane, which is the most subtle level on the plane and which consists of energy vortexes like Figure 10. The subsequent levels consists of increasingly complex structures based on the planes atomic structures (the anu of this plane).

The seven planes of existence

In order to understand the following, the reader who is not familiar with the esoteric understanding of the universe, should know that in this tradition, the universe is considered to consist of seven planes of reality of different densities. Of these the physical realm is the densest, and the subsequent realms in order of decreasing density is the astral, the mental, the intuitional, the spiritual, the monadic and the divine levels of reality (see Figure 9).

Each of these levels are thought to have seven sub-planes, of which the three lowest and most dense levels on the physical plane is the *solid, liquid and gaseous states*. Above them (in terms of decreased density), exist 4 etheric states, whose function is to transmit the life-force or prana to organisms on the physical plane.

From this it is obvious that the physical aspect of reality is only a small part of a greater whole, and it is from this perspective that the ensuing discussion must be understood. For further information on this, please consult [1].

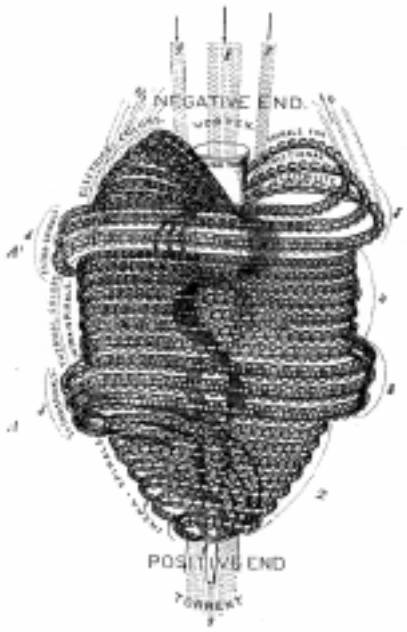

Figure 10: The anu as observed by Edwin Babbit around 1878 and confirmed by C.W. Leadbeater around 1900 and G. Hodson in 1959. It consists of 10 highly dynamic spirals lying next to each other, with the spirals each consisting of smaller spirillas, in a nested pattern, like shown in Figure 11.

The crystallization of consciousness

This basic structure from which all physical matter is created is shown in Figure 10. It is a pattern that energy is observed to take and is referred to as the *anu* (the ancient Vedic term for atom). The structure has been observed in several different relative sizes (on subatomic scales), which one tentatively can assume to represent electrons and other subatomic particles.

The anu is observed to consists of 10 spirals, lying next to each other in a highly dynamic flow of energy. Each of the spirals in Figure 10, is itself a spiral. And according to observations this structure of nested spirals continues in seven layers, giving rise to a structure resembling Figure 11. Note however that the actual structure is not spirals wound *around* other spirals, but rather spirals that are *themselves* wound into spirals. These nested spirals are referred to as spirilla of order n, where the first order is what is seen in Figure 10, and the 7^{th} order is what can be seen in Figure 11 as a line of dots (the innermost spirilla).

This means that the whole spiral can be unwound into an enormous circle of the tiniest imaginable dots. The dots appear to the clairvoyant as the absolute basic building block of all substance (physical, astral, mental etc.). And when analyzed these dots actually appears to be bubbles of absolutely nothing. And the bubbles should not be thought of as a membrane but rather like bubbles in water, where the bubble is defined by the *absence* of water.

When examining the vacuum, or the background in which the bubbles exist clairvoyant observations

indicate that the vacuum itself is of a density of an altogether different scale than the substances explored. It thus seems that matter is not “something” floating in “nothing”, but rather the opposite. This forces us to alter our notion of space and matter almost to the point of reversing them. Thus matter is the *absence* of the dense substance of the vacuum, and what we consider to be vacuum, may not empty, but full.

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Figure 11: The spirillae. The coils or spirals in the anu consist of a long thread of the ultimate "bubble", wound or enfolded into spirals 7 consequtive times, resulting in a very complicated pattern giving rise to something resembling solidity.

From this account, it would seem that, what we call matter is in fact bubbles of nothing, tied together by flows of energy into spirals that are again enfolded into new spirals several times, so that it becomes more and more like a substance. In this way, one might say that nothingness takes on a shape that allows it to create an illusion of solidity even though in reality there is nothing but flows of immaterial energies and bubbles of nothingness.

Also note that the great density of the vacuum has an interesting correspondence in the zero-point field of the modern theories of gravity, that predict that due to the fluctuations in the quantum gravity field, there might possible be more energy in a cubic centimeter of “empty” space than there is in the entire visible universe[13]. From this perspective it would seem that matter is little more than ripples on a sea of energy.

Condensation of the astral plane

In addition to Bohms work detailing the importance of the hologram as a notion of order, I have also found additional reasons why the holographic notion of order may be fundamental in the future of science.

One reason is related to the very process giving rise to the physical plane. According to Hodson [12], there is a process going on whereby energy from the astral plane is condensed into the anu of the physical plane. And what is special about it is that it appears clairvoyantly like forces are coming from every direction in a holographic manner, condensing the free essence of the astral plane into the razor sharp structures of the physical plane. Thus on the astral plane there exist only a single process, while on the physical plane, the resulting particles emerge all over in a phenomena that resembles the continuous creation and destruction of virtual particles known as quantum foam.

This and related issues will be explored further in a forthcoming book.[14]

The micro-psi molecules

From this brief account of the very essence of matter, lets look at how these vortexes of energy combine to create more complex structures such as atoms and molecules.

In relation to the molecular structures observed by micro-psi, the key issue that remain with us today is the question of *what is actually being observed*, because it is clear that these Micro-Psi Molecules (M.P.M.) do not at all look like what we know about molecules from modern chemistry and quantum mechanics. When comparing the clairvoyant observations with the atomic structures that emerge from X-ray spectography and other scientific investigative techniques, they are completely different. And not only do they have different shapes, but in the M.P.M.’s the atoms seem to merge into a kind of *union*, whereas in traditional chemistry, the particles seem to retain their particle-like *individuality* (see Figure 14).

In fact in most of the M.P.M.’s (described in Occult Chemistry) one cannot even identify the original atoms contributing to the molecule as individual particles in these compounds. It is as if the constituent atoms has been broken up and they then *re-combine* into a common pattern, loosing their individual character, yet maintaining the total number of subatomic particles that where in the original atoms. In a sense one can see this as an analogy to the way waves interact and create a pattern of interference, except here it is a pattern that take on a stable geometric formation.

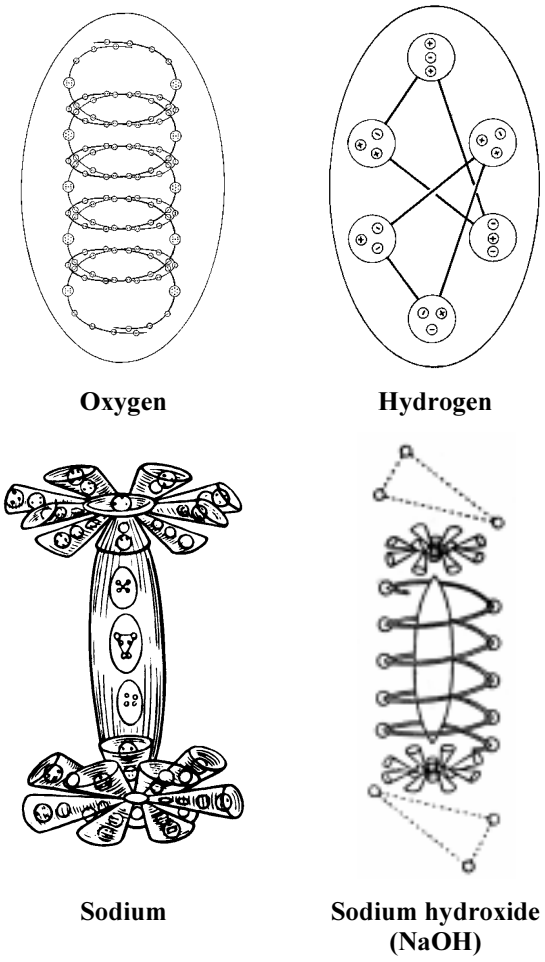

Figure 12: Micro-Psi atoms and molecules (NaOH)), illustrating how the way the atoms combine into molecules is very different from what we are used to from the orthodox chemistry.

The molecule (NaOH) depicted in Figure 12 thus consist of three atoms, Na, H and O. And when analyzing the sodium hydroxide M.P.M., one can see the forms of the contributing atoms, merged into a new pattern. The small dots in the three atoms, represent the anu (as shown in Figure 10). As can be seen from the illustration of hydrogen, it is clairvoyantly perceived to consist of two overlapping triangles. Triangles which apparently disassociate when hydrogen enters into a M.P.M. In the figure of NaOH, one therefore sees the dumbbell shaped sodium atom somewhat disassociated, surrounded by the oxygen spirals and with a single hydrogen triangle hovering at each end. An in relation to this molecule, the observers had a very interesting note[15]:

> It is here noteworthy that the chemical combinations examined clairvoyantly produce effects which are *not solely mechanical*. They radiate a quality of feeling which, however rudimentary, causes a reaction in the observer. Thus the observer, even without any chemical knowledge, would note that NaOH is *not a pleasant thing*, and that it *feels as though it would burn*.

Thus if we believe the micro-psi observations to represent phenomena that objectively exist, then it is clear that it cannot easily be reconciled with what we know of the atomic structures from modern chemistry.

Separateness or wholeness

In order to appreciate the difference between the two descriptions (micro-psi and QM), lets briefly look at how QM describes molecules.

In QM one can calculate the statistical distribution of electrons, based on Schrödingers equation, which is the fundamental equation governing the behavior of the quantum world. The calculations is based on positive nucleuses surrounded by a cloud of negatively charged electrons, in different orbits.

Schrödingers equation has the form:

$$i\hbar\frac{\partial\Psi}{\partial t} = -\frac{\hbar^2}{2m}\nabla^2\Psi + V(\mathbf{x})\Psi \qquad (5)$$

which results in solutions like the ones showed in Figure 13.

The orbitals represent the squared amplitude $|\psi(t, \mathbf{x})|^2$, which is interpreted as the *probability* of encountering an electron at a specific point in space and time. Hydrogen which is the simplest of all atoms, is actually the only atom where it is possible to calculate an exact mathematical solution to Schrödingers equation, because when multiple atoms are involved, the complexity grows enormously.

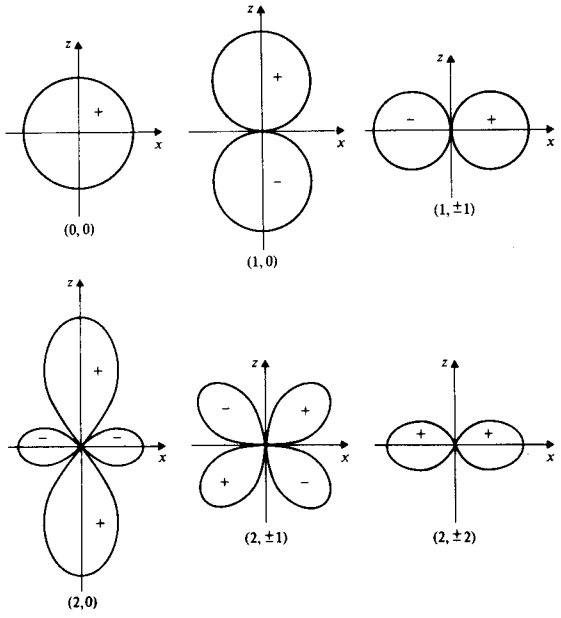

Figure 13: Electron orbitals for hydrogen. The figure shows the spherical harmonics for the quantum numbers (*l, m*). The distance of the plot from the center corresponds to the magnitude of the wavefunction in this direction.

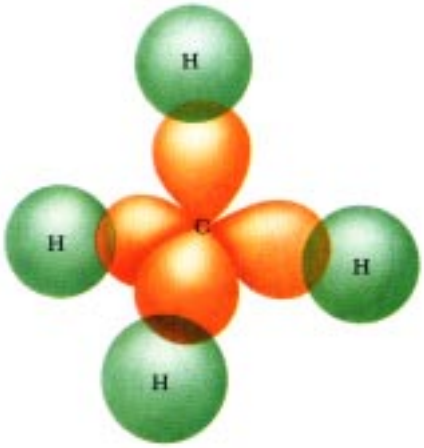

Figure 14: Methane (CH_4) as modeled using quantum mechanics and the orbitals that emerge from these calculations. Note that the individual atoms are modeled as separate entities, that partly share their electrons in certain of their orbitals.

In Figure 14, one can thus see how a methane molecule is modeled. Each atom is thought of as a spherical entity, and the bonding take place through overlapping orbitals, that result in a lowering of the total energy. The fact that the atoms can lower the combined energy through entering into geometrical configurations as shown above, is what gives rise to the effective bonding.

The key point I wish to make in relation to the quantum mechanical solutions is that the models are based on a notion of separateness. And we have an equation which yields solutions that are interpreted in a statistical fashion. But the fact that this interpretation has led to spectacular progress and that no experiments exist that violates Schrödingers equation and the resulting solutions, does not mean that there cannot exist explanations of the sub-quantum world of a *more* exact nature. Bohm proved this [4] and in this article it is suggested that the micro-psi observations may provide important insight into the nature of the sub-quantum world.

So one approach to unifying the two paradigms, is to consider the micro-psi observations as a more detailed description of the sub-quantum world. But a description that when examined experimentally will statistically yield the results predicted by quantum mechanics, even though individual particles are governed by dynamics beyond what is captured in QM.

Strings or spirals

When comparing the string theories with the clairvoyant observations, it is interesting how an essentially 1-dimensional string plays a fundamental role in both models. And the clairvoyant investigators had of course no way to know that orthodox science would come up with a string theory, since the micro-psi observations was published at least 60 years prior to the formulation of the first string theory. In the description of the anu, this string consist of a large number of "bubbles" of nothingness inside a dense essence (an anu consists of approx 10^{14} bubbles wound into nested spirals[16]), while in string theory, the strings are 1-dimensional mathematical objects.

It is furthermore curious that while the esoteric understanding of the universe operates with 7 planes of existence (6 non-physical realms and a physical universal with 3 spatial dimension and a time dimension), then the most accepted superstring theory has a solution in 10 dimensions (9 spatial and 1 temporal), with a possible 11^{th} dimension growing out of the 10, due to the need for strings that are not purely 1-dimensional objects. But there is also a fundamental difference between the two models. Particular in regards to the role consciousness play in them.

As a final note on the role of strings in the unification of QM and relativity, is it is interesting that it has been shown during the research in superstrings, that the fact that the strings are not point-like, but has a certain size, resolve many of the problems of unifying quantum mechanics and the theory of relativity. This is interesting because this means that the same goes for the anu and other objects observed through micro-psi. Because they have a finite extent and thus aren't point like particles, they could potentially serve as a mechanism to unify the two major theories.

In order to understand to better understand the role consciousness play in relation to physics, lets take a look at a model of how different *states* of consciousness arise as a result of limitations imposed on the naked consciousness.

Understanding atomic consciousness

The true nature of consciousness has never been satisfactorily explained by science, and probably never will, within the positivistic paradigm.

According to the esoteric perspective everything, including consciousness is reflections of one source of being, the creator or spirit. From this perspective different states of consciousness can be considered to be the result of a particular kind of fragmentation or limitation of the source. Thus states of consciousness arise due to the *effect* the fragmentation or limitation has on the essence.

When we talk about consciousness, it is very hard for us to imagine notions of consciousness, that are radically different from our own self-awareness. Imagining that an atom, a planet, a solar system or the entire universe can posses some kind awareness, is very foreign to our thought. Yet it is a simple and inescapable consequence of imagining the universe as an undivided whole reflecting a common source of being or essence. In fact, research published by James Lovelock [16] has provided evidence that there are phenomena in the earths biosphere, that can only be understood, if one accepts the existence a kind of meta-

intelligence, that causes entire ecosystems to act as if they are intelligent. This has been popularized in the image of the living earth–Gaia. An image which may in fact turn out to be even more appropriate than Lovelock had perhaps imagined. And if we believe that everything in the universe has grown out of some order of intelligence, beyond time and space, then it is obvious, that our own awareness must in fact also be a fragment of this essence.

As mentioned, one way to appreciate how different kinds of consciousness may arise, is to consider all states of consciousness, as a result of a particular kind of *restriction* of the naked consciousness or spirit.

The key point here is the notion that all that exists is a manifestation of one source, who subjects itself to limitations in order to make certain creative processes possible. It is however very difficult, or even impossible, to say anything about the *nature* of the source itself, other than that it exists. The source of existence is thus beyond our ability to comprehend, but we *can* however say something about the various *limitations* it is subject to in different contexts, because we can understand the dynamics that arise as a result of these limitations.

The anu is one such type of limitation, giving rise to certain properties. But when dealing with the nature of consciousness, it is important to remember that it is not the limitations themselves that causes particular kinds of awareness to come into existence, but rather the *effect* the limitation has on the source, or life-force, that is subjected to this limitation. As an analogy, one can imagine the awareness that arises from a human being climbing mount Everest. The mountain is not the cause of the awareness and experience that results, but the effects that the mountain causes is responsible for the experience.

An analogy to limiting the source

If we now consider this essence as having a wavelike nature, then we can find a metaphor for how the different kinds of awareness arise in what happens to electromagnetic fields, when they are confined to the inside of a cavity.

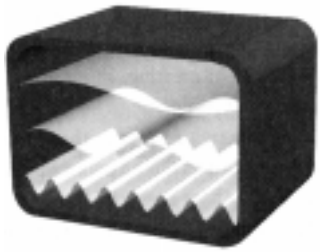

Figure 15: Cavity with electromagnetic waves inside. Due to the limitation of the box, only certain waveforms can exist, causing a quantization of energy.

When electromagnetic waves are confined to a space of a limited size (as illustrated in Figure 15), then an interesting thing happens. Even though the field itself is continuous, it will become quantisized and fragmented when subjected to the limitation of a cavity. Thus inside the cavity, the only waves that can exist, are those whose wavelength satisfy

$$k\lambda = L$$

where λ is the wavelength, L the size of the cavity and k an integer constant (assuming all sides on the cavity are of equal size).

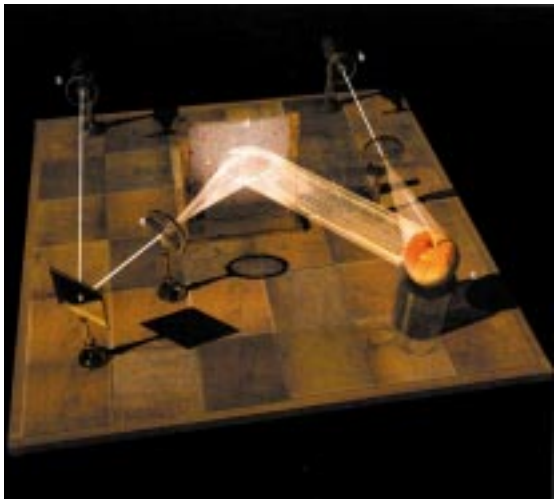

Figure 16: Illustrating how the hologram arises from an interaction between the wave-like light and the structural pattern of interference in the holographic recording.

In a similar way, we can consider that spirit is essentially an infinite field. Yet when subjected to certain restrictions (such as being forced into the "cavity" of an anu), the result is a fragmented state of consciousness. The smaller and denser the cavity, the more restricted and limited will the awareness be, yet it will *remain a reflection of it's source.* And because consciousness as well as matter is a reflection of one source and arises as an interaction of this one source, then the resulting dynamic will be endowed with *holographic properties*. These holographic properties is the result of the interaction of field and structure, as an exact analogy to the dynamic illustrated in Figure 16.

From en esoteric perspective, reality consists of nested planes of different densities. On each of these planes are supposed to exist energy-structures similar to the physical anu, giving rise to different states of consciousness due to the different nature of the limitations they induce. So the astral and mental anu are each in their way restrictions of the essence, but less so than the physical anu, and thus allowing much more advanced awareness, than the dense physical structure (the anu).

Since human beings exist on both the physical, astral, mental and even higher levels of reality, the human self-awareness arise as *combination* of mental, astral and physical awareness, giving rise to our particular experience of consciousness. This indicates however that many other kinds of consciousness of a completely different nature can be expected to exist and be explained through this model, an issue which we will return to later.

So when trying to understand the kind of awareness possessed by the physical anu one must understand that it is a purely "physical" consciousness and the possible states of awareness it can possess is correspondingly limited. However it is the same essential *phenomena* that lies behind both physical, astral and mental awareness, although the quality of awareness are very different.

The intelligence in nature

Now that we have introduced the different scientific avenues of understanding the nature of reality, lets try to explore a possible framework for integrating all this into a common framework.

One of the key issues that remain unexplained by science, is the issue of *form*. How different forms are created and maintained, thus continue to be a great mystery for orthodox science. Examples of such forms are the human cells, organs and even the whole body. What makes this masterpiece work as a whole, and keep it from breaking down. Can this be explained through local cellular and stochastic principles, or is there a greater formative principle which plays a role?

It is clear that the DNA, somehow *encodes* the nature of a plant or an animal, but the mechanics whereby this encoded information is unfolded remains a mystery. What is it that tell a cell that they should position itself in particular place, and perform the complicated functions it does. The chemical mechanisms are being uncovered by microbiologists, but it remains unexplained why the biological systems are able to maintain the very delicate balance needed by life.

One possible approach to solving this, revolves around the idea that intelligence is intrinsic to matter. This would go a great length towards explaining these mysteries but leaves us with the problem of understanding the *operational* mechanisms behind this intelligence.

The triadic nature of matter

In the esoteric science, the universe is considered to arise from one source, that fragments itself and through this gives rise to the creative dynamics. It is furthermore thought that the most basic properties of the source are the principles of *will, love and intelligence* which manifests as three laws of creation which is:

- the law of synthesis (causing existence),
- the law of attraction (creating form) and
- the law of economy (governing the dynamics of the parts creating the form).

The law of synthesis is too complex to go into in this context, except to say that it deals with the *purpose* of the creative unfoldment and the synthesis that is created when physical forms are dissolved or destroyed after having fulfilled it's purpose. One such example is the destruction of the human body and the synthesis that takes place on a soul level, immediately following the physical death.

The law of attraction on the other hand is very important in the formative dynamics. It is the law that is behind the hidden causality in life, and the mechanism that draws us to certain places, people and experiences. Essentially the force of attraction arises from the fact that we are drawn towards other lifeforms that allows us to manifest our creative purpose in life. This is true of humans, atoms and other lifeforms.

When looking at the whole picture of the theory of relativity, quantum mechanics and the micro-psi observations, there is a relation to the three fundamental aspects of esoteric science that suggests itself.

The theory of relativity is related to the creation of spacetime, the very *existence* of the universe. A process which might have a link to the creation of the "bubbles of nothingness" which is observed to give rise to matter, something that will be explored the coming book [14]. Quantum mechanics is clearly related to the law governing the dynamics of the atomic realm and thus related to the law of economy, which essentially states that a particle will always chose the path of least resistance or select the lowest possible energy state. And this is exactly the dynamics governing physics.

If we return to the three esoteric laws, we can now see that what remains unexplained theoretically in terms of modern science is the law governing *form and life*. The esoteric law of attraction, which is what connects the two others, have no counterpart in the framework of modern physics. This suggest that there is a hole in the theoretical framework and that yet another theory may be needed to explain the formative aspect of nature. This theory has not yet been formulated, and will in all likelihood shed additional light on both quantum mechanics and the theory of relativity, when this happens.

Thus the hypothesis that I will pursue in the following is that matter is *triadic*, which means it has three fundamental properties, which are:

- *Dynamic properties*, which govern the interaction between individual particles
- *Formative properties* which govern collection of particles and their formative aspects.

- *Intentional properties*, which relates to the purpose and existence of substance as the vehicle for life.

Multiple universes

Before diving into the substance of these properties, there is however one consequence of the previously discussed issues that we need to elaborate a bit. It relates to the fact that if everything in the universe arise from one source, (essentially a *non-physical* source), then it is obvious, that many kinds of "beings" of a non-physical nature would be expected to exist. In fact the physical plane, and our spacetime reality, is just one of many possible universes, and we should in general expect many different kinds of reality to co-exist and influence each other through their interaction. None of this is of course measurable from the physical plane.

The devas in nature

In the esoteric literature dealing with nature and evolution, one often encounters the concept of *devas*. Devas are described by clairvoyants as nature spirits and beings that assist in the evolution of the *forms* on the physical plane. The devas are said to have bodies consisting of the subtler densities of matter or the substance of the etheric subplanes. The role of the devas in nature is to assist lifeforms (and even minerals) in their development, or perhaps rather direct their development.

According to clairvoyant observations, is seems that the way biological systems grow, is related to the existence of an etheric body (a body of less dense material than the physical). When a leaf grows on a plant, it can be seen by clairvoyance, how the etheric leaf is first created, and subsequently "filled out" with *matter. Thus the etheric body may act as an informational* template *telling* the physical atoms and molecules where to go. This has a clear analogy to the "pilot wave" idea of Bohm, whereby the wavefunction serves as an informational field, informing the electrons about it's surroundings and enabling it to make "choices" about it's behavior.

And according to esoteric science, the devas are the ones responsible for building the etheric body of plants, animals and humans as well as the subsequent transfer of energy and life-force that maintains the patterns, once they have been established. The devas thus seem closely related to the issues involved in formulating a theory explaining the formative laws of nature.

The different forms of devas

Devas are supposed to exist in many different forms. Some are very small and can perform a limited range of task, akin to a single-celled organism. Some are highly evolved beings, that are self-aware and like human beings can conceive and understand complex patterns. Clairvoyants that claim to be able to see such beings report that one will often see great devas presiding over valleys or a mountain ranges, while smaller devas attend to individual plants.

The drawing in Figure 18 illustrates what devas look like to clairvoyants. When analyzing the drawing, it is however important to keep in mind that what the clairvoyants experience a dynamic dance of multidimensional energies which of course is impossible to convey in a drawing.

To sum up, the clairvoyants report that the devas play a fundamental role in the formative dynamics of nature. If that is correct, then understanding the interaction between the devas and matter is very important, and can potentially yield groundbreaking insight into ways of working with the creative forces of nature.

The role of devas in creation

But how does devas fit into the nature of reality, and are they necessary at all? According to our experience, plants and animals grow fine by themselves, don't they?

From the perspective of the casual observer, this might indeed seem correct. It is certainly true that matter seem to have a self-organizing capability, and that simple life-forms can live almost everywhere, even under the most hostile conditions. Indeed life seems *extremely versatile* and can apparently adapt to almost any circumstances that we can imagine[17].

If we take seriously the clairvoyant testimony regarding devas, then we are left with a paradox. It thus seems an absurd to think that "small invisible beings" (the minor devas) should "stand by" at every moment, in every part of the universe to assist in every little process. It however also seem absurd to think that the obviously highly creative nature and the self-organizing properties of natural systems are just the result of random phenomena. There are just too many things that have to just right, and too precarious a balance required to imagine that there is not some kind of intelligence at work in the evolution of nature.

But perhaps there is a different explanation. If we thus turn to the esoteric science for inspiration, then it is suggested here that the minor devas are all-pervasive, and exists everywhere and are even intrinsic to the substance itself. This suggest that the minor devas literally are the intelligent aspect of matter. This was hypothesized to exist by Bohm, and would explain the self-organizing properties, and many of the other strange attributes of matter, that is required to develop complex life-forms. The minor devas have no independent will, nor any understanding of the forms they are building (plants, cells, minerals etc.). They are very limited, but has the very important quality that they understand the nature of matter itself [1].

A human analogy to devic creation

Referring back to the idea that while DNA encodes essential information for the unfoldment of life, this is not enough to explain how the dynamic patterns of life are maintained. As an analogy (referring to Figure 17), we can examine the process whereby a human being interacts with a computer to perform a creative task.

Function	Computer technology	Universal intelligence
Intentional	Human operator implementing an idea	Major devas implementing natures intelligent design
Operational	Software logic and processing ability	Minor devas or formative fields creating order
Representational	Harddisk storage and RAM (memory)	DNA and matters structural properties

Figure 17: Illustration of the role devas play in the creative process, based upon an analogy to the way a human being interacts with a computer to create something.

In order for the computer to function, it requires a representational mechanism for storing software and designs (documents). But in order to do something with these documents, it requires processing power and software to handle the documents, thus invoking a new mechanism or principle.

The CPU (and the processing mechanisms) thus access the informational templates (software instructions and documents on harddisk) and bring them to life (by displaying them on a screen). This makes it possible for a human operator to interact with the low-level intelligence embodied in the computer, and use it according to the creative idea or intent the human being has.

In order to enable the creative process, there are thus three orders of intelligence that must be invoked.

- A *representational mechanism*, making it possible to encode ideas in a concrete form.
- An *operational mechanism* required to translate the encoded information into a form that is suitable for human interaction
- And an *intentional creativity*, exemplified by the human, that are able to make intelligent changes in the informational structures (document and software code), and understand the possible consequences.

In the evolution of nature one sees the same principles in operation. In relation to lifeforms as such, the DNA serves as the information store, encoding the instructions, the minor devas or the intelligent aspect of matter can decode this and explicate or unfold it, thus creating a form which can serve as a vehicle for different lifeforms. And finally the greater devas can make changes in the informational templates, through interacting with the more basic intelligences present in the minor devas. The analogy is complete.

If this is true, then it explains why modern geneticists are so successful in creating new species by changing the informational templates of living creatures. But it also suggest that there exist a different mechanism, which is potentially much more efficient and appropriate, namely *cooperating* with the major devas, in designing and creating new species of plants and animals. This points to a new role of the human race as cosmic co-creators. But it also point to the necessity of expanding our horizon in an attempt to understand not only the form side, but also the intent that lies behind nature, from the point of view of the greater whole of which we are a part.

Figure 18: Drawing of deva observed in the Drakensberg Range in Natal. At least 20m tall. Comprised of a striking 3 dimensional axis of rapidly spinning funnels. Formed with a brilliant radiance and observed over successive days.[18]

A hypothesis of devic creation

If we are to formulate a hypothesis for how devas fit into the theory of everything, we can list a couple of things such a model must incorporate.

First of all, there exist many more kinds of life and consciousness than we have previously imagined. Some are highly evolved beings that are part of unfolding the beauty and intelligence in nature. These are the major devas. Then there are all-pervasive devas which has no self-awareness, and can be considered to be part of matter itself, and indeed is what gives matter it's intelligence. If one thinks of matter as a manifestation of consciousness, then as we have seen from the discussion of quantum mechanics, it becomes natural to view the wavefunction *as a holographic*

pattern of interference between two (or more) orders of consciousness giving rise to the *effects* that we witness. So one might say that the dynamics of the wavefunction ψ, is in fact the result of the intrinsic devas creative work.

From the esoteric science we have the concept of the one source manifesting through three different orders of intelligence, embodying *intent, form and dynamics.* It is therefore natural to consider matter as a holographic pattern of interference between these three orders of consciousness. What science has so far uncovered is mainly the *dynamic* aspects, and what lies ahead of us is uncovering the formative aspect and the creative design embodying the underlying intent in nature.

The greater devas

From this perspective, the role of the greater devas, now becomes to *organize* the minor devas according to the greater design and to guide the evolution of the whole. What the idea of devas add to the traditional ideas of evolution is a mechanism that can explain the apparent intelligence in nature. A mechanism that allows entire ecosystems to unfold, under the guidance of intelligent beings.

As an example, consider how in the natural evolution the devas could guide the emergence of a new bird species. A bird, which must not only develop wings but aerodynamically adapted feathers, appropriate musculature, shifted center of gravity, lighter bones and appropriate changes in metabolism–all at the same time. Any one of these changes by itself would likely decrease chances of survival, only if created simultaneously do they improve the chances of survival.

Unifying physics and metaphysics

Before we proceed with proposing ways to integrate these perspectives, I would like to expand a little on the limitation of the mathematical models in describing consciousness.

Laws of mathematics or consciousness

The idea that nature can be expressed in mathematical form lies implicit in the idea of physics and is inextricable intertwined with the fabric of scientific thinking. When exploring an expanded vision for science, it can however be useful to consider that there may be *other* laws or causal relations than mathematical laws. Laws that nonetheless define a causality that is universal, yet operates according to a completely different notion order.

When considering what other kinds of order there exist which such laws can obey, we can consult the esoteric sources. In [1], the different orders of laws from an esoteric perspective are described and we find that:

- The dynamic manifestation of objective reality (including matter) obey *mathematical laws.*
- The formative manifestation of reality obey *mantric formulations* (intentions encoded in vibrational patterns).
- The intentional aspect of manifestation proceed through the verbalizing an intent with the use of focused will. Something that is hard to understand in scientific terms and that will remain within the domain of the occult for the foreseeable future.

From this it would appear that *the physical universe obeys mathematical laws*, which we know, but it would also indicate that there are certain aspects of objective reality at other levels (astral, mental etc) that *also follow mathematical laws*. As an analogy to the physical plane, one might suggest that in the thought process there are dynamics that follow mathematical laws (as in physics), but also dynamics that follow other laws (laws of consciousness). The fact that these levels are *partially* subject to mathematical laws, should however allow us to develop a better theoretical understanding of the mental and astral processes, similar to what has happened in physics.

The point is that the three levels of laws (mathematical laws, formative laws and intentional laws) interact at all levels. The mathematical laws govern the dynamics of the system, regardless of whether it is on the physical, astral, mental or higher planes. Thus it should be possible for us to create mathematical theories extending into the non-physical realms, but we can only model the *dynamic* aspect with mathematics. To understand the formative and intentional aspects we must study the spiritual laws or laws of consciousness.

The theory of life

This then leads us towards the final formulation of the conceptual framework for a new approach to uncovering a theory of everything.

As stated earlier, the nature of the clairvoyant observations are such that it is not possible to reconcile the observations with what we know about the nature of physical reality from modern chemistry and quantum mechanics. If however we accept that the observations underlying this whole discussion is *essentially true* and if we accept that what is being observed through micro-psi is somehow related (or at least *correlated*) to physical matter, then it remains to explain exactly *what* it is that is being observed.

To shed some light on the nature of our problem, lets remind ourselves of a well-known parable, that can be used as a metaphor for nature of our dilemma.

The tale of the three blind men and the elephant

It is the tale of three blind men, that where presented with an elephant and asked to explain to their fellows what an elephant was like. The first blind man, claimed

that the elephant is tall and slim like a tree trunk. The second proclaimed that the elephant was massive and round like a barrel, while the last man held that the elephant was soft and flexible like a carpet. And no matter how much they argued, they could never agree on what an elephant truly was like. The observant reader has of course already figured out that one held a leg, one the body, and one the ear of the elephant. So in truth they where all correct, but each has only uncovered a single aspect of the true nature of the animal.

The point is that the picture of reality created by modern physics, is founded on the notion of separateness. An image of nature based on separate entities (particles) that are interacting with each other. It is clear that this image of reality contains essential truths about the true nature of reality, but the question is if is the *full* truth.

As we have seen from the discussion earlier, is seems that wholeness, in the sense that a given system can only be understood as a whole, is also a fundamental property of reality. Just as separateness or individuality is. This might lead us to speculate if there exist a principle which means that every system with equal right can be considered as a *whole*, and a *sum of individual parts*. Both of these perspectives may be equally valid. Giving rise to qualitatively different yet correlated realities (as illustrated in Figure 4).

The particle perspective or the fact that any objective form, must necessarily be created by assembling smaller, more basic forms, into a new whole, points to the fact that the evolution of any form or organism is dependent on, and limited by, the nature of the basic forms of which it consists. At the same time, any form or organism is dependent on the formative aspects of the whole, to organize the parts into a meaningful pattern. This leads to a general principle, which initially was formulated by Ken Wilber [17], which states that, *the lower determines the possibilities for the higher, while the higher guides the evolution of the lower*. By higher and lower is meant respectively the whole, and the parts. This may be a universal principle, which would explains the dynamics between the transcendental source of creativity and the way it expresses through evolving and dynamic living systems in the temporal realm.

If we accept the idea that reality originates from an essence beyond all dualities and even beyond the division of reality into subject and object, then it follows that the true and undivided reality underlying all the phenomena's we are discussing must be transcendental. That is, the reality ultimately transcends both subjective and objective perspectives, since both are ultimately fragmented perspectives, as seen from the naked consciousness.

This suggests the existence of a *law of the whole*, which states that in any context exists laws of wholeness which guides the evolution of form and expression. And that the formative law interacts with laws of dynamics, giving rise to increased complexity and new orders of dynamic creativity. The two are qualitatively different kinds of laws, and we thus cannot use our previous notions of order to comprehend the order of the whole, which guides evolution, but must turn to notions of order which can encompass the relationship between the whole and the part. One such notion is as we have seen the hologram, which gives us a hint at the qualities in the natural laws we might expect to find, when we are able to uncover the precise mechanisms underlying the *formative aspect of nature*.

The dual faces of reality

Thus what is proposed is that the image of reality based on separate particles and their interaction, is only *one* face of reality, and that another face based on *wholeness* should be expected to exist. Each of these faces are reflections of a deeper unity and depending on the context, different aspects will emerge. Thus your answer will depend on the way you phrase your "question". If you create a physical experiment, you will get an answer in terms of separateness. If you explore matter through the use of subjective techniques such as micro-psi, you will get an answer in terms of wholeness.

Another way of formulating this, is that there might be a fundamental duality in nature, in the sense that everything has a *life-side* and a *form-side* to it. The form-side is governed by what we know as quantum mechanics, and the life-side is governed by laws as yet unknown, but laws that should be knowable and at least partially expressible in mathematics.

Given the wave/particle particle duality in QM it would be natural to think of the face of separateness (or objectivity) as particles and the face of life (or subjectivity) as waves. This analogy can at least partly be said to be present in the M.P.M. shown earlier, where the atoms in the molecule *form a common field and interact in a wavelike fashion* (see Figure 12). In the M.P.M the different "notes" each particle contribute with, is mixed with the other notes in the compound or structure, giving rise to a vibration of consciousness which is not only the single notes of each particle, but *new* qualities created through their interaction.

When thus see how several atoms give up their original form and merge into a union. Seen from the life-side, the two atoms are not independent entities, but *notes in a common harmony*. And like waves on a string, the two will naturally merge in a common expression of their nature, whatever it be. We see this in the M.P.M. as a merging of the constituting molecules into a new form and although their individual constituents can still

be identified, they now have a common identity as a molecule *merging* their vibrations and in this way creating a new pattern of vibration, or a new whole, enabling the naked consciousness to manifest new aspects of it's creative intent.

It is however important to remember, that although the aspects of separateness and wholeness (as seen in micro-psi) are clearly correlated, they express two qualitatively different aspects of the substance.

Some key properties of the theory of life

In order to create a framework unifying the different aspects, it seems that it must rest on concepts that reflects both wholeness and separateness at the same time. It must be a framework that has as it's fundamental premise that everything in the objective reality is reflections of a single source, yet reflection of immense diversity and creativity.

What is missing in order proceed in creating a framework unifying relativity, QM and micro-psi is most likely our limited understanding of this third leg of science explored through micro-psi. It seems natural that there exist a theory describing the behavior of the *life-side* of the molecules, which can describe and predict the behaviors seen with micro-psi. We will name this the *theory of life*, in the lack of a better name. Because these laws are related to the physical plane and are agents in creating the objective universe, they should be expected to obey mathematical laws (at least partially) and we should therefore be able to model them mathematically.

Quantum mechanics, relativity and the *theory of life (TOL)*, will most likely be discovered as limiting cases of a universal law underlying them all. A theory that explains consciousness, physics and the formative aspects of nature in it's full extent.

While the mathematics of TOL, is as yet unknown, we might speculate on some key aspects of this theory.

- First of all, it is likely to have a part/whole duality. By this I mean that everything can be understood at the same time as a part (a molecule or a cell) and a whole (an organ or a human being).
- It will also explain the qualitative side of reality, which is to say the consciousness aspect of matter.
- It will be essentially holographic in nature, because the interaction between the source of life, with the form of life will be the dominant dynamic. And as we have seen the holographic properties arise from the interaction between a wave-like field (light) and a structural entity (form). See also Figure 16.

In the table below, some of the key attributes of the different theories have been listed in order to illustrate their differences and potential similarities.

Theory of relativity	Quantum mechanics	Theory of life
Governing existence	Governing dynamics	Governing form
Spacetime/matter duality	Wave/particle duality	Part/whole duality
Continuous	Wavefunction specifying probability	Undivided wholeness
Invariant in relation to all inertial frames	Indivisibility of the quantum	Holographic transformations
Curved spacetime	Separate identities	Unfoldment
Relative time	Coherent time	Withinness
	Uncertainty relation	Wavelike qualities
		Expressing ideas

Table 1: Overview of the different theories and their essential (and suggested) qualities.

Conclusions

First of all, this article demonstrates that it is possible in principle to formulate a scientific theory of nature, that is congruent with the esoteric claim that everything in existence springs from one source. Indeed this approach to modeling reality, allows us to understand many phenomena of consciousness, which has hitherto been considered as mystical, such as clairvoyance and other transpersonal phenomena's. Within the presented framework, these phenomena would be expected to exist, although it remains to explain them in detail.

This articles does not claim to provide answers to the nature of reality, but aim to outline a framework for inquiry, that hold a chance of uncovering these answers. Thus by taking seriously Bohms idea of undivided wholeness as well as the clairvoyant testimony from occult chemistry, it seems clear that a complete reversal of our notions of reality is required. From a concept of an objective universe as the primary reality, we are now faced with a holographic universe, where the primary order is that of essence, or spirit, which manifests itself through fragmentation into lesser parts that interact creatively. But a reality that is always a reflection of the source, and where in it's deep essence, everything is still one, which gives rise to the holographic properties such as the part/whole duality, as well as the non-local effects in quantum mechanics.

From a scientific point of view it is curious that there are such extraordinary similarities between the clairvoyantly observed phenomena and the modern theories of physics. First of all there is the fact that the investigators supposedly discovered several elements decades prior to conventional scientist[19]. But the fact that superstrings and micro-psi is both rooted in the dynamics of essentially 1-dimensional string points strongly to the fact that micro-psi is a genuine phenomena.

The conclusions must clearly be that *serious research must be undertaken* to reproduce and extend the results obtained by micro-psi so far. However, this work must

be conducted in a way that respects the spiritual nature of the undertaking and approach it in a responsible and wise manner. Understanding that what is important is not just the technical understanding of nature that we might obtain, but introducing a whole different conception of reality and it's implications for all scientific research.

From a more philosophical point of view, the consequences of the new notions of reality are mind-blowing. Even as I have been working with this material and trying to present it as clearly as possible, It is very challenging to accept the consequences, that flow from the arguments. One key conclusion is that our thoughts and ideas are just as real, if not more real than the physical reality that surround us. Another conclusion is that everything in the universe is literally alive. There is no such thing as "inert matter", only various degrees of limitations of the one source of life.

Finally there is one more aspect, which is very important from a more philosophical and societal point of view. If it is true that there is one creative source behind all of creation, then we must necessarily infer that *there must be a grand design in nature. A cosmic plan*, which is under unfoldment and that our universe is an expression of an intent, or an idea, that is currently evolving.

The philosophical consequence of this is huge and will affect every aspect of our lives. At a bare minimum, it suggest that we must redirect our aspirations from the attempt to *master* nature, to contributing actively *in the unfoldment of the cosmic design.*

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For further information visit the www.gaia-institute.org website where several of the original documents can be downloaded.

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[1] The term *esoteric* literally means that which is hidden. Esoteric science refers to the wisdom traditions and knowledge about nature obtained through unconventional mechanism such as ESP, clairvoyance and other means of knowing about nature using spiritual faculties.

[2] The mechanism is one whereby the observer is able to make the point of observation as small as the subatomic particles and is able to see the dynamics of the subatomic realm. For more on this visit the www.gaia-institute.org website where several documents are available.

[3] Language depends on a fundamental duality between the description and what is being described. Thus even assigning a label to something, is a process of awareness that can only take place if there is a fragmentation of awareness into subject and object.

[4] Stephen Hawkins in *The universe in a nutshell*.

[5] The experiment to verify the non-local coupling was conducted using a smaller scale of course (since measuring i different ends of the universe is not practical), but the distance of separation does not seem to matter. The experiment was made by Alain Aspect in 1982.

[6] The orthodox interpretation escapes the non-locality paradox, but this just replace it with another. It removes non-local influence, but replaces it with an irreducible lawlessness at a quantum level, which is equally problematic from a scientific point of view.

[7] While still a graduate student in Berkeley, Bohm did pioneering work on plasmas at the Lawrence Berkeley Radiation Laboratory. He discovered that, in a high temperature gas (known as a plasma), electrons that have been stripped away from atoms do not behave as separate individual particles but rather as part of a larger, organized whole. Vast numbers of electrons would produce effects that were highly organized, as if some organic process were orchestrating their

collective behavior. Bohm later reflected that these collective movements, which today are called Bohm-diffusion, gave him the impression that the sea of electrons was somehow "alive."

[8] A positivist is a person who believes that everything can be explained without invoking any kind of final causes or teleological entities.

[9] Bohm defines a random order as one having the following three characteristics: (1) it is of infinite degree, (2) it has no significant correlations or stretches of suborder of low degree, and (3) it has a fairly constant average behavior. David Bohm and David Peat, Science, Order, and Creativity, p126-27.

[10] For example, one such program operates by starting with a given eight-digit number, then multiplying this number by itself, which gives a huge number, and then selecting the middle eight digits. This new eight-digit number is then cycled through the same process, and the result is a sequence of digits that appear to have no order in relation to each other.

[11] The term complex refers to the mathematical meaning, i.e. that the iterations is taking place in the complex mathematical space: $z = x + yi$

[12] In fact a phenomena's reminiscent of this, is observed in modern physics where virtual particles are constantly created out of nothing and disappear back into nothing again.

[13] David Bohm in Wholeness and the implicate order p191

[14] A book called *The intelligent universe,* expanding on the issues raised in this article is under preparation by the author.

[15] Occult Chemistry, p268

[16] More precisely the number of the ultimate "bubbles" in the physical anu is estimated to be close to 49^7, based on a progression that means that one anu on the physical level manifests as 49 anu one the astral level, and this is thought to continue until the primary level (the divine). Details can be found in [14]

[17] Recently researchers have actually discovered strains of microorganisms deep underground, which where able to survive without any light or heat source. Life can also develop in laboratories, where for instance new fetuses are created "artificially", in tests tube, for subsequent insemination.

[18] Observed by G. Hodson. Further information available at the earthspirits website at http://phopro.ie/earthspirit

[19] This account can be found in Stephen Phillips book on extrasensory perceptions of quarks.