Chapter 6

The New Science

It should be evident from the preceding chapters that people at each chakra level have characteristic psychological and cultural ways of seeing the world. These are generic paradigms at each level that work out in the practice of economics, politics, religion, morality and business. The generic paradigms should also work out in science, with each level having its own prevailing approach to what the "real world" is. By science, I mean the knowledge and theories of nature subject to methods of critical discernment, testing and attempts at causal explanation. Scientific paradigms should therefore be historically stratified by degrees of explained inclusiveness.

This chapter opens by describing the major chakra levels of science to date, as cultural paradigms. It then infers the next level to come, based on the Ajna. As the Ajna is the "command" chakra this means that its science will integrate all levels and types below the Ajna, while merging with the higher mind and its unitary knowing above the Ajna. In this next paradigm of science the higher mind becomes paramount, accessing archetypes and co-creating with higher level purposiveness. The influence of consciousness upon substance becomes a central theme, with the understanding that the higher awareness is causal to the substantial forms in spacetime.

Prigogine & Stengers note the correlation between culture and the scientific paradigm.[1] The levels of psychology work out in Wilber's objective and subjective, and individual and group quadrants of being. For a society or nation, this means that there will be a prevailing average consciousness that determines the paradigm of level. Any individual differences from the average are subject to acceptance or rejection by it.[2]

Past and Present Paradigms

An account of the "science" of the various levels, as defined in the first paragraph above, follows.

At the *Primitive level (Base chakra),* groups are at one with nature, with little differentiation between the spiritual and the material. Understanding is instinctive and magical, and knowledge is limited largely to the sensory-motor practicalities needed for immediate survival. The scientific paradigm is unconscious but democratic in the sense that everyone needs to know the basics of survival, and everyone has equal opportunity to contribute to that knowledge. It is highly particular to the local environment with great differentiation of physical descriptors (many names for kinds of snow, types of desert sand, vegetation, food, etc.). Variations in food supplies, sickness, floods and droughts are ascribed to the influences of supernatural beings of good and evil intent, or upon the work of magicians.[3] The extent of the cultural scientific capacity is limited to the perceptual-motor concrete level described by Jaques.

At the *Kinsperson level*, elitist scholarship developed as societies were essentially dual, with god-kings and priests on the one hand and the masses on the other. The move to agriculture required a greater and more precise understanding of seasonal and celestial timing,

so religion and astronomy-astrology were normally combined in early civilizations. The Chinese saw the universe as a vast orderly organism with all elements connected, so that a change in the heavens brought a change on Earth. Likewise, in India, Mesopotamia and Egypt, the heavens were the abode of the gods. The Greeks saw the cosmos as an ordered organism with teleology, and the gods were subject to rational laws. In medieval Europe, science, religion and philosophy were integrated, producing the revelation of "truth." Understanding nature involved combining religion and arcane scholarship (or magic), both largely hidden or protected from the masses.[4]

In the Kinsperson society, hereditary authority is usually validated by religion, the rigidity of which is imposed on the Kinsperson scientific paradigm. Based on ancient scholar authorities and validated by religion and the ruling elite, this paradigm accepts new knowledge only if it conforms to the ancient scholarship and supports the social structure. This limited acceptable new discoveries to technologies that worked within the existing culture, such as the horseshoe and collar, the wheelbarrow and the mechanical clock[5].

Discoveries that threatened the basis of the paradigm were suppressed. In the 13th century, Roger Bacon attempted to introduce a version of modern scientific method into the Kinsperson paradigm and was imprisoned for his "irregularities" and for criticizing dependence upon existing scholarly authority. It threatened the existing structures of society and science. In the 15th century, Leonardo da Vinci made new discoveries centuries ahead of his time but did not publish them. In the 16th century, the divine hierarchy was radically re-ordered by Copernicus. He placed the sun, not the Earth, in the center of the cosmos. This implied that "the Aristotelian hierarchy of social place, political position, and theological gradation would vanish, to be replaced by the flatness and plainness of Euclidean space."[6] His ideas therefore remained peripheral until the next century when social change made such revolutionary ordering more acceptable. In 1624 the Parlement of Paris passed a decree forbidding attacks on Aristotle, punishable by death. The Church burnt Giordano Bruno at the stake for teaching that not even the sun was the center of the universe, and Johannes Kepler protected his revolutionary discoveries in Latin prose with limited circulation.

Wherever the Kinsperson paradigm was threatened by fundamental discoveries, the biblical warning to "neither cast ye your pearls before swine, lest they trample them under their feet, and turn again and rend you" (Matt. 7:6) applied. The paradigm required deference to accepted authority, and criticism was allowed only if it was non-threatening. All causal explanations required God or the divine as their prime mover. Its methodology for major ideas was to rely upon existing authorities for premises and to deduce from them applications in the real world.

The Kinsperson needed science and religion to be a unified reflection of the Kinsperson social order, and this limited prevailing conceptions of cosmology. The neat hierarchical ordering of planets and stars, of Earth, Heaven and Hell provided by Aristotle, Ptolemy and Dante led to complicated rationalization of observed planetary motion, such as epicycles to explain their retrograde motion when seen from Earth. Improved theories and observations did not change the "scientific" paradigm until the wider cultural paradigm changed.

The examples above show correspondence to Jaques' Imaginal Concrete level with its simple structuring and derivative applications to concrete situations. Kohlberg's Interpersonal Concordance also applies at this level in the conformity to stereotyped majority behaviour.

At the *Loner level*, a breakthrough from the rigid deference to existing authority paralleled Europe's social transition from feudalism to basic capitalism. The "scientific revolution" that it marks started in the 17th century, when changing social structures made it easier for new cosmologies and for departures from scholarly authority. The work of Galileo and Kepler proved the inadequacy of the Aristotelian paradigm, and they prepared the way for independent and inductive research using observation, measurement and experimentation. Sir Isaac Newton systematized the many works of others into general theories supported by mathematical logic and replicable through rules of scientific method, and many new discoveries followed in physics, chemistry, biology and medicine.

The new scientific paradigm was mechanical and reductionist in nature and aimed to discover the regularities of the universal mechanism. New standards of critical methodology were established in the use of mathematics, accurate measurement and replicability. Causal explanations took the form of the mechanics of linear force, known as cause and effect. Often, as in the case of Sir Isaac Newton, they deferred to the ultimate cause of God. The flood of new information meant that the old institutions and a few individuals could no longer manage the whole of science. The new information spread rapidly and scientific societies were established to provide independent and critical confirmation of discoveries in accordance with the new methodologies. New discoveries were no longer hidden and were doubted if not replicated by others. All this was a massive change from the previous paradigm.

The Solar Plexus influence is seen in the worldview that, through science and technology, man can bend nature to his wishes. This level's view of science tends to be egotistical and expansionary. Jaques' Imaginal Scanning provides the limits to the societal (not individual) Solar Plexus paradigm. No longer can individuals claim to understand all knowledge or the nature of the whole, but must work on pieces of it using indices and symbolic functions such as experimentation and mathematics. Scientific method is systematized to meet the needs of discovery, and effort is made to optimize the system. Kohlberg's Law and Order orientation applies both to the methodology of science and to the induction of scientific laws and regularities. The new "authority" at this level is that of the agreed methodology as upheld by scientific societies. However, although the formal elitism of the previous paradigm had gone, historically most scientists were still a minority, independently wealthy people who could indulge their fancies.

The move to the *Loyalist* paradigm is less well known than the start of the scientific revolution. It replaced the mechanical theory of discrete and interacting bits of matter with the concept of continuous fields of energy, and it occurred in Europe with the 19th century Romantic Revolt against the simple mechanism of Newtonian science.[7] Einstein was to characterize this change as "the most profound and fruitful one that has come to physics since Newton."[8] It emphasized forces rather than things, and relationships between phenomena rather than isolated phenomena. This led to the transformations and connections between forces such as electricity, magnetism, heat and light. At the heart of this paradigm is Field Theory, in which the energy of a system is spread throughout the system.

It sees the universal cosmic organism as a network of related forces in space, in which the whole is greater than the sum of all its parts, so one must investigate the whole and not just

analyze the parts. The transformations and conservations of forces were thought to be manifestations of basic forces of attraction and repulsion.

The Heart chakra traits of relationship, attraction, union and concern for all are captured in the new paradigm. There was also a move from seeing science not as a mastery over nature, but as a benefit to humanity. The human sciences progressed with new developments in medicine and with the beginning of sociology and experimental psychology as separate disciplines. Science was further democratized through the creation of scientific and technical schools, and governments contributed to its welfare through financial grants and research institutions.

At the Loyalist level, the scientific paradigm focuses on organic interrelations and transformations that require more than a simple linear cause-and-effect, or a reduction to component parts for understanding. Field forces exist in all the dimensions of spacetime, and causality is multiple, interactive and wholist. The complexity of scientific method corresponds to the Conceptual Modeling of Jaques where a change in the quality of abstraction takes place. The Romantic scientists such as Orsted, Faraday, Kelvin and Maxwell started with the Newtonian paradigm and created a new and improved one. Kohlberg's Social Contract is relevant in the "whole society" agreement about the value of science and its worthiness of support. The relativism of personal views is subject to the consensus of the scientific community as expressed through the scientific societies and the more democratic public scrutiny of publications.

We would expect that the *Achiever* level would see a great and divergent increase in scientific discovery, and I put its inception as the early 20th century in Europe and the USA. Scientific productivity burgeoned in the 20th century, in both diversity and specialist knowledge. The major paradigm break was created by Max Planck's Quantum Theory and Albert Einstein's Special Theory of Relativity. Einstein went beyond the energy transformation concept of the Romantic scientists to include matter in his famous equation $E=mc^2$. He and Planck extended the relativities of the Romantics' organism concept to include the relations between observers and events. Time and space were no longer fixed certainties. Werner Heisenberg introduced uncertainty as the basic reality of the location of sub-atomic particles. These discoveries further reduced Newtonian physics to a subsystem within a broader conception of physics.

Science increased its diversity not just in subject matter but in methodologies within disciplines. The Achiever level fosters a great range of potential applications at different levels of abstraction, the highest abstraction of which is theorizing using mathematical models that take understanding beyond common sense and concrete experimentation. Derivations from abstract theories are "stepped down" to more concrete manipulations and the results are then abstracted again to refine the theories. Progress takes the form of more comprehensive and elegant "universal" theories, often based on already abstracted information in the form of sub-theories and concepts. Uncertainties and probabilities replace the mathematical determinism of earlier science. Quantum mechanics concluded that the only "reality" is that of measurement by an observer.

The Achiever level scientific paradigm is far more complex than previous ones but incorporates the Solar Plexus and Heart paradigms as subsystems. Its regularities are more in the form of uncertainties and probabilities, rather than comforting concrete realities. Absolute

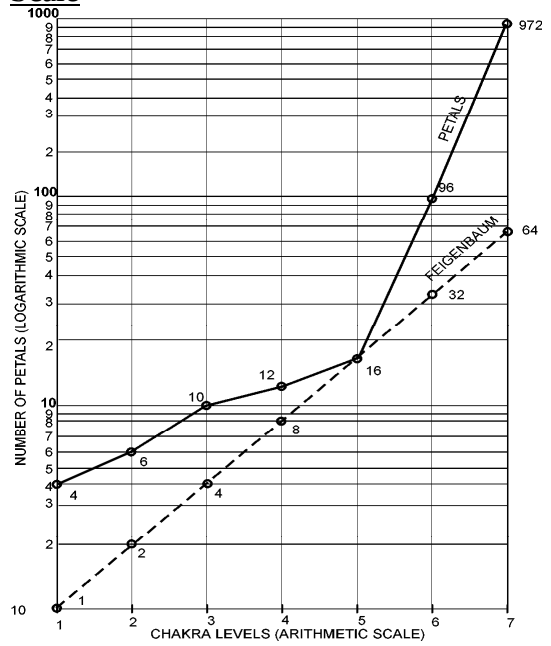
space and time have disappeared, except within confined subsystems. Laws have become relative, and causal explanation all but abandoned at the frontiers of knowledge incorporating the highest levels of abstraction, such as sub-atomic physics. Critical assessment has become quite tortuous. The role of observer (be it theorist, experimenter or critic) as well as observed (events, theories and scientific beliefs) must be accounted for. And the subject matter is no less tortuous to understand. Scientific authority has splintered into the many sub-disciplines claiming specialist expertise, and new concepts of methodology and logic challenge the old.

This great diversity of independent scientific creativity clearly reflects the Throat chakra level. The level of abstraction at significant distance from concrete application corresponds to Jaques' Intuitive Theory level. Science enters the counter-intuitive realms, going beyond the whollist expectations of field theory. The quantum jump out of spacetime appears to be idiosyncratic to its conceptualiser, yet extends the comprehensiveness and universality of science. Superstrings, black holes, the Gaia hypothesis that the Earth is a living organism, and high-level ESP are other examples that correspond to both Jacques and to Kohlberg's Universal-ethical (personal) level in its self-chosen principles seeking logical comprehensiveness, universality and consistency.

The Next Paradigm

In predicting the next scientific paradigm at the Ajna, *Involver* level of capacity, we need to be aware that the evolutionary process is cross-catalytic for humanity and hence super-exponential.[9] This means that developments in one area of life influence other areas, to produce a "super-compound interest" rate of increase in capacity. It becomes transparent at the Ajna level because it is the "takeoff" level in the curve of chakra capacity. Figure 11 shows that when plotted logarithmically, the major break in number of chakra petals and therefore capacity appears between Throat and Ajna, i.e. levels 5 and 6 (even if Ajna petal numbers are halved to account for the yin-yang duality).[10] This contrasts to the straight line of a geometric series (Feigenbaum), when plotted on a logarithmic scale.

Figure 11. Chakra Petals – Logarithmic Scale



The Ajna "takeoff" in consciousness significantly increases awareness of self and others, and increases the rate of self-transformation. This has particular implications for increasing our scientific understanding of the world. The Ajna integrates all chakras below it, and therefore their capacities and paradigms, prior to its integration with the Crown. Significantly, consciousness also draws closer to the spiritual, which is unbound by spacetime. The realms of the higher mind enable the direct perception of universal truth, beyond the dimensions even of quantum mechanics, black holes, relativity and superstrings. This requires a radical expansion of theory and of methods of validation. For this reason, the last three qualities listed below should be included in a new scientific consciousness at the Ajna level.

We can predict that the next scientific paradigm (in the first 30 years of the 21st century), following the analysis of Ajna awareness in earlier chapters, will include the qualities of:

1. Integration,
2. Convergence,
3. Globalism,
4. Information mastery,
5. Meta-analysis,
6. Self-actualization,
7. Spiritual vision,
8. Co-creation.

All these listed qualities represent a decrease in the entropy of the scientific process and the scientific paradigm. They lead to a new order of comprehension. The qualities are described below.

1. Integration

A primary integration at this level is of *form and quality*, or structure and values. Science is no longer value-free, because it is understood that all effort contributes to either the advancement or the regression of civilization and more generally of all life on Earth. Activities are guided by the higher intuition into areas of mutual benefit for humanity and global life.

Much of science and philosophy has previously been concerned with establishing a logical *structure* of regularities in order to make sense of the world. The significance of *values* and intuition in this operation has been overlooked, minimized, or not dealt with to the same degree as logical structure. This is largely because those attracted to science and philosophy tend to be on the odd-numbered rays (3, 5, 7) that deal primarily with the "hard" yang principles of form and structure. Those on the even-numbered rays (2, 4, 6) are more attracted to the "soft" yin principles of quality and value.[11] In scientific pursuits, the latter would gravitate to the social sciences and concerns about the morality and practical human benefits of science. In the new science, these yin and yang qualities are equal and complementary, and are vital for a balanced, wholist understanding.

This is a transcending of the great independence and diversity that reached its height at the Throat level. At that level, the yin and the yang aspects of science, people, society and nature were studied separately so as to delve into their essence. Now there is a focus on the synthesis of structures, is guided by an analysis and synthesis of values. This applies to the conscious integration of Wilber's four quadrants in the ethical application of science to people, society and the planet.

Logic will be balanced by true intuition, as it always has in great scientists. There will be a deep understanding of the integrative nature of that intuition. The importance of values and intuition in forming and accepting systems of logic will be studied (e.g. why do we accept mathematical logic?). Logical analysis of the patterning of intuition will follow.

The physical sciences, their products and their direction will be joined to the human sciences through exchange of data, methodologies, and ethical purpose. They have joint responsibilities for their products, because of their impact on the integrity of life on the planet. We see this in the integration of Earth life systems science with economics in the *Stern Review on the Economics of Climate Change*.[12] The Review's relating of the physical and economic analyses provides a far more comprehensive understanding of probable scenarios of potential global disaster than would separate analyses. It makes clear the profound global interdependence of physical, biological, economic, social and political systems and their combined limitations. We are all part of one Earth system that requires whole management. Stern's analysis shows that no individual, country or corporation can now ethically go their own way in disregard of their dependent role in the whole. All systems have become global and all participants affect all others for better or worse.

Consequently the "hard-headed" yang scientists will incorporate more love-wisdom into their perceptions, directions and programs. The "soft-headed" yin scientists will incorporate more logical rigor into theirs. The hard and the soft are integrating rapidly, as in "fuzzy logic,"[13] the physical mapping of states of consciousness, and growing concerns about the ethics of science and of those who control it.

The paradigm will also align to a *sense of life purpose and global systems planning*. The philosophers and the spiritually awakened (especially if the 1st Ray is strong) will help focus the growing incorporation of scientific and other systems into a commonly accepted purpose of life. However conceived, it will discern between the higher purposes and those which are valid yet lesser. A higher purpose could provide benefit to the integrated whole that would safely speed human and global evolution, facilitating greater general enlightenment, love, peace and beauty. This "speed" would be a deeper understanding of the nature of spiritual cause and effect, of whollist relationships within the unity, and consequent value and the release of joy. Lesser valid purposes include commercial applications of science to raise income, increase energy efficiency, and improve human health, creativity and way of life.

A high purpose is to develop co-creator ability guided by global ethics. Co-creation is between the higher and lower selves of all people, and through the higher self, attunement to higher realms will occur. Co-creation becomes the intelligent and caring management of the evolution of planet Earth in all of its seven kingdoms (listed in Table 1).

A third form of integration is likely to be that of a *range of theories* to their universal essentials. Jaques' hierarchical levels of abstraction can be matched in science with the increasing levels of abstraction of theory and formulae that encompass wider and deeper aspects of nature. A hierarchical structure of integration will eventuate, with perhaps a unified theory of the four fundamental physical forces (gravity, electro-magnetism, strong and weak nuclear forces) integrated into a broader theory of relativity and quantum psychology that includes the fundamental forces of thought and feeling.[14]

Managing the super-exponential increase of information, of scientific applications and their interaction will require urgent integration of theories. The abstraction of much of this information to its essential structure and value will increase effective co-creation and the ability to exert beneficial control over the future of the whole planetary system. For example, our understanding of how to create a sustainable and creative civilization as a global value requires an understanding of human psychology and culture, and its development in stages.

How this works out in economics and politics etc. is a significant part of global ecology, which also includes influences from within the solar system and beyond.[15] A clear understanding of the interaction of the various parts of global ecology with particular attention to human thoughts and desires is needed to manage both survival and spiritual florescence. This will involve all aspects of human life, and all kingdoms of nature, because all are part of the planet's one life system.

Information is knowledge that takes shape, "in-form". The body of knowledge is universal, as is the form in its various frequencies. Archetypes are the essential thoughts of truth and beauty that can be made manifest. We progressively approximate these in our understanding and our creations. The idea of Earth as a whole living system is one of these, and our identification of crucial Earth components that support its life is essential to our influence on the continuity of that life. As we identify the essential systems of the Earth's body, so we identify the essential systems of Earth information. This requires a comprehensiveness and succinctness that must integrate the various ecological, physical, psychological, economic and political theories into one unified paradigm.

2. Convergence

Whereas integration produces a coherent hierarchy or network of discrete subsystems consistent in logic and values, convergence produces a change in the understanding of each subsystem, realising certain similarities through cross-fertilization. Borrowing among methods of science, ethics, philosophy, religion, politics and economics eventually leads to a convergence of their means of understanding.[16] The mechanism for this is the *resolution of ambiguity* at high levels of abstraction rather than increasing sameness.

Jaques, and Lynch & Kordis have noted that the greater the capacity of individuals, the greater their tolerance of ambiguity. People with high levels of capability take it as given that there are many unknowns in the world, but that we must work with them. The unknowns, in fact, produce a creative tension for the intuitive resolution of ambiguities, which may lead to convergence or integration.[17] The Ajna level is one of great capacity to resolve ambiguities to reveal a common basis for understanding. The Throat level scientific paradigm typifies the analytic search for differences, and the practice of logical discernment or discrimination. This is a subsystem of the Ajna level scientific paradigm, which will increasingly focus on the synthesis of similarities, using intuition and logic combined explicitly to delineate possible modes of convergence, alignment and value.[18] To explain the basis of convergence an extended example follows.

We can expect the theories and methods of mathematics, music (or sound), medicine and aesthetics to converge because they have a fundamental basis in *frequency*, which:

- Can be notated and analyzed mathematically,
- Is the physical essence of sound,
- Forms a major consideration in aesthetics as harmonic resonance, and
- Has been shown to directly affect the health of people.

Number and frequency are basic to all things in spacetime for, "In the beginning was the Word" (John, 1:1), meaning that the creation of matter with form in spacetime came about through energy with frequency.[19] All things have their fundamental frequency or "signature

sound" essential to their coherence. Consequently, some resonant frequencies will either enhance or dampen the signature sounds, and others will be relatively inconsequential[20] to its maintenance or development. Where the signature sound is that of a person, these resonant frequencies are relevant to aesthetics, value, health and medicine.

Because of the hierarchy of similarity of biological species, one would expect a hierarchy of frequencies to benefit each of the various levels. Since thoughts and emotions have their own frequencies, transmitted as energy to influence others, each individual consists of a symphony of frequencies, but with a dominant note. Likewise, a coherent group would have its dominant note.

The research of Sharry Edwards[21] has demonstrated that individuals do indeed have their signature sound, with missing notes indicating ill health, and that providing the missing notes as sounds causes dramatic health improvements. An extraordinarily significant finding of her research was that the lower the octave of the required frequency, the more effective it was. At the very low octaves (or harmonics) corresponding to the alpha, delta and theta brain wave levels, some illnesses thought to be incurable such as emphysema were reversed and cured.[22]

Among other things, she determined the sound frequency of various chemical elements (corresponding to the scientific view of atoms as harmonic oscillators) and provided the frequency as sound for the body where the element was missing or low. This has a similar effect to providing the chemical as a physical substance. She also found that harmonics of the diatonic musical scale, using ratios of the distance of the planets from the sun, correspond to brain-wave patterns, and that signature sounds have astrological correspondences. Smith & Best (1989) have specified the physics of some of these processes, lifting the electro-magnetic and frequency basis of the human being out of the arcane and into the clear precision of field theory science.

Edwards' tenets for a Unifying Theory for Energy Medicine based upon her own research are that:

1. Each individual has a distinctive signature sound. This scale is based on tempered diatonic musical ratios (common music by Western standards);
2. Signature sounds correspond to physiological and psychological status;
3. Sounds missing from the voice correspond to signature sounds;
4. Vocally missing tones correspond to physiological and psychological status;
5. Signature sounds and vocally missing tones correspond to traditionally assigned notes for astrology. A person's sound matches 40% of the time with the musical note assigned to them by traditional astrology; 40% of the time, the sound matches six signs away from the assigned musical note (i.e., directly opposite on the zodiac). 20% show no match;
6. The diatonic musical scale was designed using the ratios of the planets at their farthest distance from the sun;
7. The harmonics of the diatonic tempered musical scale, in frequencies below normal hearing range, correspond to brain wave cluster patterns;
8. Brain hemispheric dominance plays an important part in determining what tone formulation to use in support of Signature Sound Therapy;
9. Indicators of physical distress, present and past, and emotional states can be categorized from missing vocal notes or octaves;
10. Providing the missing frequencies allows the body to repair itself;

11. A musical scale designated from the atomic weights of elements found in the human body closely correlates to the already established diatonic scale designed by Kepler;
12. A musical scale using atomic weights of elements as a foundation emulates brain wave clusters at lower octaves.

Edwards' research indicates firstly a physical and mathematical basis for the effects of music and sound on living and other entities. More generally, it offers the basis for a theory of harmonic and resonant relations between all that exists in spacetime. This harmony has a "sound" mathematical basis as well as an intuitive or aesthetic basis that will be a prime mechanism of convergence under the new scientific paradigm.

McClain has examined some aspects of the number/frequency/music in relation to values and creativity as they exist in wisdom texts such as the *Rig Veda*, the *Bible*, and the *Egyptian Book of the Dead* among others. He emphasizes the role of musical tuning theory in deriving order from tonal chaos, noting the mathematical impossibility of a "perfect" system, drawing an analogy with both quantum logic and Kurt Gödel's analysis for mathematics. McClain accepts the ancient beliefs that music is the sovereign of all understanding, and proceeds to demonstrate its mathematical coding in a range of holy teachings from many cultures. He concludes that:

> "Harmonical analysis exploits the ancient world's fascination with number and with those correlations between tone and number which we call acoustical theory, but which a former age of innocence considered to be cosmology. By studying the most ancient forms of numerology in a tonal context, we revive a rationality that was lost. All numbers and all graphic relations in the mythologies of ancient cultures must henceforth be taken as clues to cosmological visions embodying possibly very great mathematical precision and signifying an aesthetic balance between sets of related concerns. The mathematical allegories unveiled here were the products of minds like our own, convinced of the absolute unity of all things visible, tangible, audible, and thinkable, and laying the foundations of a future science by directing attention to what endures."[23]

McClain shows that the quantities listed in these texts are of fundamental mathematical/musical value and meaning, rather than being arbitrary and meaningless. Their fundamental nature is indicated not only by their recurrence across times and cultures, but by their potential to facilitate rediscovery and illumination of keys to the universe of manifest things. His analysis indicates the musical importance of the sacred number 7, and that the old teachings had "a rigorous methodology in using numbers, which function by analogy as archetypes of more general truth."[24]

His musical analysis of the Book of Revelation reveals many numbers that appear to be pointless if read literally, but that actually have essential musical meaning.[25] For example, the select 144,000 is a choir of male celibates in the original Greek text, who sing a new song (Rev 14:3-4). Male numbers are odd and female numbers are even. McClain constructed a geometric octave matrix based on odd-numbered prime factors of 144,000 and used this key to unlock the musical symbolism of the 24 elders, the new song, the angels with trumpets, the sins of the world, the new Jerusalem, etc. The musical number theory used to derive this analysis draws on Vedic and Greek theories, indicating continuity with the Christian tradition.

The ancient serpent called Satan (Rev 12:9) has a musical value of 729:512, as does the Vedic dragon, which is the "diabolus in musica" of medieval music, so-called because it was the worst form of dissonance. McClain suggests that, as 729 is 3^6, then 666 is figuratively 3^6 "for those who know how to reckon." He also links the various numbers to the kundalini serpent and to the universal myth of the millstone thrown into the sea (Rev 18:21-2), and draws upon a Chassidic interpretation of Genesis that musically links the six days of creation to the revelation.

One of his proposals, similar in concept to Sharry Edwards' linking of the musical scale to astrology and health, is the significance of the number 1260, which appears five times in the Book of Revelation in various forms, e.g., as 42 months (30x42=1260 days) or three and a half years. This number is the limit for a certain combination of smallest integers, and also the octave 630:1260, which in Biblical imagery "opens the womb" where the "Savior must be born" in the demonstration of mathematical harmonics.[26] McClain concludes that in Revelation, Saint John was "illustrating an inspired vision according to the most conventional method of his time - by musical analogy," and believes that encoded there is a splendor we have never quite understood.[27]

Aesthetics becomes a part of these considerations of frequency because everything has a signature sound including thoughts and feelings. Resonant and harmonic relations between sounds provide a basis for quality, and hence for aesthetic conceptions of good and bad. There is an evolutionary repulsion from that which produces dissonance and pain, and an attraction to that which produces consonance and pleasure. These evolve and become refined with progress, leading eventually to psychic links with the higher self as we seek harmony with its vibration.

Clearly, tastes vary widely, which can be mostly accounted for by variations in chakra levels and rays. To this, we must add the various other influences of culture and society. Whatever these variations, aesthetic preference will essentially rest on the consonance between one's own vibration and that of the environment, whether physical, social or intellectual, etc., and whether general or specific in focus. The resonant relationship is amenable to a rigorous mathematical analysis that, in theory at least, would also account for aesthetic taste and how individual capacity develops. This "taste" is the sensitivity to more refined forms of vibration that uplift one's own vibration and stimulate further evolution. There is a "vertical" orientation of octave frequency and a "horizontal" orientation of colour frequency of one's own rays. Convergence based on frequencies not only links apparently diverse fields, but converges "vertically" to the higher unity consciousness.

Have you ever been uplifted by inspiring music? Some will move you to tears of joy. Then there is the dance music that sets the feet tapping and the hips swiveling. There may be loud dissonance that moves you to tears also. We know what we like and it literally moves us. We can say the same about art, theatre, dance, homes, gardens, and styles of living as we respond to their orchestras of innate signature sounds. This aesthetic resonance has a physical as well as a psychological impact on us. We know that music can make plants and animals very sick or very healthy depending on its resonance with them. The traditional music of different cultures is "in tune" with their signature sounds. If we dislike some music then we will most probably be ill at ease in its culture, whether it is modern rock culture or centuries-old ethnic dance. This indicates not just linkage by frequencies but a two-way influence. As

we develop, this gradually changes from the outer material to the inner psychological influence.

Theories of aesthetics propose that it involves a synthesis between the intellect and the sensory feeling, which as previously proposed for the Ajna level is between the principles of the 3rd and 2nd Rays. This unites structure and value. If aesthetics are based on resonant frequency relations, then they are a part of the *intuition*, whose perception of previously unsuspected relationship may occur through "attunement" to the reality. This reality will often have an essence that is elegant or beautiful, as seen in certain laws of nature and mathematical equations. It requires relevant information already in the mind as the basis for the connection to be made. The combined quality of this information, of the mind's capacity, and of the ability to recognize attunement, indicates the quality of the intuition. Aesthetics, intuition and frequency are related, and they are capable of mathematical analysis and synthesis, creating convergence.

An example of seeking the elegant essence, of intuition attuning aesthetically to essential principles, is the convergence (in addition to integration) of psychology and ecology to explain the Ecolonomic level of economic behaviour. The principles of self-actualisation at the Ajna level are integration of the self, as all levels of the personality, and as yin and yang, and acceptance of inspiration from the Crown level of awareness. The principles of global ecology also integrate the many kingdoms of nature, and forms and human consciousness, and acknowledge the need for inspired human guidance. The ecological self-actualisation of planet Earth is the harmonious alignment of all kingdoms of Earth, including those higher than the human, resonantly in form and in awareness, and open to divine purpose.

The archetype of truth, beauty and power for all life on Earth is literally glorious and of uplifting radiant vibration. It is aesthetically attractive, and becomes more closely approximated as the idea is manifest repeatedly. To achieve it, our understanding of the psychology of integration, of the ecology creating planetary abundance, and the economics controlled by enlightened human choice, must converge. They merge into the same principles and are seen as different aspects of the same archetype, a result of psychological convergence at the Ajna. Convergence is the right-brain's contribution of attunement, complementing the left-brain's integration of theories. The two hemispheres become one and expand understanding. The aesthetics of this intuition lead us to the beauty of the archetype, seen as a flower of the divine in all, lighted knowledge "in-form". This convergence is spiritual self-actualisation changing our comprehension of all disciplines and all life.

The resolution of ambiguity at high levels of abstraction involves *resonance* relationships, based on frequency harmonics working out as aesthetics, intuition, perception and logical discernment. Sharry Edwards identifies some of these resonances, ranging from constellations to chemical atoms. These resonant relations between all things appear to be the key to archetypal laws of the universe. The new paradigm will include these matters from internal and outer perspectives. Logical method was developed intrinsically by human thought and enhanced externally by machine applications such as the computer and scientific instrumentation. The intuition will also be developed intrinsically, and enhanced extrinsically, quantifying the resonance relationship through human brainwave analysis and biofeedback.

The Newtonian scientific paradigm established the concrete mind's logical method. The explicitly intuitive method in its advanced form, as opposed to the lower gut instinct, has yet

to be established in the new paradigm. When established, it will, along with logical analysis of extrinsic factors, help to expand the logical method to encompass quantum non-local and para-psychological realities.[28] The mutual interplay between the concrete mind logic and higher mind intuition will create a new, balanced, qualitative logic for the new science. Already in the field of mathematics, we find some reconciliation and convergence between the great divisions of intuistic logic and classical logic. Scientists are also investigating human cognition and are suggesting that it does not follow Newtonian mechanics but may be more quantum mechanical in operation.[29] The resonance induced by a hierarchy of archetypal form will contribute to the convergence of understanding in many areas.

The notorious issue of different *perceptions of reality* can be seen as the differences in individual attunements to that reality. An important aspect of this is that signature sounds are also energy radiations that interact with each other. We know that at critical frequencies and with appropriate power, these interactions can either destroy or enhance biological or mineral forms. This is important where we assume that our observations or manifestations for scientific purposes should be neutral. Where a form is strongly coherent and can resist small variations produced by the observer's own energies and frequencies (or where the frequencies are non-harmonic and inconsequential), we may be justified in expecting neutrality. However, where a form is weakly coherent and strongly resonant to a harmonic of the observer's own signature sound, then the observer might easily but unwittingly sway the form.[30] This may explain psychic influence of others, either emotionally or mentally, and could possibly influence measurements in psychology and quantum mechanics.

We are electro-magnetic beings and our own fields of energies constantly interact with our environment.[31] Quantum physics has shown how the observer influences the observed, and recent developments in computer science reveal interactions between human energy fields and sensitive electrical systems. Control of computers by human neural signals is now a reality, and research proceeds towards direct thought control.[32] A small stretch of the imagination can envision extending the causal interaction between neural signals and machines to interaction between neural signals and other neural networks. In fact, the latter has been demonstrated experimentally.[33] The experimental evidence for psychokinesis confirms that we all have the potential to influence each other, which adds the aspect of consciousness to the butterfly effect in chaos theory, where a minor change in one location can produce a major change elsewhere.

The implications for the perception of reality are that:

1. Different individuals will attune and therefore perceive differently,
2. In some situations, different individuals will directly affect that reality without realizing it, causing a convergence towards their own frequency.[34]

In the new paradigm, scientific methodology will incorporate these aspects.

The general mechanisms of convergence and integration, such as *general systems development* and *dissipative structures* will form an integral part of the new paradigm. They will incorporate a wide understanding of Thomas Kuhn's theory of the paradigm shift, which is an essential part of the current paradigm.[35] The paradigm shift will indicate the bounds of a system (or level of chakra psychology capacity), and clarify the progress of system unfoldment within the bounds. This depends on the in-built limits to growth within system

bounds, and the bifurcation at these limits to move to a higher order of limits (a new level) or collapse to a lower order.[36] The general mechanism can be applied fractally, to a wide range of phenomena, and to science in general.

3. Globalism

Peter Russell has drawn our attention to the cross-catalytic nature of scientific development. It globally influences geobiology, human ecology and scientific autocatalysis, affecting our very approach to science.[37] He proposes that humanity is becoming the living brain of the planet. James Lovelock has provided a convincing analysis of living systems to suggest that planet Earth is a whole living organism.[38] Both views are supported by older wisdoms that regard the Earth, and indeed the universe, as a living, conscious organism. They contain hierarchies or fractals of consciousness that evolve to apotheosis. Of course, this is impossible to "prove" under the present scientific paradigm, and a challenge to the interested scientist is to assess how science could develop to a stage where such a hypothesis might be tested.

The definition of biophysical systems properties of life and their matching with Earth and other planets is one useful approach, limited only by our lack of a higher understanding of the nature of life and consciousness. But then, that lack of complete understanding is common to science, and hence its progress and paradigm change. A more difficult task would be to assess forms of consciousness and natures of living systems that are possibly beyond our capacity to understand. In such instances, we would need to use analogy and symbolism to even approximate an understanding at a lower harmonic of reality. (This is taken up further below under "co-creation.")

The concept of a global living system is crucial to the global management of Earth for its survival and evolution. It is important to science because of the cross-catalytic effects of science and the speeding of new products that affect the global life system. We need to specify values and reference points to assess the impact of new products and methods upon the viability of living systems. The degradation of parts of Earth's ecosystem is now reaching dangerous levels, in particular with chemical poisoning and climate change. The most fundamental living system according to Lovelock's definition is that which supports all biological life on Earth. This must be our most basic reference point—a Base and Sacral chakra value of survival—while other chakras will provide other fundamental values for human life, including those of relationship and wholeness. When we better understand global life systems and their interaction, including human systems, it will stimulate new avenues of research and new methods based on wholeness.

The open nature of the living Earth system draws attention to the cycling of information and energy into and out of the Earth system, that is, to our role in the solar system and the rest of the universe. The new paradigm will recognize the open system's cosmic influence on energy flows, ecology, psychology and consciousness. For example, we already have good scientific information on the influence of the sun, of sun-moon alignments, and of solar flares on human psychology, physiology and physical behaviour, and this type of information will be rapidly extended.[39] Eventually we will make progress in recognizing forms of consciousness higher than our own, which will be the Copernican revolution of psychology. We will begin to see the solar system as a living, conscious entity in which information and consciousness are circulated and available to different orders of life within it.

The 17th century scientific revolution managed to overcome the immense objections to the "round Earth" and "sun-centric" theories. I believe that a revised form of it will also overcome objections to the idea that humanity is the pinnacle of life and consciousness in this vast universe, and even on Earth. Ask a reductionist, "If consciousness is inherent in energy/matter, then what limits can we place on its emergence in spacetime, other than those of our own prejudice? "[40] Can we conceive of life systems that are not clones of our own? Here are very real issues that will contribute to the new science, i.e., the search for the principles of life and wholeness that go beyond sameness, and in which consciousness plays a crucial role.

4. Information Mastery

In his concept of humanity as the global brain, Russell saw humanity as approximating two of the three requirements for the complexity that characterizes the human brain.[41] Humanity (and the brain) has *diversity* expressed as critical mass, and defined as within an order of 10 to the ten billionth power (i.e., 10^{10}). In one case, this is the number of brain cells and, in the other, the population of Earth, now over 6 billion and projected to stabilize at 9 billion in 2070. Humanity and the brain also have *connectivity*, i.e., the incredible linking of each of the billions of brain cells with between 2,000 and 200,000 others. In the case of humanity, this connectivity is global radio, television, telecommunications and the Internet. Concerning the third factor, the human brain's structure and contents have significant *organization*, but the global brain comprising humanity is still developing significant organization.[42]

The organization of structure and content of the global brain takes place both extrinsically and intrinsically. *Extrinsically*, it is the ordering of the "wiring" and the specialization of parts in information processing throughout the globe, such as communication satellites and the Internet. The super-exponential increase in information processing emphasizes the need for techniques to compress, identify essence, search and index, and more efficiently disseminate information.

The analogy with the human brain is that the diversity and critical mass of the brain cells are established in the womb within six weeks of conception, and that the connectivity of the cells is largely completed within the first two years of life,[43] although the organization of content increases potentially throughout life, in a series of stages.

If we compare this living information system to a dissipative structure, we would expect that the accelerating increase in information would push the system either to a new order of capacity or to collapse. This is similar to the developing human brain when it shifts from one chakra level to another, moving to a new and greater level of capacity, with a shift in organization. A new synergy is unfolding between human development and a new order of global information processing that will facilitate the shift to a new culture and scientific paradigm.

The *intrinsic* organization will see increased information mastery through the conscious development of the intuition, the techniques of raising consciousness, and the psycho-

physical engineering of ability. International statistical evidence points to a steady rise in intelligence[44], and this is complemented by an increasingly explicit use of the intuition. Currently, however, evidence for the latter is largely anecdotal and circumstantial (in the form of scientific acknowledgement and of self-development activities). The rapid increase in and recognition of such activities will stimulate a measurable increase in testable intuitive information.

Further, the practice of techniques of intuition will gradually increase "inner" individual access to universal knowledge, to the "raincloud of knowable things". These universal knowable things will illumine existing constructs and theories, leading to a greater comprehension, integration, and convergence of the depth and diversity of knowledge. Awareness of the higher kingdoms and of the consciousness of the lower kingdoms will become normal. This will speed the integration of new ideas and broader concepts into a widely accepted understanding required for global survival.

Intrinsic development of individual consciousness contributes, especially where there is morphogenetic resonance, to the global mind. Oldfield and Coghill believe that "brain waves" organize cellular activity for individuals, and this can be extrapolated to the global brain. As they put it: "Ultimately our hypothesis of morphogenetic radiation would predict that cerebral 'brain waves' of various kinds act as complex signals controlling cellular activity, without recourse to the habitual neural pathways of the central and peripheral nervous systems, which are solely concerned with events at a supra-cellular level. Frankly, neural pathways and their mechanisms are far too slow to handle the co-ordination of the millions of cells which are dying, growing or perhaps changing in our bodies all the time."[45] More recent research by Bruce Lipton shows that electromagnetic and other energies, including those of thoughts and feelings, are much more effective and vastly quicker in influencing cellular activity and activating DNA than are physical mechanisms.[46]

The relation of a global mind to a global brain can be hypothesized as the relations between spirit, soul and personality as follows. The brain is the physical machine and as such is part of the personality. Like the radio it can receive and attune to electromagnetic frequencies, producing a modulated output. The thought field is a form of the electromagnetic field of the soul, created by motion in the polarity between spirit and matter. The quantum jumps between spacetime and beyond are the influence of spirit as higher mind modulating the thought fields. This is the application of three paradigms of science to the mind-brain issue, namely the Newtonian (brain mechanism), Field Theory (thought electromagnetism), and Quantum (non-local transference of thought energy). This is taken further under Co-Creation below and in chapter 9, in outlining a model of the quantum mind.

Both intelligence and intuition can be considered as types of logic that increase the efficiency of information processing and mastery, analogous to how digital and analog computers work at a basic level:

- *Intuition* seems to operate on analog pattern recognition based on the harmonic resonance of forms in energy fields (physical, emotional, and conceptual), and so can be very fast and direct,
- *Intelligence* operates on digital pattern recognition, based on understanding the structure of forms and their matching.

It is as if intuition works by using the signature sound of a pattern, such as for fractal geometry, whereas intelligence works by knowing the formula.

The value of aware, deep intuition is that it can speed pattern recognition, information processing and deep understanding, and as such will become explicitly more important in the new science.[47]

5. Meta-analysis

The new paradigm will see a significant increase in several kinds of higher-order analyses. The current statistical technique of meta-analysis will continue to synthesize a large number of studies and their results to obtain an overall conclusion.[48] However, other forms of meta-analysis will become prominent.

A further form, of *intuitional meta-analysis* derives from the quantum mind model, which is presented in the "co-creation" section below. There is a question whether classical logic can manage quantum "discarnate" states. For example, can matter exist as both particle and wave at the same time, unmodified by observer consciousness? Can two particles have discarnate unitary entanglement yet be separate? The apparent confusion of classical logic on these matters leads to the confusion of the scientist about causality. Issues of discarnate timeless states and their relation to spacetime add to the confusion. A form of logic that incorporates these apparent inconsistencies is needed.[49] Extension of intuistic and multi-value logic that acknowledges the limitations of true/false dichotomies and mathematical proofs (as per Gödel) could link quantum discarnate formlessness with collapsed incarnate things.

The quantum mind model partitions mind into two aspects: that *within* spacetime and that *beyond* spacetime. The higher mind *outside* of spacetime is the "causal" mind that precipitates the reality of spacetime forms. The lower mind *within* manipulates the forms and derives relations between them. In the different levels of abstraction and concreteness, the more we move to abstraction, the more we grasp causality. The more we move to the concrete, the more we deal with effects. This form of meta-analysis combines the higher and the lower mind analyses.

As Siu puts it: [50]

> "Einstein envisions two components in scientific knowledge. One is immediately apprehended and empirically observed and the other is imagined or theoretically given. These two are joined by correlation. The single experiences are correlated with the theoretical structure. They are not tied together by logical relation or extensive abstraction. Thus the "blue" as observed color is correlated with the "blue" as wavelength. The axiomatic nature of science must therefore be freely invented in Einstein's method of tentative deduction. As Northrop admirably points out, there are important implications to this way of thinking. It suggests that we cannot validly derive theoretical descriptions from empirical assertions. This would mean that knowledge gained from *a priori* theoretical constructs provides something different from experimental observations. Tentative deduction provides knowledge of reality itself. This assumption enkindles the hope that truth itself can be approached through the scientific method."

Abstract and theoretical ideas derive from the higher (causal) mind outside of spacetime. They can be contacted through meditation (of which intense scientific concentration is one form), intuition, and inspiration, and their effects deduced in spacetime. It may also be possible to induce general causative principles from material effects, but which method is the quicker? Or the more reliable? Whatever level of abstraction-concreteness one is able to tune into provides the answers. The deductive and inductive methods combine for best effect. We will see conscious attempts to tune to the higher mind to quickly resolve existing problems. Its primacy in containing causal truth will be recognized. Given the variations in possible attunements, the lower mind will be used to test and apply the derived higher truth in material relations. This will work where the derived truth is subject to empirical testing through the lower mind mechanisms. However, the lower mind cannot verify the intrinsic truth of the higher mind where a harmonic connection to the lower is absent.

This will become an accepted practical application of the quantum-mind model to scientific discovery. High attunement speeds comprehension, providing that sufficient basic information is in the concrete mind. Already applications such as intuitive medical diagnosis are starting to appear, using specific techniques of higher mental attunement to perceive underlying or non-apparent problems. These are then subject to physical or psychological confirmation. This method enables discovery of previously unsuspected medical conditions and their treatment. On one occasion witnessed by the author, the method psychically found war shrapnel in the body of a patient, later verified by x-ray.

Another form, of *integrative meta-analysis* generalizes broad structural principles across disciplines that are applicable to all areas of life, such as the theories of general systems and dissipative structures. This type of meta-analysis involves identifying essential properties of many relatively whole system structures (called holons[51]) to synthesise a common essence. With awareness of the octaves of frequency of substance, this essence will be seen to exist in the seven major levels (and their fractals) including beyond spacetime. At issue is that if the rich complexity of all life can be abstracted to a few systemic principles, what does this mean? Universal principles, if with a hierarchy of pattern abstraction, sounds like the oneness of life, a oneness of similar unfoldment to similar cyclic conclusions, that includes integration with larger systems and wholes. Then, if life is a fractal formula, what is its consciousness counterpart? We will discover the scientific approximation of a universal archetype symbolized as the tree of life, and trace the degrees of consciousness of the tree back to its source.

The “trees of life” that develop from small seeds can be seen as the fractal evolution of general systems in the geography of settlements, the human body structure, plants, the atom, planet and galaxy. Life has been described as an open system that is self-organising. It takes energy from its environment to create increasing order and complexity, and to maintain coherent form and dynamics. While there may be a number of ways to detail this, James Miller[52] has specified 19 critical subsystems plus homeostasis (maintenance of internal coherence). Russell shows how these apply to a person, a society (or nation), and to Earth’s biosphere, the latter supporting Lovelock’s Gaia hypothesis. However, when examined in many dimensions the tree, or general system, includes consciousness and spirit.

According to Bertalanffy a general system has:

- Relative wholeness – so that a change in the whole affects a part, and *vice versa*;

- Differentiation – increasing organisation of specialisation plus centralisation, with a hierarchy of subsystems in relative proportion;
- Centralisation – leading parts coordinate the system and progressively create individuality;
- Growth – usually an S-curve, from relative undifferentiation (entropy) to increasing order and size;
- Finality – growth leads to a mature final form (stable, non-stable, or oscillating);
- Homeostasis – maintains and corrects the system within limits despite environmental variation.

A "main link" often develops, like the trunk and branches of a tree, and of the central nervous system, and spine and skull, in humans and animals. The system takes in, converts and distributes both energy and information, makes decisions, reproduces itself, and is linked in perpetual energy flow (unless destroyed) to the whole. Esoteric anatomy claims that higher dimensional equivalents to these physical systems exist, as for example the caduceus, nadi and chakras in the human, linked to soul, spirit and etheric DNA. The evolving geography of a settlement pattern and its transport network has open systems characteristics corresponding to the above principles, and is outlined in figure 32. Investigation of the forms and dynamics of the atom, planet and man also reveals the same principles. Interstellar space has electric plasma "cables" linking vortices, plasma cells, stars and planets, mimicking the human body's etheric energy system. This clearly has implications for what life is, and for categories of life.

Bailey takes a more fundamental if esoteric approach to the similarity between atom, solar system, planet and man[53], that includes:

- Shape and boundary;
- Internal differentiation and sphere of influence;
- The trinity of rotary motion, discriminative power, and ability to develop;
- Equivalent evolution through a seven-fold progression;
- Progression from the 7 through three major universal Laws to unity;
- Group relation, finding place and role in the larger whole; and
- Responsiveness to outer stimulation, developing consciousness and awareness.

The implications of this for the meta-analysis of science is that, as Bertalanffy foresaw decades ago[54], the isomorphy of laws and conceptual schemes in different fields means structural uniformity at different levels and in different realms. The tree of life in realms including the metaphysical, is a basis not just for the unity of science, but for understanding and living the unity of all life.

The natural unfoldment of deep general systems suggests a pattern not unlike Rupert Sheldrake's developing morphogenetic field[55] in which harmonics of resonance allow information to be transferred from one evolving system to another between the different radiatory parts of the systems. Within spacetime, the past affects the present, which affects the future within a particular system. But there is also resonance across systems in the present wherever strong harmonic frequencies exist, which explains herd behaviour, the transfer of emotion between human, animal and plant kingdoms, and the hundredth monkey effect. Resonance is a mechanism for information transfer throughout spacetime at all scales of existence. There is also a connection between spacetime systems and their essence, or

archetypes, beyond spacetime that provides ongoing influence and seeming "beginnings" for some types of morphic fields.[56] At higher levels of awareness this perception beyond spacetime provides deep foresight that guides system growth.

Oldfield and Coghill give examples of how the direct influence of electro-magnetic frequency harmonics of biological and mineral systems can enhance or destroy the health of living systems.[57] The implication of a common structure of resonant communication for a range of entities is immense, and provides a basis for unity and a mechanism for communication within the whole.[58] Clearly, this deep form of meta-analysis could yield convergence and integrity of information from and for a wide range of disciplines.

A further form, of *unitary meta-analysis* is that which seeks to unite the methodology of understanding all that is, and to integrate form and value using such approaches as metalogic, metaethics, metamathematics, and metaphysics. At this level, analysis and synthesis are one. As the other forms of meta-analysis become more prevalent, this philosophical form will achieve greater relevance in examining, and validating where possible, the nature of our realities. As such, it will contribute to meta-science (discussed below).

An organizational aspect of meta-analysis includes the self-actualising of global research.[59] It does require international agreements about the free flow of what is now regarded as intellectual property. When it is recognized that all knowledge is intuitively available to everyone, there will be recompense as now to those who put the effort in to acquire it. However, it will be understood that the knowledge has a universal source and is the property of no one (or of everyone). This will become a cornerstone of meta-analysis.

6. Self-actualization

In science, self-actualization has two main applications, which should be cross-catalytic and lead to a further evolution of the paradigm:

1. In the science of the self-development of science, or meta-science,
2. A form of human potential development within the realm of science.

Self-actualization is the progressive unfoldment of each chakra level. The self-conscious effect on this unfoldment starts mainly at the Solar Plexus and accelerates significantly at the Ajna. The concept of self expands from the limited physical self of the Base chakra, the rigid kin-self of the Sacral chakra, the self-centered power of the Solar Plexus chakra, the conformist social-self of the Heart chakra, and the independent individual-self of the Throat chakra, to the interdependent integrative self of the Ajna chakra, then the unity of the Crown chakra.[60] However, it is the integrative and enlightened stage of the Ajna that has the commonly accepted qualities of self-actualization relevant to the new science.

In the seven-branched menorah candlestick image of the mirroring of the higher and lower chakras (see Figure 5 in ch 2), the Ajna is the higher correspondence to the Sacral.[61] At the higher level, there is a reasoned and voluntary acceptance of "rigid" societal rules for the common good and an intrinsic personal responsibility for the whole. Likewise, the elementary indissoluble oneness of the Base is mirrored in the Crown level as divine unity, a state that the Ajna is beginning to experience and comprehend.

The capacity of the Ajna is immensely greater than the Sacral level, and is at the takeoff point to a vastly expanded consciousness. Graves characterized the Sacral level as being an "awakening in fright" to the complexities and threats of an uncomprehended world. The Ajna could be characterized as a return to fright, a creative anxiety about a world of our making that is growing far too complex for our ready understanding and management. At the Sacral level, the answer was strong authoritarian leadership, severe laws and punishment, and the use of magic. At a modern global scale, the Ajna has a similar need for strong but democratic and voluntary leadership, and enforceable law. At the personal level, pure subjection to divine inspiration and law is required. The use of magic will probably have its scientific counterpart in controversial manipulations of poorly understood or "hidden" forces of nature. There will be the integration of the spiritual aspect into daily life, and a possible return to some earlier forms of nature magic. At this level scientists can be seen as sorcerer's apprentices, unleashing forces they cannot control, and needing higher guidance in order to leash them again.

The real significance of scientific self-actualisation at the Ajna level is the self-conscious creation of a new scientific paradigm. This is *metascience* – the science of the understanding and improvement of science. It takes us beyond but includes the current level. Metascience is based on products of the imagination - the image is attuned to and made manifest. Therefore metascience is the progressive heightening of consciousness, including attunement to techniques to do this. It is about the origins of knowledge and how to learn more from them. At this level the enlightened spiritualised scientist realises the following:

> "I am the Lord, and none other. Change the paradigm. Look up. Regard Reality. Truth guides you. Let other minds step the truth down to denser practicalities."

The Ajna integrates all that has gone before (lower chakras) but is still a duality awareness of spiritual omni-science and uplifted inductive experience. A natural outcome of Ajna development is therefore the convergence of science and spirituality, which raises the issues of the true nature of the personal self, with its differentiation to higher and lower self, and the purpose of the self. The new paradigm will focus more on the science of the higher self and revelation of the purpose of science. Using the term "soul" for higher self and "personality" for lower self, an understanding of their nature and interaction will lead to new techniques of consciousness transformation, involving intuition, invocation and meditation, the latter subsuming the older scientific methods. The soul knows oneness, and the aim of the soul of the scientist will eventually be oneness with the mind of God, as much as can be grasped.

Metascience is the creation of a new paradigm, now involving the application of most or all of the qualities listed in this chapter. Thomas Kuhn's work on the structure of scientific revolutions is the beginning of modern metascience. This type of work will expand rapidly in the 21st century. When we more fully understand the mechanism of soul unfoldment as personal development, then metascience will have the clue to its own self-actualization. The individuals and organizations of science will then work more effectively on themselves to improve the revelatory power of science for the service of all.

The style of work of the Involver as defined by Jacques and others (in chapter 5) is free of all "normal" managerial constraints or incentives. The work organization must suit Involvers for them to perform well. When the various institutions of science understand this, their

productivity will blossom. In the meantime the independent Involver minds create their own advances in science in whatever way they can, in diverse and unexpected ways. Whether they are unknowns with unusual ideas, or respected scientists leading unconventional lives, they lead us to a fresher, different and greatly improved understanding.

The effect of the *human potential* application of self-actualization could lead the more logical aspects of metascience in contributing to a new paradigm. This is because the whole of human revelation of "science" rests on human capacity. As this capacity expands and takes off, so the nature of revelation deepens. The higher the chakra level, the greater is the capacity of revelation and other forms of awareness to influence self-development. Self-development peaks at the Ajna level, greatly accelerating revelation and the auto-catalysis of science.

Peter Russell graphed the super-exponential growth of information processing in the USA and noted how, in just a few decades, the use of computers burgeoned from a small number of individuals to a vast international industry.[62] He and others such as Halal[63] predict that the involvement in conscious self-development is a later wave that will see an even more rapid and dramatic growth than that of computers (see Figure 9 in ch 5). We could expect the greatest rate of progress to be at the Ajna level, yet the greatest numbers of participants would be at sub-Ajna levels. Already, we see this in the growth of human resource development in business and industry, in expanding adult education, the wide range of self-help articles in popular magazines, the great increase in alternative development workshops and practitioners, and increased interest in healing and alternative therapies, in meditation and in techniques of attunement to the higher self. This accelerates the cross-catalysis of all aspects of society with science.

An outcome for scientists will be a greater awareness of implications and issues of the day, as well as an ability to tune to higher concepts and understanding. These new ideas will be applied creatively for all. It requires a great sense of balance in treading the middle pathway, the "razor edged path between the chasm of logic on the one side, and the chasm of credulity on the other" (an Arabic saying).

7. Spiritual Vision

True science is about understanding everything that is knowable, everything, not just matter. Consequently the new science includes psychological, psychic and spiritual phenomena. In terms of its vision, current science (but not all scientists) has temporarily lost its way in the depths of materialism. Religion and science used to be united, and I predict that this union will be restored at a higher level of capacity in the new paradigm when we revise our understanding of both spirituality and materialism.

In the Newtonian paradigm, one could analyze the divine out of nature because of either a lack of adequate spiritual data or inadequacies in the mechanical analysis. The Energy Field paradigm provided an opportunity to speculate about oneness, but it was the quality of the quantum seemingly operating beyond spacetime that made many physicists speculate, within the Quantum paradigm, about the mind of God. The physical and psychological sciences are yielding more data that can be matched to spiritual axioms, and theories are arising that may be better understood if we assume levels of consciousness beyond spacetime, and of creativity beyond the human.

Spiritual vision for the scientist suggests the discovery of constant laws in different frames of reference. Such discovery could draw on quantum theory, transpersonal psychology and frequency field studies for guidance. The different frames of reference might include the mystical, psychological, philosophical, biological and physical in relation to common phenomena, and could refer to morphogenetic fields (Sheldrake), soul structure and energy, and multi-dimensional dissipative structures and cycles. As with quantum relativity, we may find that there is no "true" frame of reference, and that one frame can be logically transformed into another. This "vision" would help unite the many divergent specialties and viewpoints of the Throat level. The Ajna paradigm will therefore see the resurgence of the scientific generalist but with integrative precision and rigor.[64]

The vision will see beyond conventional conceptions of spacetime, uniting quantum mechanics and psychic phenomena. For example, Blake's seeing "a world in a grain of sand" is a mystical poet's perception of what some physicists propose as a holographic universe, in which every particle is a hologram of the whole. The direct perception of the mystic's intuition and the psychic's vision cuts through spacetime, the wealth of experimental evidence making this a reasonable scientific postulate. The mechanisms of psychic and spiritual perception need not transgress the laws of physics, but may be merely outside the current *known* laws of physics. These mechanisms will form part of the new science.

The more that "physical analysis" explores the abstract levels of physical nature, the more it has to deal with transference of matter into energy, the sub-atomic unity of substance in spacetime[65], the transformation into that which is beyond spacetime and its reverse, and the influence of consciousness and of frames of reference upon "reality." Much of this theorizing could be taken to justify or prove ancient wisdom axioms such as the unity of all, the conservation of life and consciousness beyond forms, the causal primacy of mind, and the evolution of awareness inherent in all forms of things. The valuable contribution of psychic research is that it has paralleled quantum research, but works explicitly with consciousness. The parallels have implications for such issues as the location of consciousness and interactions between consciousness in the different kingdoms of nature.

When we vision unifying formulae and general systems structures as symbolic of universal pattern development, we could suggest, as a frame of reference, that they are criteria in the mind of God for increased order and wholeness within a particular cycle. This would mean that they are keys for decreasing entropy within universal patterning, leading to the apotheosis of the inherent consciousness. What this means as overall divine purpose will depend on further research. If this suggestion - i.e., that universal formulae are criteria - is accepted, then it puts humanity as potential co-creators with higher levels of consciousness. We seek to understand these criteria, and then to apply them to transform our entropic reality to closer match the ideal. The ideal archetype has its laws – at every level and in every realm of the whole. By knowing the laws we can match the existing form with the ideal, and if we only partially know the laws then we do our best with what we have. We do this with genetic manipulation to create "better" animals and plants, according to our values. By knowing psychological laws we can closer match our capacity for love and wisdom to the ideal, and many are doing this self-development now. It takes time, even lifetimes, to repetitively try out ideas and so bring the vast structure of human society on Earth closer to the archetypal ideal, in all its beautiful diversity.

The challenge for integrative science is to see a whole system at a level of abstraction appropriate to our purpose, and to integrate multiple purposes, including the divine. We need to assess inherent values in the system, such as our perceptions of the preservation of life, and Maslow's hierarchy of needs. The purposefulness of cyclic systems development would need analyzing as an outcome of the implications of fractal levels and types of consciousness, in all kingdoms of nature. Humanity's growing potency to influence life and its many forms on our planet inexorably locks us into creating not only our own future but that of the planet. It is our responsibility now to strive to understand, manage and create the best of futures.

For example, we have seen how generic psychological and cultural levels operate in economics, politics, places of work, and morality, and how common systems principles can unite many realms in stages of unfoldment. Each realm (physical, ecological, psychological, economic, etc.) is a subsystem of the planetary whole, and when they clash they become like disease or cancer in the body. Full system knowledge is required to heal the body, here of the world or a region of it. As with the physician, this is better done when one knows what to do. This means knowing the system dynamics at the various levels and realms, and the consequences of their interaction. If our purpose is to heal the whole of life on Earth and create bounty, beauty and joy, then the keys are there for us to grasp.

Without vision, the people perish, because true vision is the progressive energy that entrains people to evolve. Without it, civilizations stagnate and regress.[66] Fortunately, a new vision for science is now evolving.

8. Co-Creation

Scientists can now create new forms of biological and mineral life.[67] The human race can now create new atomic elements, tailor molecules to produce new complex substances, engineer genetic coding to produce new complex life forms, and clone existing forms. We may not yet know how our universe was created, but we are steadily gaining the capacity to create fundamental forms imbued with life, a capability until very recently thought to be a characteristic of God, and only of God.

Our ability to expand this God-like creativity will increase, posing great and unavoidable questions of *ethics and purpose*. To phrase it poetically and realistically, "in entering the creative mind of God through science, we will see the need to enter into the heart and will of God." The God-like knowledge and ability to create requires moral values and direction, because without them, science behaves like a sociopath.[68] Those claiming that science should be without values bear a heavy responsibility for its potentially destructive impact.

Should we allow people without values, amoral scientific strategists, to handle the power of life and death? We have seen horrible consequences of this, such as deliberately exposing pregnant women, prisoners, soldiers and retarded people to radioactivity in the USA and UK simply to see what happens.[69] Some scientists and executives employed by those tobacco, food and chemical companies that poison the Earth and its people prostitute their professions to deny truth and have much to answer for. Smith & Best (1989) refer to some of the many instances of exposing unknowing populations by design or default to the electro-magnetic spectrum. Be it warfare, economic profit, self-protection, or scientific curiosity that drives the deceptions, in all instances, scientists collaborate. The consequences of this are now so deadly

and sickening that participating scientists cannot use the Nuremberg defense. We are all responsible.

The new scientific paradigm will have explicit values and a well-developed sense of responsibility for the consequences of science. However, this calls for research into the nature of morals and values, which will incorporate the feeling and intuitive aspects of human nature with the thinking and logical.[70] As humanity increasingly grasps the power of creation and destruction, it will call for a closer integration of science with a higher political process. The purpose of scientific revelation and the will to effective activity for all will be refined in the political cauldron. The authority of the new scientific paradigm will depend on its users' critical assessment of its impact on the development of integrated whollist systems that sustain planetary life and expand its quality.

But why *co-creation*? Because recent developments in science allow a radical restructuring of the conception of reality and causality based on the unity of spirit-soul-matter – albeit with discrete organizations within it. Esoterically, it is because we are a part of God, with the potential and some qualities of God.

In the late 19th century, Vivekananda began this modern form of understanding, which integrates science and religion (or science and mysticism, wisdom teachings, etc.). For Western scientists, as far as publications record, it happened in the mid-20th century. Northrop in *The Meeting of East and West* (1950) and Siu in *The Tao of Science* (1957) pointed to the need to integrate Eastern and Western approaches to reality. Capra's *The Tao of Physics* (1972) took the baton further in charting the parallels between the new physics and Eastern mysticism. Itzak Bentov created an excellent basis for linking physics to psychology and spirituality in *Stalking the Wild Pendulum* (1977). He indicated that mind and matter were the same, existing in different dimensions and frequencies. Wilber's *The Atman Project* (1980) integrated psychological concepts with Eastern and Western wisdom levels of development and transcendence. In *The Self-Aware Universe* (1993), Goswami attempted to resolve the paradoxes of quantum physics reality, and took a physicist's point of view in showing the primacy of consciousness in the act of creation. This book will not repeat their remarkable logic, intuitions or evidence, except as it may support the concept of co-creation.

This book's propositions are simple, that:

- Consciousness creates the world,
- There are fractals and varieties of consciousness of that which created the universe,
- As people have consciousness, then they have a degree of creative ability, and
- The essential unitary nature of consciousness makes divine co-creation possible. The co-creation may be vertical (higher and lower strata of consciousness in the various kingdoms in nature), and horizontal to include all of humanity.

Goswami applied quantum physics to a model of consciousness, and showed how it is possible for a "primal" consciousness to exist out of spacetime and yet order the consciousness that exists within spacetime. His division can be seen as dual, though the divisions work unitarily. This unity exists in all consciousness, in its various kingdoms and qualities, both in spacetime and beyond it. Some humans are aware of it and can consciously co-create within it.

A brief explanation of the line of reasoning for the quantum model of consciousness follows. Quantum physics has overturned the assumptions of classical (Newtonian) physics, which obstructed an adequate theory of consciousness. These Cartesian assumptions, specified by Goswami, included:

- An objective universe exists independent of human observation;
- Causal determinism governs the form and structure of the universe and its contents;
- All interactions between material objects are mediated contiguously, i.e. there is physical continuity in spacetime;
- Matter is primal and consciousness is derived from it.

On the other hand, quantum physics demonstrates that:

- A quantum object can behave as a material particle or as an infinite probability wave;
- Two objects at a distance can be linked instantaneously;
- Consciousness transforms the probability wave into a localized particle through the act of measurement, indicating the primacy of consciousness over matter.

Goswami looked at the parallels between existing data regarding the mind and the quantum, and found that both have uncertainty, complementarity, quantum jumps, non-locality and coherent superposition. He concluded that these parallels suggest that the mind obeys rules similar to those of quantum mechanics.[71] Moreover, he asserted that the mind should consist of substance similar to quanta, which could be called *mentons*, analogous to photons. The wisdom teachings say that thoughts exist in mental substance.

In providing the model for co-creation, the concept of discontinuity - which is a quantum jump out of an existing system - is important. Goswami proposes that consciousness can exist outside of spacetime, a proposal of many wisdom teachings and also supported by psychic research that controls for influence by human electro-magnetic fields.[72] Outside of spacetime, the quantum mind exists as a coherent superposition, which is a complex of infinite probability waves. This is analogous to the infinite set of all possible futures postulated by physicists when theorizing about spacetime development.[73]

The act of choice “collapses” the probability waves to produce what could be termed “mental substance” in spacetime, i.e., our ideas and thought constructs. Choice comes from the inviolate level, which is outside of the spacetime system. Being outside of spacetime, it is called “non-local,” and enables information outside of the bounds of local spacetime to be known. This means that an aspect of mind is transcendent, in that it lies beyond spacetime and yet interpenetrates and influences it. Mind is the causal principle, with spacetime (and all it contains) as a subsystem of mind. This relies upon a fractal hierarchy of mind for the consistency of the quantum mind model.

This hierarchy exists as the seven levels of capacity, which is of inherent consciousness, with each level subdivided into a fractal seven, and each octave of seven being a level in a larger octave. The highest two levels or sublevels connect, recursively, to the two levels of consciousness beyond spacetime (these levels are detailed in chapter 7). This gives a direct harmonic link via the upper two levels throughout all creation to the “mind” beyond spacetime. It does not mean that the quality of consciousness is the same at all levels, as it is “stepped down” resonantly to provide information appropriate to a system or subsystem. Evolution through the seven levels means that, recursively throughout creation, the light of

the upper levels unfolds gradually, in stages. It provides a channel for the flow of energy and information back and forth between spacetime and that beyond it. Science currently identifies or suggests some of these transfer points as black and white holes[74], superstrings, and quantum jumps. The quantum-mind theory proposes another. The transfer from non-locality to spacetime is an act of creation. The transfer from spacetime to non-locality is symbolised in the Bible as the payment of tithes to the Creator (see chapter 8). These tithes are a form of energy feedback in the management of cycles of incarnation and development.

I propose that the role of the spacetime subsystem (our world) lies in the training of aspects of mind as souls in the act of creativity. This assumes that the transcendental mind evolves, and that there are likely to be vast differences and variations in quality of mind, each capable of affecting spacetime subsystems. It opens the possibility that different orders (or quanta) of mind may create different universes, each a classroom for the development of aspects of the mind of God.[75] If this is the case, then for each universe an overarching mind quantum might set the parameters in the form of probability wave structures, discernible through mystical perception of symbol and through logical analysis of formulae. Sub-units of that mind (e.g., the souls of people) learn within that classroom until they reach at-one-ment with the overarching mind quantum.[76]

The model of the atom illustrates how the levels of consciousness may be analogous to the different levels (or harmonics) of the electron's orbit. At each level, the atom's energy and movement emit a particular note and field. The shift to a different level requires a quantum jump with an import or export of energy as a photon quantum. Similarly, where different levels of mind operate, a shift in note and field would be accompanied by the photon equivalent, the *menton*. When we attain to a higher level of consciousness, we become more illumined (and excited) and this creates our new note and electro-magnetic field. When a high spiritual being operates at a lower level, that being "sheds light" both literally and figuratively. The next chapter takes this topic further.

The implication of this for co-creation is that we all co-create to some degree, as we are unified in causal consciousness. This helps explain synchronicity in the development of new ideas and applications, and is the basis for the "global brain" and its mind as proposed by Russell, Bailey and de Chardin. The new scientific paradigm will promote the techniques of conscious co-creation with the non-local aspects of mind in order to deal with real problems. This will require transformation of waking consciousness to link with the "higher mind" to access the "raincloud of knowable things." Insights so gained are crafted into form in the spacetime system. Co-creation must avoid the illusions and dangerous co-creations that such powerful techniques can involve. It will acknowledge the possibility that super-conscious beings may exist at different levels, and may be willing to assist humanity. Experiments in linking the consciousness of people with the animal, vegetable and mineral kingdoms will also take place, to develop coherent living systems.

Accepting the non-local nature of mind will bring science closer to the old spiritual wisdoms. As these originate beyond spacetime, they will be seen as perennial wisdom-science expressed in the concepts of the day. Jung's archetypes, among others, will take on new meaningfulness. So will universal mythologies such as the creation and fall of man, the exodus to the promised land through the divided sea or river, the virgin birth and crucifixion of the saviour, Jonah and the whale, the prodigal son, and Samson and Delilah.[77] King Arthur, the round table and the search for the holy grail may be seen as the role of Ursa Major

(the Great Bear or Plow constellation – Arthur was also known as the plowman and bear god) and the circle of the zodiac in the quest for soul perfection. Snowhite and the seven dwarfs may be understood as an allegory of the soul and its chakra mechanism.

The quantum model of consciousness can clearly be developed further. It restores free will and meaningful values to a prominent position in the act of choice. In the initial stages of our development, we may have limited capacity and a growing conditioning, but we always have the ability to evolve beyond our present state. This leads ultimately to conscious co-creation when we learn the lessons and responsibilities of our spacetime schooling. The re-creation of a viable present and future is a central focus of the new paradigm. We are inevitable co-creators, so we may as well learn to do it well. And if there is a divine plan, let us work together to put it into action.

We will be much more aware of the *power of creativity* that we all possess, and will pay much more attention to its psychology. Such awareness will come from inner understanding, and from research linking the quantum mind model with developmental, humanistic and transpersonal psychologies. The pressing need posed by growing complexity and the potential loss of control to create a positive future will hasten the process. By the end of the twentieth century we created complex and powerful technologies that have global impact, yet our "advanced" Earth culture is not yet able to manage these safely. As a result, we are endangering Earth's life systems and consequently threatening civilisation (taken further in chapter 11), either through warfare, ecological devastation, sabotage, or social dissipation. As we become aware of the need for personal change to create better lives, we see the need to develop "psychological technologies" to help our transformation. These are internal technologies to develop love, wisdom, attunement and creative abundance for all.

Section 6 above characterized the Ajna paradigm as a "return to fright" about the complexity and dangers of the modern world.[78] Research in the USA has shown that depression increased dramatically during the 20th century to be in epidemic proportions by the end of the century. Seligman calls it "learned helplessness", caused by a belief that one's actions will be futile.[79] Some contributions to this feeling of helplessness include:

- The complexities of modern life and threats to survival through nuclear warfare, terrorism, ecological devastation, chemical, electro-magnetic and radioactive poisoning, etc.
- Intense information stimulation biased towards the lower chakras through violence, prurient sex, drugs, world problems, etc.
- Materialism in society, economics, science and psychology dimming the light, meaningfulness and hope of the transcendent.
- Accelerating change to the environment, work and culture leading to bewilderment, grief and anomie.

A perceived lack of meaningfulness, direction, control and choice that produces the depression can create a self-fulfilling negative spiral. However, as Seligman demonstrates, it can also be reversed, which is just as well. Russell quotes Polak's findings that the power of a culture's image of its future predicted the direction it would take. Seligman supports Polak's work by confirming the optimism found in the Jewish tradition. He also found that politicians' level of optimism was the best single predictor of their electoral success. Regardless of realities, we want an optimistic future and optimistic leaders to help take us there.

Our success in creating a bountiful and harmonious future depends on a combination of talent, will (or motivation) and optimism.[80] Talent or aptitude covers the natural inclinations, skills and intelligence, and is the subjective essence of the old scientific paradigms. The new paradigm will acknowledge the importance of other aspects of psychology as an integral part of the science, not just as objects of study. Science involves emotions, intuitions, values, will and ethics that, as quantum mind theory implies, are a part of choice and therefore part of substantial reality. We can no longer hide behind logic and objectivity alone; science has moved on to become more encompassing.

Goleman sees emotional intelligence as a "meta-ability" determining how well we can use whatever skills we have, including raw intellect.[81] Seligman found that optimists do better at school, work, health and play, and that optimism can be learned. Of course, the pessimist's value lies in accurately perceiving reality, and urging caution in new ventures, but pessimists rarely create new and better worlds. It is the optimists who explore, research, develop and plan. Society needs its balance, and the optimists will develop options for a creative future.[82] Ormerod[83] reached this conclusion for economic growth. His model relies on the balance of optimism and pessimism for business cycles, and for a predominance of optimism for long-term economic growth.

The new science will take this further in its exploration of spiritual consciousness. It will experience and understand that "faith is the substance of things hoped for, the evidence of things not seen". It will see the causal transformations between spirit, consciousness and matter, just as Einstein saw the transformations between E, c & m (taken further in the next chapter).[84] Just as E & m are one, so spirit and substance are one, and can likewise be transformed one into the other. True and clear faith is living spirit that is one with consciousness and matter. We will understand and apply this in the new science.

Zohar is now analyzing how spiritual intelligence is a prime requirement for good management, whether of business, family or world affairs[85]. Ethics, vision and integrity are essential for a safe and free world. Spiritual intelligence provides the basis for these, and gives a powerful meaning to our lives. The value of high and combined levels of mental, social and spiritual intelligence for our ability to create a better science and a better world is taken further in chapter 10, in the section on the Act of Creation.

The techniques of inner development, new quantum psychology and the scientific paradigm will address this creation of the present and future. They will see the objective and the subjective as sides of the unitary coin, without which a constructive future cannot be built. They are lines of development that are integrated at the Ajna level.

In creating a positive future, *meaningfulness and purpose* will be restored to science and to people's lives. Instead of helplessness in the face of a complex and difficult world, there will be inspired and mutual helpfulness leading to better understanding and choice. If science has still one major lesson to learn, it is one that is at least 2,000 years old—the role of love in all creation. If the new science cannot incorporate this major creative principle into its paradigm and theories, then it will have failed. If it succeeds, the way will be open to begin to understand the meaning and purpose of life.

Paradigm Signature

Each scientific paradigm has a keynote, an easily recognized signature. Recent successive keynotes include Newton's mechanical world, Field Theory, and the theories of Relativity and the Quantum. The signature of the next paradigm should be an Integrated Field Theory that incorporates not just the physical forces but also consciousness and love. It will involve the "fifth dimension," as outlined in the next chapter, and will incorporate the quantum mind of God.

Einstein went beyond the energy transformation concept of Field Theory to include matter in his trinity equation. The Involver paradigm of science will extend this to include consciousness as a causal influence within the laws of physics. This will be seen to be a variation of the term "c" in the formula $E = mc^2$. The influence of consciousness on physical systems has already been broached by quantum mechanics through participative measurement collapsing a probability waveform to a particulate location. The Global Consciousness Project studies the interaction of consciousness with physical systems through random number generation. It shows many deviations from randomness at the time of significant global events such as 9/11, often starting *before* the event.[86]

The implications of this effect of consciousness will be vastly expanded and demonstrated in the New Hermetic science at the Ajna level. Conscious purpose will then be known as the prime mover affecting the very laws of physics. When this is linked to non-local awareness (beyond spacetime) then a rational basis for a rapprochement between religion and science will be laid. The interrelations between consciousness, spirit and matter will become working propositions.

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1 Prigogine & Stengers (1984, p.309). On the world stage, we see overlaps between the various chakra levels and their resulting scientific paradigms. Historically, the Primitive and Kinsperson levels have endured for millennia. In Europe's 17th century, nations progressing to the Loner level led the transformation from feudalism to basic capitalism. Since then, the speed and complexity of social and psychological development have increased exponentially, with corresponding changes to the scientific paradigm.

2 In other words, the prevailing paradigm of science is subject to the society's average level of capacity and not to individuals well above or below that level. A prevailing cultural paradigm might be influenced by the level above or below, but not by more distant levels. In most cases, a culturally based paradigm will reject switching levels and accept improvements only within a level. This leaves scientists at higher levels (as individuals, or in particular schools of thought) either frustrated or forced to work in an arcane manner. Worse still, they may be persecuted by the strictures of the prevailing cultural paradigm.

3 Anomalies in their science exist, for example, the mystery of how the Dogon tribe of Mali could know the dynamics of the Sirius star system, of Jupiter's moons and Saturn's rings well before their discovery by modern science using sophisticated instrumentation. Even if the tribe obtained its knowledge from ancient Egypt, the mystery still suggests that vastly different levels of capacity and science existed side-by-side in our distant past. The source of this high knowledge is unknown, though Temple (1976) suggests extra-terrestrial visitation. Chapters 8 and 9 consider other general possibilities.

4 The famous library of Alexandria in ancient Egypt was organized as a religious cult headed by a priest of the Muses (*Encylopaedia Britannica* article on Classical Scholarship).

5 *Encylopaedia Britannica* article on Science.

6 Ibid.

7 Ibid.

8 Quoted in Murchie (1967, Vol.2, p.347).

9 Russell (1984, p.61-6).

[10] This super-exponential development is built into the structure of human evolution, because the number of petals in each chakra exists whether dormant or awake. The process of evolution awakens and energizes the petals and the chakras progressively.

[11] Note that the 1st Ray is integral unity.

[12] Stern (2006).

[13] Kosko & Isaka (1993), Kosko (1994).

[14] There are already claims about the theory of the unification of physical forces, which could advance science to a more integrated level, e.g., Mills (1995), Kaku (1994), but see also LaViolette (2005, 2004, 2003) and at www.etheric.com, for reasonable alternative theories about cosmology and sub-quantum physics, and Thornhill and Talbot (2007), Talbot and Thornhill (2005) and at www.thunderbolts.info and www.holoscience.com for refreshingly scientific observations of the fractal electric universe.

[15] Extra-terrestrial influences include galactic and solar energy variations that can greatly influence terrestrial ecology and human life. See LaViolette, Thornhill, and Talbot (endnote 14 above).

[16] This is the theme, but including integration, of Wilson (1998). Convergence is ultimately due to a common pattern of archetypes.

[17] This ambiguity is a challenge to both skeptics and credulists alike, who tend to be respectively either intolerant or over-tolerant of it.

[18] In comparing the influence of left and right brain hemispheres, Howard Bloom (2000, p.157) says that "it's the wedding of the nonrational with the intellect which studies show produces the most accurate anticipation of upcoming pitfalls and strategic openings". The issues of true and false intuition, or of higher and lower sources, is significant and is a part of the developing scientific theory of intuition, which will deal with issues analogous to those in the theories of value, aesthetics, ethics and metalogic.

[19] This is not the place to argue cosmology, but we still do not know scientifically whether our universe is an open or closed system, and what happened before the "big bang," i.e., outside of spacetime, and why. Research into singularities, black holes and the electric, plasma universe will help, as might John (1:1) and Genesis (1:1-3). From a modern scientific viewpoint, Einstein defined mass (of matter) as $m=E/c^2$, but as $E=hv$, then $m=hv/c^2$, meaning mass is a frequency modified by the speed of light (or therefore by consciousness - this is taken further in Chapter 7).

[20] Herbert (1981).

[21] Edwards (1992, p.45 has her basic tenets).

[22] Her research has been critically assessed and verified in academic, military and commercial laboratories.

[23] McClain (1978, p.195-6).

[24] Ibid. p.122.

[25] Compatible with that of Edgar Cayce (1969) and that in Chapter 8, but of a different framework. It is possible to have a number of different manners (dimensions) of interpreting myth and symbol each in its own way valid if the myth and symbol have multilevel and multidimensional reality.

[26] McClain (1978, p.118-22). The number is that of the Ajna chakra as the 6th of 7 (each with 7 sub-levels, i.e., 6x7=42), which is the level of the soul where the Christ Consciousness is born. This is examined in Chapters 8 and 10.

[27] Ibid, p.121.

[28] The term "intuition" has a deeper meaning compatible with these suggestions, which is the light of the soul that produces a spontaneous knowing (Bailey, *GWP*, p.1-3). Levels of abstraction of the intuition exist, just as there are levels of abstraction of logic, intelligence and psychological capacity.

[29] Casti (1996), Kosko & Isaka (1993).

[30] Smith & Best (1989) have calculated some of the quantitative values associated with these field interactions involving people. They indicate that the field strengths (from a range of sources) required to affect people are generally much weaker than officially promulgated as safety measures, or in general conjecture.

[31] Becker & Seldon (1985), Crumpler (1994, ch.22).

[32] Lusted & Knapp (1996).

[33] Radin (1997). Russell (1984) also quoted Targ & Puthoff's 1978 publication.

[34] The other side to this is the convergence towards the frequency of a guru or master, or of an uplifting spiritual object, when attuned to them/it.

[35] Kuhn (1962). Dissipative structures are further considered in chapter 9 of this book.

[36] This includes the cyclic development of global ecological-human systems and their evolution through the chakra stages. Gunderson & Holling (2002) give an account of Hollings' panarchy theory of ecological cycles and transformations at a global and whollist level.

[37] Russell (1984).

[38] Lovelock (1979) comprehensively outlined the Gaia hypothesis. He was assisted by Prof. Lynn Margulis, and there were other scientists who provided precursor ideas, such as Buckminster Fuller and his idea of "Spaceship Earth" as a regenerative system benefiting its human passengers.

[39] See G. Herbert, *Year 2012 and All That*, 2008, at the Articles page at www.progressions.info.

[40] If we are the "accidental" development of consciousness, aware of itself but without knowing how it emerged, how can we have a reasonable opinion about how consciousness elsewhere may or may not emerge? It does not have to be carbon-based and follow our own physical and biological evolution.

[41] Russell (1984, p.43 and 77).

[42] Varying with a number of factors, but I would propose basically with chakra level.

[43] Russell (1984, p.71).

[44] Known as the Flynn Effect, detailed by Professor James Flynn as a gradual increase in IQ scores over decades of the 20th century, mainly as the raising of lower levels of IQ, but with some slowing of this process towards the end of the century.

[45] Oldfield & Coghill (1988, p.103). Hunt (1996, p. 249 also report on experiments where communication between body cells is faster than the nervous or circulatory system could transmit. She also suggests an energy field as the cause. Her research is profoundly about the "mind field" that influences body and brain.

[46] Lipton (2005). The science of epigenetics indicates the primacy of environmental energies in controlling genetic activity in cells.

[47] American physicist Kip Thorne (1994, p.113-120) has remarked that it was Einstein's deeply intuitive physical insights that led to his breakthroughs that revolutionized the scientific paradigm. His mathematical skills were only modest when he made his breakthroughs, and he needed to work with mathematicians in order to express his physical insights mathematically. His intuition created his ideas, and mathematical logic helped to formulate them. This view was also put forward by Seth (Roberts 1977, p.222), who says that "If Einstein had been a better mathematician, he would not have made the breakthroughs that he did. He would have been too cowed. Yet even then his mathematics did hold him back, and put a kink in his intuitions."

[48] This enlarges the sample and strengthens any central findings, speeding and broadening the advance of science. By aggregating diverse individual studies, it can indicate trends otherwise masked. It has enabled stable conclusions to be reached in medicine, social sciences, ecology and astronomy, to questions that could not be answered by single studies. For example, meta-analysis of many studies, pooling over 2 million hospital patients in the USA who had adverse drug reactions, found these adverse reactions to be about the 5th leading cause of death in hospitals.

[49] This does not deny the value of the mathematics of quantum mechanics, but is more about understanding the undefined yet causal content of discarnate hyperspace.

[50] Siu (1957, p.18).

[51] These relatively whole units or sub-units are termed "holons" after Jan Smuts and Arthur Koestler.

[52] Quoted in Russell (1984, p.13-18).

[53] Bailey (*TCF* p.245-59).

[54] Bertalanffy (1968, p.87).

[55] Sheldrake (1981). See also Bertlanffy (1968) for General System Principles.

[56] This is taken up in later chapters, but includes "new" ideas and behaviours. See also Ecclesiastes I, vs 9-11.

[57] Oldfield & Coghill (1988, ch.5). See also Becker & Seldon (1985) and Crumpler (1994, ch.22).

[58] The mechanisms will vary in content with kingdom and level of development. For example, in direct biological transference via the electro-magnetic field, the Solar Plexus chakra has long been associated with transference of instinctual and psychic information between members of animal or human species. In contrast, the Ajna chakra is associated in humans with the higher intuition and telepathy from Masters and between people.

[59] Externally, it will mean a "virtual organization" and dissemination of new science information through the internet and similar devices. However, there are ethical issues about the access to potentially dangerous scientific information by those who are morally immature. Scientific freedom will become even more subject to global security than it is now.

[60] To be poetic about it, we could expand Descartes to include the following perceptual levels:
I survive, therefore I am,
I procreate, therefore I am,
I desire, therefore I am,
I love, therefore I am,
I think, therefore I am,
I integrate, therefore I am,
I am, therefore I am.

[61] The Throat is the first stage pairing with the Sacral, but when consciousness ascends to the Ajna it provides a yet higher correspondence. The linking is via the energy of the 3rd and 5th Rays.

[62] Russell (1984, p.72, 168).

[63] Halal (1996, ch.4, 6). I believe that Halal's timing of the growth of the spiritual wave will be shortened in line with the acceleration of events predicted by the Mayan calendar, see www.mayanmajix.com/art024p.html.

[64] E.g., in the use of fuzzy logic learning algorithms to model complex systems manifesting in the four quadrants of Wilber, and the mapping of regularities of developmental structures and values across different systems of activities.

[65] Lynne McTaggart (2001) provides an interesting account of the zero-point field of unitary energy. Alternative views are in LaViolette's sub-quantum kinetics at www.etheric.com and the electric universe proposals at www.holoscience.com.

[66] Russell (1984, p.202-3) quotes Polak's finding that an image of a positive future creates a flowering culture, whereas an image of a weak future leads to cultural decay.

[67] The atom may not have life in the biological sense, but quantum physics would suggest that life of a more basic organization exists to maintain atomic homeostasis. The perennial wisdom claims that all forms have life.

[68] Otherwise called "psychopath"—an individual without morality or concern for others, often of high intelligence but entirely lacking in wisdom. This seems to stem from emotive inadequacy, leading to poor moral development and a practical lack of empathy.

[69] Blum (2002, ch.15) provides examples for the USA.

[70] I suggest that morals and values are essentially based on feelings, and that ethics potentially integrates logic and morals.

[71] Goswami (1993, p.167).

[72] The work of Grinberg-Zylberbaum, quoted by Goswami, (ibid, p.132), demonstrates psychic effects at a distance whilst shielded from electro-magnetic fields. This differs significantly from the great amount of research demonstrating psychic influence at a distance (e.g., Gerber, 1998, ch.8), but without controlling for the possible contiguous effect of field forces. See Radin (1997), and Brennan (1998) on psychic effects.

[73] E.g., Feynman's sum over histories and Hawking's mathematics of singularity points, in Hawking (1988).

[74] Or galactic centre generators, see LaViolette at www.etheric.com.

[75] There are on record a number of remarkable direct experiences through spiritual perception of "higher" worlds. While these may be open to accusations of delusion, they amount to replicated experiences that form a valid source of scientific information and hypothesis. For example, see http://mellen-thomas.com/stories.htm, and Brinkley (1994), Whitton & Fisher (1986), Schwartz (2007), Swedenborg (1976), Newton (1994, 2004, 2006).

[76] This is expressed more eloquently if differently in Walsch's *Conversations With God, Vol 3* (1998), and Stubbs' *An Ascension Handbook* (1999).

[77] See Doane (1971) and Campbell (1949) for details.

[78] This also applies to the Throat chakra paradigm as both the Throat and Ajna resonate with the Sacral chakra. The Ajna integrates all below it, primarily along the dual lines of Throat and Heart. Its initial line of least resistance resonance is with the Throat, which is the first stage of transference of energies of the Sacral chakra.

[79] Seligman (1991, p.63-5). Crumpler (1994) also notes its direct connection with poisoning.

[80] Seligman argues this for all success.

[81] Goleman (1996, p.36).

[82] This can be linked to birth order in predicting who the revolutionaries might be. According to Frank Sulloway in *Born to Rebel* (Pantheon Books, 1996) those born later are more likely to take up new ideas and practices, though this is a probability and not inevitable.

[83] Ormerod (1998, p.140).

[84] In his famous equation $E=mc^2$.

[85] Zohar & Marshall (2001). Spiritual Intelligence (SQ or spiritual quotient) goes beyond conventional religion, to the core values of our lives and of our purpose on Earth. Good SQ integrates all other forms of intelligence and unifies our actions around a deeply meaningful and joyful purpose.

[86] See http://noosphere.princeton.edu/story.html and a summary of the Project in Wikipedia.