

Overview of my Beijing Essay: Daoist Qi Science vs. Western Science



Photo: body of a 160-year old Taoist sits in lotus meditation position, unchanged from the moment of death ten years ago. Local officials claim his age is well documented. No preservatives. Anyang, China.

This essay documents and speculates on the appropriation of Daoist qigong and neidan into Western culture, where the controlling belief system is scientific materialism. Widespread faith in science makes it the defacto dominant religion of the West, with theoretical physicists as high priests of its cosmology. Scientific faith in natural law paradoxically implies a religious trust in whatever created those laws. Daoists believe qi is the force governing natural laws, and developed energetic sciences to interact with them. In what ways do the two sciences, East and West, overlap in theory and applied method?

"Qi science" is a summary term I use for all qigong and neidan methods, in contrast to "material science" that dominates physics, chemistry, biology, medicine and psychology, etc. in the West. Qigong includes Daoist martial arts, medical and spiritual qigong. These are mostly "waidan" or external alchemy practices, i.e. they regulate circulation of post natal qi (physical plane) to improve health or increase longevity.

"Neidan", inner alchemy, covers any method accelerating transformation of yin, yang, and yuan qi in order to crystallize a person's highest essence, i.e. make the spiritual substance of a human being more real. This potentially permits human will to function

beyond death, i.e. achieve immortality. This inner alchemical process is multi-dimensional. It happens within three Daoist heavens, which I simplify as post-natal or physical form (houtian), pre-natal or subtle form (xiantian), and primordial or formless chaos-unity (hundun). In this essay I've combined waidan and neidan together, as both are based on the same yin-yang and five phase principles that govern Daoist qi science.

I've spent thirty years as observer-scholar and key participant in the appropriation of qi science by the West. As past president of the National Qigong Association (USA), founder of Dao Alchemy Research Institute and Healing Tao University, I saw a dialectical tension arising between Daoist "change by cultivating your human qi" paradigm and the Western "proof of result requires physical measurement". It shows up most dramatically in conflicts Westerners face in choosing a healing modality.

Qi science measures a person's whole qi field, then cultivates wellness by harmonizing sick qi within it. Western medicine measures the sick body part, then separates and attacks it. Defining successful outcomes depends on how each person measures their overall health. The standards of "measurement" are key to evaluating the two sciences.

Western Hunger for an Energetic Science

Many Westerners are disillusioned with Judeo-Christian religions. They are also dissatisfied with its replacement by modern science, though gladly accept its material blessings. Their appropriation of qi science is partly an attempt to fill a spiritual emptiness. They are attracted to the feeling of embodiment and the reliability of results that Daoist methods offer as an "energetic science".

Western seekers may pursue Daoist religion, and find difficulty fully accepting it. Racial discrimination, language barriers, cultural irrelevance of Daoist-Buddhist-Confucian dynamics, disinterest in religious uniforms, statues or doing complex rituals to invoke Chinese deities, and secretive nature of Daoist esotericism are reasons why few Westerners have joined the major temple sects of Complete Perfection (Quanzhen) or Celestial Master (Zhengyi) Daoism.

This exclusion had the side effect of stimulating the birth of a Westernized Daoist culture. Importantly, this new culture centers around extracting Daoist qi sciences from their religious context, so they fit more comfortably into the ruling Western paradigm. This extraction and scientific reframing helps qi sciences gain acceptance. I attended a meeting of fifteen top American teachers of qi sciences in June 2009. They voted to collectively put up a website called "American Dao". The intent was to improve the acceptance of qi science by the American public, not to disrespect their much loved Chinese teachers.

Qi sciences are focused within the body, are easy to physically experience, and allow a practitioner to “self-measure” the effectiveness of any given method. That makes them easy to appropriate. Faith in “qi” may be religious at core. But systematic qi cultivation in daily life feels inherently more “whole body-centered” and scientifically effective for a Westerner than conventional religious prayer to an abstract deity/God. Note that prayer focused on a specific material outcome is gradually being “scientized”, i.e. studies suggest prayer has influence at a distance. This type of prayer could be defined as a kind of qigong.

Western Daoist adepts are prone to using concepts of quantum physics and computer metaphors rather than Daoist deities to explain to themselves what is happening as they do qigong or neidan. This marriage of the two cultures, however misguided Western scientists and Chinese Daoists alike may feel it is, has continued inexorably since publication 35 years ago of “new age science” books like *The Tao of Physics* (Capra, 1975), updated recently by *The Field* (McTaggart, 2002). These authors have little in-the-body Daoist qi skills. What’s important are their questions: is qi science a “real” science? Can I directly contact and shape the quantum field?

The answer to the question of “which science is more real, qi science or western science?” will ultimately involve defining the difference between three types of human imagination: traditional religious imagination, material scientific imagination, and Daoist alchemical imagination.

The New Western Science of Consciousness

The appropriation of Daoist qi science is occurring simultaneously with the emergence of a new Science of Consciousness in the West. Science is steadily encroaching on the terrain of the mind that was once reserved for religion. Currently focused on a narrow field called “contemplative neuroscience”, its headline studies involve studying the brains of Tibetan monks. MRI tests proved meditation can change physical brain structure (Davidson, 2004).

A far more compelling case for the verifiable reality of subtle energy is found in James Oschman’s seminal *Energy Medicine: The Scientific Basis* (2002) and a sequel book. He cites hundreds of science studies detailing probable mechanisms of subtle energy flow and healing in humans. He covers the “biophysics of internal coherence”, liquid crystal molecular arrays that act as antennas, resonance between heartbeat and pulsations in cell DNA, impact of posture on emotions, how every cell has an electro-magnetic field that can be manipulated, and evidence of a “dual” body communication system in which

subtle pulses of information are sent before the slower nervous system initiates action.

The problem, he says, is not a lack of scientific evidence to support subtle energy theory. It's that most doctors, biologists, psychologists, and other "applied" scientists still believe in an older nervous system science that is 50 years out of date. Oschman is not defending Daoist qi theory, just showing that humans emit and can control extremely subtle material forces even during a simple body massage.

Qi sciences are designed to systematically access the subtle energetic matrix underlying the more dense physical biology. For Western Daoists, the Tibetan monk brain studies are extremely rudimentary, and not big news. The value of "contemplative neuroscience" in their eyes is mostly to help Westerners open their minds to practical qi science. For them, proof is in their practice.

Empirical evidence for the efficacy of qi science in medicine is substantial. Ken Sancier, Stanford Research Institute senior scientist, compiled 3500 studies of qigong that demonstrate its ability to help heal most chronic illness (www.QigongInstitute.org). His database has Chinese scientists like Feng Lida proving qi emission changes the DNA in living cells. In another study seven major biological changes were measured in high level Chinese qigong masters, including a dramatic increase in emitted sound frequency, rising from 60 mhz up to 400,000 mhz. Daoists would say these are 'qi effects', not the qi itself.

Daoist teacher Mantak Chia had his brainwaves tested during a simple Inner Smile meditation. The scientist was amazed that unlike Zen, Tibetan, and Christian monks previously tested, all four levels of Chia's brainwaves (beta, alpha, theta, and delta) rose simultaneously and stayed elevated all day. Results from other subjects only changed one type of brain wave, and dropped quickly within minutes after meditation ended. (Eggetsberger, 1998). This suggests there are wide variables within the field of qi science yet to be studied.

Despite qi science's potential to lower health care costs and reduce an epidemic of stress-caused disease, its appropriation is largely grass-roots, due to resistance institutionally ensconced in old science models. But hospitals are beginning to embrace "integrative medicine" and insurance companies are paying for taiji classes.

Will Daoist claims of a qi-based reality eventually be "proven" in the West by instruments? Alternatively, will Western science change its definitions of consciousness and allow a convergence of the two sciences? Or is there a

spiritual divide between qi science and empirical science that will ultimately prove un-crossable?



photo: full body view of 160 year old Daoist, next to a living Daoist (still mortal). I met the student of this teacher's student. The story is that the 160 year old adept asked his body be left alone, sitting in a sealed cauldron, for 3 years after his death. At 2.5 years after his death, the police, freaked out by the falun gong mania, opened the seal. Police report states that a "blue green vapor floated out of the sealed cauldron". Was this cloud his immortal spirit, that had been continuing to work using the body as a grounding wire into this plane?

Harmonic Resonance vs. Objective Causative Action

Qi science's fundamental operating principle is "gan ying", or harmonic resonance. Gan ying could also be translated as "cause and effect", i.e. whatever you resonate with will cause you to act in a particular way. Gan ying could also be defined as "karma" (destiny), since the yin-yang and five phase qi patterns in each human body are like a complex tuning fork resonating with sun, moon, planets, and stars.

Yin-yang pulsations in the qi field arise from a universal yuan qi, Original Breath. Communication within the qi field between anything vibrating at the same frequency is instantaneous. Strike one tuning fork and a distant second fork, tuned to the same frequency, vibrates. Gan ying allows Daoist adepts to practice distant healing and communicate with planets or stars, if they have the skill to attune to the right frequency. It makes "xuan xue", or paranormal ability, into a skill that can be systematically cultivated.

Gan ying is what allows the Dao principle of human microcosm and Nature's macrocosm to precisely mirror each other. It explains why a human body's

circadian rhythms are enmeshed with seasonal cycles. Gan ying is called “correlative physics” in the West. It parallels the phenomenon in quantum physics of two electrons at a distance simultaneously “dancing” with each other. It propelled the CIA to hire psychics and develop the science of “remote viewing” to gather intelligence. The older relativity theory of objective causative action posits interaction between particles which cannot move faster than the speed of light. In correlative physics, the time factor is removed. The unified fabric of space communicates with itself, simultaneously, from two different points. Qi science shares this similarity with quantum theory.

Inner alchemy is the most experimental and multi-dimensional of the qi sciences. Neidan adepts explore the inner space of their minds, a mirror to quantum physicists exploring outer physical space with instruments. Alchemical probing into the “dark unknown” (xu) that births a person through the mingmen (“gate of destiny”) located between the two kidneys parallels physics attempt to crack the mystery of “dark energy” that births the galaxies. A Daoist’s vision of harmonizing Nature’s three heavens parallels the vision of a quantum physicist bridging the gap between subatomic, human, and galactic worlds:

"I am convinced...time does not exist. Space and time will turn out to be useful approximations, similar to a notion like "the surface of the water". It loses meaning when we describe the dynamics of individual atoms forming water and air: at very small scale, there isn't any actual surface down there.

"Space and time are like the surface of the water: convenient macroscopic approximations, flimsy but illusory and insufficient screens that our mind uses to organize reality. Time is an artifact of this approximation in which we disregard the large majority of the degrees of freedom of reality. Thus "time" is just the reflection of our ignorance.

"...There are no objects, only relations. A consistent way of thinking about nature...refers only to interactions between systems and not to states or changes of individual systems. I am convinced this way of thinking about nature will end up to be the useful and natural one in physics". - Carlo Rovelli, *Physicist*. Quantum Gravity (2004)

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A Daoist would agree, but say the natural yin-yang and five-phase laws of qi already govern Rovelli’s “relations” and “interactions between systems”.

Western Science of Consciousness currently lacks even a theoretical medium for consciousness. Qi science has explored and defined its medium as qi for millennia, and in this sense is far more advanced. The question lingers: is “qi” a religious belief or the verifiable medium of consciousness?

Two Sciences: Subjective vs. Objective Methodology



photo: in a Daoist temple, the desk of a diviner beneath a chart of the I Ching, which maps out the fundamental yin-yang principles of Daoism and how they dynamically change.

In material science, a theory is true if you repeat the same experiment and get consistent results. So scientist A must consistently get the same result as Scientist B. In qi science, truth is achieved by each person using their body-mind as a laboratory and repeating each experiment (qi method) until they get a consistent result. But because each human is recognized to have unique energy patterns, it is expected that Dao adept A using the exact same method as Dao adept B may get consistently different results, i.e. unique experiences.

Both sciences are systematic systems of acquiring new knowledge and seek consistency. But there are two divergences between the subjective “self-measuring” of qi sciences and the objective “instrument-measured” methods of science.

One, the only instrument currently able to measure and respond to changes in the qi field is the human body-mind. The fastest super computers are primitive, even stupid compared to average human intelligence and skill. Two, in qi science it is expected that two different people practicing the same method will get different results. Everyone has the same fundamental meridian system, but body-minds are polarized into unique patterns, creating different responses to the “experiment” of practicing qigong or neidan.

The subjectivity inherent in qi sciences is disguised in empirical science by the presence of an objective microscope, telescope, spectrometer or supercomputer. Material scientists pretend the presence of such instruments has removed their personal influence. But it does not remove them from designing both the experiment and the instrument, from their “soft” interpretation of the hard data, or from their personal energy field affecting the hard data itself.. It’s the classic “observer is never separate from the observed”.

This suggests Western science is entirely the product of a particular kind of imagination. Every technology ever invented first existed inside a human mind. When we “invent” something, we move it from inner mind space to outer space, and give it substance. Qi science works the same way, but in the opposite direction. Its methods are designed to absorb the larger invisible qi field and give it a more concrete inner reality in our body-mind. The point is that “imagination creates reality” in both sciences.

How Culture Shapes the Two Sciences

Cultural bias at fundamental levels of perception are well documented in studies of Asian and Western children. Given the same picture and asked what they see, Asians saw the whole image, and Western kids saw specific objects within the image. This “whole field” awareness highlights an essential difference between Western material and Chinese qi science:

Aristotle focused on objects. A rock sank in water because it had the property of gravity, wood floated because it had the property of floating. He did not mention the water. The Chinese considered all actions related to the medium in which they occurred, so they (studied water and) understood tides and magnetism long before the West did. –Nisbett (2003) <!--[endif]-->

Other research suggests Asians are right brain dominant, and Westerners are left brain dominant (Tsunoda)., due to language difference of written conceptual-alphabetic symbols vs. pictographic writing (Shlain, 1998), A fascinating question: did right-brained, whole picture hard-wiring in Chinese

brains lead to the development of inward focused qi sciences? And left-brained, object-focused hard-wiring in Western brains lead to externally oriented empirical science?

Does a similar cultural filtering alter the experiences that adult Asian and Western qi scientists might have? My experience teaching qi sciences around the world confirms this. Different racial groups are likely to have different archetypal images arise in meditation.

Another relevant example: a leading Chinese qigong researcher in the US gave a comparison of studies in China on qi deviation, or negative side effects of qigong, to an audience of American qigong adepts (Chen, 2009). But he didn't realize those studies would have very different results if done on Western qigong adepts. I know from decades of teaching experience that qi deviation is quite rare in the West. Why the disparity?

Qigong can suddenly release feelings in Chinese that are commonly suppressed in order to present a harmonious “face” to family and society. In the West it is expected that one express those individual feelings, so for them qigong enhances the flow of feeling. For a Chinese, the feelings could be culturally disruptive. My conclusion: the “emotional energy fields” of Chinese and Westerners are shaped differently. This is an example of cultural interpretation distorting hard scientific data – and where deeper knowledge of qi science could correct it. If a Science of Consciousness is to mature in the West, the scientists themselves will need qi science skills in order to better interpret their hard data.

Hard Data Distorted by Scientists' Lack of Energetic Map?

From qi science perspective, the design and interpretation of many scientific experiments in the West are distorted by cultural bias or ignorance of qi meridians or qi effects. This is seen clearly in the heavy emphasis scientists give to studying the brain with MRIs, etc. Thousands of experiments give a very detailed and interesting brain map, and raised hope secrets of the mind will soon be cracked. But the brain is not the mind. The “overstudy” of the brain (and correlated understudy of the intelligence of the whole body) simply reflects Western scientists intellectual beliefs about the primacy of their own head.

Qi science treats the entire body as the heart-mind (xin). The brain and its sensory openings is controlled by five vital organ intelligences, with the heart as ruler. Three dantian or “energetic brains” gather qi from the collective field and feed it into a network of meridians to shape our human reality. The brain is just physical hardware.

The heart's electro-magnetic field is thirty times greater than that of the brain, and sends more signals to the brain than vice versa (Heart Math, 2002). Vital organ qi is the software that shapes the sensory, feeling, and thought data running through the brain. A shift to whole-body scans would be much more useful to the Science of Consciousness.

In this view, brain scans only present a narrow slice of the body-mind picture. Brain scan interpretations fail to account for energetic forces shaping the hard data. Empirical science may be highly accurate, but only limited half-truths can be inferred from it. Qi healers know this well. X-rays can detect a tumor, but only a skilled qi adept can identify and shape shift the qi pattern of emotion and perception that may be supporting that tumor.

In this sense the two sciences, East and West, are complementary, and over time may converge to share their strengths. That will not occur until material scientists overcome their arrogance and judgments about energetic sciences. A good example is the 20-volume *Science and Civilization in China*, whose volume 5 on physiological and spagyric (laboratory) alchemy does an admirable job of describing them historically (Needham, 1983). But Needham clearly believes inner alchemy never “worked”, that it’s a failed proto-science with no “reality” other than in the adept’s quaint or superstitious imagination. It’s only virtue was in helping birth material science.

I am a modern adept who has verified qigong and alchemy’s benefits over three decades in promoting vastly superior health, healing power and spiritual awareness in myself and thousands of students. In my view, Needham is close-minded and unscientific in his study of Daoist qi science. He represents the attitude of an older generation of scientists.

Science of Consciousness is arising in the West now partly because a new generation of scientists practice Asian meditation at home, and want to integrate their experience into scientific culture (Usatynski, 2009). The leading theorists of the popular Integral Science of Consciousness, with its Combs-Wilber matrix of consciousness mapped out into stages and states, both admit to doing Asian meditation and movement practices (Wilber, 2000) (Combs, 2009).

There is a quiet revolution amongst young Western scientists fed up with the rigid notions about quantum physics held by institutional Big Science. These scientists are attempting to unify their own meditation-inspired mysticism with quantum physics, and are publishing their ideas direct to the public on the internet. Peer-reviewed science journals will not entertain such “unscientific”

speculations about Consciousness itself being the missing fifth element in the search for physic's Holy Grail, the Grand Unified Theory.

Websites like www.spaceandmotion.com present a simple “new unified theory of physics” based on spherical in and out standing waves moving through conscious space. This creates the toroidal effects (see the site for animated illustrations) using theories that precisely match Daoist yin-yang theory perfectly. The website includes a section on Daoist philosophy. Will these “marginalized scientists” eventually become the leaders of future spiritual science movements?

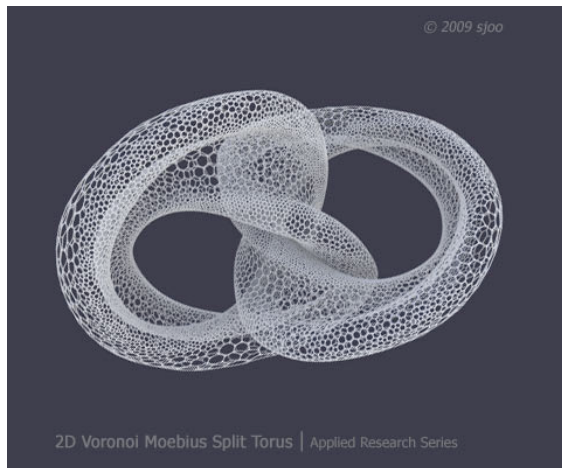


photo: toroidal mobius strip shows yin-yang dance.

Western vs. Daoist Quest for Immortality



Photo: Lao Tzu (Laozi) is the premier symbol of longevity in Daoist culture. This statue is in Luyi, Henan province, said to be his birthplace. Lao zi can also be translated as "ancient child". A living "immortal child" is attracted to the temple. I felt a very strong presence here, perhaps only from several millenium of reverence showered upon this place, perhaps from the Old Boy himself?

The quest for immortality has recently achieved scientific respectability in the West. Its leading edge theorist is inventor Ray Kurzweil, who predicts nano-bots injected into the bloodstream will repair diseased organs. Eventually humans will become cyborgs, with artificial limbs and organs. Our brains will be merged into supercomputers that download holographic images from vast databanks to guide us and allow unlimited virtual sex. Kurzweil pops 200 pills a day to slow down his own aging process until the exponentially rising curve of nanotechnology innovation defeats death at the cellular level.

He believes we'll achieve physical immortality in his lifetime (Kurzweil 2005). The mainstream anti-aging science field has a less sci-fi and more modest ambitions of extending life by 20 years by genetic engineering and stem cell treatments, and periodically renewing ourselves until technology improves and we reach 1000 years. (de Grey, 2007).

In the West immortality is a technocratic achievement of science conquering bodily inefficiency. In Daoism longevity is sought as extra time needed to grow one's "de", innate virtue or spiritual power. A cultivator must align with heaven and earth, show high virtue and serve humanity before immortality is achieved. The Eight Immortals of popular Chinese culture are all paragons of virtue, and

humbly take no credit for good works. Some immortals are driven by their own poor health to even deeper compassion.

A Daoist might view engineered physical immortality to be harmful to the balance of Nature. It blocks the flow of qi and information exchange that human death offers heaven and earth. Without equal spiritual development, long life might be hellish. Qi sciences have spiritual immortality as their ambition, not physical immortality. Even Dao immortals physically die, but their “yang” or substantial light body continues creating and expressing virtue in higher dimensions, or post-death acts as a conduit between heaven and earth.

Western physical immortality seekers separate scientific process from moral issues. They are often driven by a fear of death. For a qi adept, it’s the opposite. It’s a given that consciousness extends beyond death. Anyone of high virtue benefits humanity and their ancestors, even if immortality is not achieved. If one embodies personal harmony, by gan ying it radiates out to society and cosmos.

Conversely if you teach someone the alchemical secrets of Heaven, and they use it to cause harm, you are responsible. It’s this moral concern that historically created a veil of secrecy around neidan and slowed its spread. Western Daoist are lifting this veil, but will have a big job shifting the value system in the West about immortality.

Is the Qi Field the same as the Quantum Field?

The short answer: they overlap, but are fundamentally different. When physicists talk about “energy”, it is impersonal, a random mechanical force of nature. When a Daoist speaks of “qi”, it is intelligent and purposeful. The qi field governs the personal and impersonal (ren and feiren) in patterns that can be known and navigated by a skilled Dao adept. This speaks to the fundamental split between scientific materialism, which holds that human consciousness arose out of the random appearance of matter, and religion, which holds divine consciousness precedes and purposefully shapes matter/body.

The Daoist view is pan-psychic: all matter is alive and conscious. The body of Nature is the expression of mind of Dao. Trees, humans, mountains, planets, stars are living entities. Humans are a microcosm of the divine field, and have a special salvational and hence religious role in harmonizing their personal destiny with the qi field of Heaven, Earth and the Five Directions. In Daoist cosmogony, a primal egg or gourd cracks open and unleashes the yin-yang forces of creation.

Floating inside the yolk of this primal egg are yuan jing (prime matter), yuan qi (primal movement of breath), and yuan shen (original spirit or intelligence). This trinity devolves into pre-natal and post-natal heavens before returning to its original state of chaos-unity (Girardot, 1981). Note that qi science's idea of eternal cycling between "chaos-unity" and states of physical organization preceded modern science's Chaos Theory by several millennia.

Quantum physicists do not include any human qualities in their Big Bang theory or quantum field. Consciousness is a random fluke of amino acids from space landing in earth's primal sea a few billion years ago, and achieved human status only in the last five million years. This is a fundamental problem for the budding Science of Consciousness: where was human consciousness during the Big Bang? Again, without a permanent medium, material science will always be "outside" consciousness trying to look in. Qi Science looks from the inside out.

Some curious parallels arise in the archetypal geometry underlying the two sciences. The Dao qi field consists of three forces: yin, yang, and yuan, essentially negative, positive, and neutral. They are governed by an operating system of five forces: fire, water, earth, gold, and wood, organized into eight deep cosmic qualities symbolized by I Ching (yijing) trigrams.

Quantum theory polarizes particles into a threesome of electron, proton, and neutron. The holy grail of physics is a Grand Unified Field theory that integrates the five fundamental forces of Nature: electro-magnetism, gravity, weak, strong nuclear and a fifth unifying force as yet undiscovered. The atomic table organizes all elements into eight levels of electrons. Physics latest attempt to unify everything is super-string theory, which suspiciously resembles the Daoist theory of yuan qi vibrating everything into existence in multiple dimensions/heavens.



photo: ancient ceramic torus with eight I Ching trigrams inscribed on it.

It raises the question: do these parallels arise because both sciences are the product of human imagination, which reflects a single underlying truth? Another curious overlap is between qigong and the most fundamental shape in physics - the torus, or donut, or figure-8 infinity symbol on its side. In physics it describes many things, from the design of red blood cells to the shape of plasma fields, galaxies, and black holes. Digital readers are strongly urged to immediately visit graphical depictions of the torus in Nature on:

<http://www.smeddum.net/articles/matter.htm> and
<http://www.spaceandmotion.com>.

The first site explains gravity as the underlying force of consciousness that unifies all matter. This theory parallels the Daoist theory of “yuan jing” or primordial essence as the omnipresent original space or substance that subsequently divides into yin-yang and five phase waves of qi.

Nassim Hamein’s paper on “Spacetime Torus Topology” (<http://www.theresonanceproject.org/research.html>) shows how fundamental the torus shape is to all spinning movement in the universe. Daoists have observed for millennia that qi moves in spirals and that this spin is yin-yang and five-phase polarized.

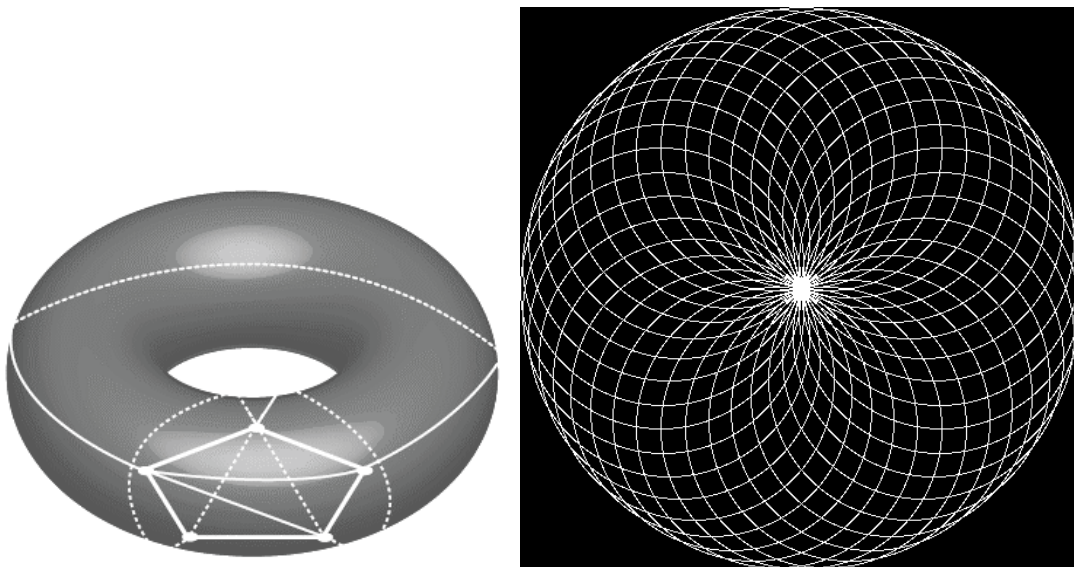


photo: torus on left maps the pentagram (= 5 phases in Daoist Qi science). Torus on right shows sense of yin-yang expansion and contraction which torus holds in equilibrium.

The torus is a very common shape articulated in qigong, in which spiraling arms circulate qi in and out of the body’s core trunk (adept’s core channel = hole of the donut). Neidan often create a torus-like flow of qi once the crown (bai hui) and perineum (hui yin) are energetically opened and qi flows in the chong mai (core channel). This may be another example of qi science re-

creating a shape microcosmically within the human body what Nature creates (and physics studies) macrocosmically.

Morphogenetic Fields as Ancestral Fields

Morphogenetic fields are memory data banks that shape the instinctual and genetic patterns of different species. This is correlative physics applied to biology. It explains how one monkey transmits a learned behavior to the whole field, the famous “100th Monkey Syndrome”. When enough monkeys acquire a new trait it is “uploaded” to the morphogenetic field, which then becomes a “genetic habit” of monkeys born later. It thus explains the group instincts of animals. (Sheldrake, 2009)

A similar kind of species-field thinking is evident in the 2nd century Daoist alchemical treatise, the *Cantonqi*. It notes similarities and differences between things control their behavior. Humans can tap into this principle to manipulate yin-yang forces in Nature. The adept uploads his Yi or creative intent into the collective field by alchemically concentrating and refining it at critical times in sun-moon cycles. The adept merges into and shapes the larger field.

Chinese beliefs about ancestral influence could be seen as morphogenetic sub-fields controlling family lineages. “Ancestral jing” is the equivalent of Sheldrake’s “genetic habits”. Ancestors are living presences within the blood that constantly shape one’s biological, psychological, and spiritual life. One function of neidan is to harmonize relations with ancestors, via ritual skill or adepts ability to communicate with a disturbed ancestor.

Morphogenetic fields also offer a new way to view lineage transmissions in neidan. When you do a practice, you are resonating with the field created by all previous adepts. It could also resolve questions about apparent past-life recall; such memories may not be personal, but rather downloads from the larger morphogenetic field. Material science has no method for changing ancestral patterns other than risky manipulations such as genetic engineering.

Neidan applies gan ying by focusing their intention to internally shift the ancestral field. This is difficult to measure, but this is the first theory in the new Science of Consciousness to posit a medium for consciousness itself.

Is Daoist Qi Field Idealist or Materialist in Nature?

This question is asked by philosophers of science. This defines the critical distinction between religion and scientific materialism. Notions of God, absolute states, and prime creators/deities are idealist. Greek Platonism draws a strict line between the Ideal and the Real, making it idealist. Atheists argue social

needs, not supernatural forces, give rise to human spiritual values, making them realist. Religious values arising from the ideal cannot be described nor tested by scientific materialism. It is the un-crossable divide.

Yet neidan, the repository of Daoist qi sciences' deepest spiritual ideas, is fundamentally materialist. The written character for qi is a grain of rice with vapor rising from it. The rice suggests the material nature of qi, and the vapor its ability to transmute into subtle form. In Dao cosmology, the realm of chaos-unity, yuan jing (Original Essence) is described as immeasurably fine primal matter, yet it's the same substance from which all ordinary matter or post-natal jing is derived. To a Dao alchemist, prime matter is accessible.

Modern scientists manipulate physical matter, and out comes cars, gadgets, clothing, the goods of modern life. Alchemical scientists manipulates subtle matter to dissolve old memory patterns inside our mind, and a new body and subtle perceptions materialize. Both material science and qi science are transmuting matter. But the alchemist claims to transmute deeper levels of matter, and ultimately prime matter.

The continuous alchemical transmutation of jing, qi, and shen transcends the idealist-materialist split. This is mirrored in major Daoist classics (Yijing and Daodejing), which emphasize Dao as process of eternal change, a bellows that is always emptying and filling (Ames, 1998, 2003). There is no boundary line between spirit and matter in Dao cosmology. Alchemy's primary purpose is to make conscious and substantial the presence of spirit within matter and vice versa. The issue is not "phenomena are controlled by divine forces" beyond modern science, but rather a practical problem: how can human develop the ability to measure and responsibly shape those subtle forces?

Alchemy: Marriage of Scientific and Religious Imagination

Daoists view the qi field as alive and responsive to human need. Qi sciences focus intent and cause the qi field to respond more quickly and tangibly to our needs. Is the same principle operative in material science? Physicists spent decades focusing their imagination on finding subatomic particles, and they got their need satisfied when the particles finally appeared for a nano-second.

Physicists later gave up on finding the "ultimate particle" and are now focused on the ineffability of dark matter. But did inserting a \$5 billion dollar particle accelerator into the process simply amplify the imagination of the scientists, thereby conjuring up the particles, rather than prove their permanent existence?

Is the imagination of a qi scientist and Western scientist fundamentally different? The most interesting aspect of quantum physicists are their dynamic imagination, their continual cosmological reinvention of the universe. Both sciences dream up new experimental processes and invent new ways to manipulate their version of polarity and the five fundamental forces of nature. Likewise, the experimental nature of Daoism produced thousands of different qigong forms, many schools of neidan and variants on cosmology.

At root, both sciences are ways to methodically accelerate the power of human imagination, but focused on different outcomes. Alchemical science is the marriage of scientific imagination with religious imagination, and the new Science of Consciousness in the West is cautiously following in its footsteps.

Historical View: Alchemy & Science, Neidan & Waidan

A global study of myth reveals metallurgical alchemy was humanity's first science. Historically alchemy preceded the development of organized big religion and much later it paved the way for modern day material science. All modern technology can trace its roots back to the metal workshops of laboratory alchemists. Alchemy was historically present in every major society on every continent (Eliade, 1962). In China, the conventional thinking is that waidan, external alchemy, laid the groundwork for modern neidan in the 10th century, as well as for numerous scientific discoveries like gunpowder. But there is extensive evidence that the functional principles of inner alchemy were practiced by Taoists long before laboratory alchemists fired up their cauldrons (Roth, 1991, 1999).

Alchemy consumed far more of Isaac Newton's time and writings than his *Principia Mathematica*. It was his obsession with alchemy that led to his postulating the laws of gravity. Newton died still believing Nature's physical laws were dependent on a higher spiritual force. Sir Robert Boyle, the father of modern chemistry, was likewise a life long laboratory alchemist. Psychology was similarly influenced. Karl Jung spent the last fifteen years of his life obsessively trying to crack the codes of obscure alchemy texts to discover the mechanism for how the mind transforms its light and shadow sides.

Modern science has already mastered external alchemy by force rather than the traditional persuasion. It can bombard lesser metals to cause them to lose enough electrons to become gold. But this has little relation to internal alchemy, the science of communicating and cooperating with the inherent intelligence within matter in order to ignite its creative spark.

The Science of Consciousness has taken at least a half step in this direction. Looking back from the distant future, we may see that alchemical science merely veered towards extreme materialism (as a form of external alchemy) for a hundred years before resuming its original alchemical pursuit of reclaiming and refining the spirit hidden within matter, and the matter hidden within spirit. Already there is discussion within the field of quantum physics and relativity as to whether this kind of material science has evolved as far as it can go, bound by its strict interpretations of materiality separated from consciousness.

The viewpoint and aspirations of Daoist inner alchemy embraces, yet goes well beyond the limits of laboratory alchemy turning lead into gold, or Jungian “psychic alchemy” turning negative emotions into positive ones. Qi science posits a direct relationship between the alchemical adept and ALL the forces of the cosmos, achieved by cultivating the medium of qi within the body of the adept. Just as historically this inspired the development of both religion and science, it seems likely

Conclusion: Imagining the Future of Science

The function of science is not to verify knowledge of some pre-existing reality, whether we call it Nature or Divine. Rather both qi and material sciences exist to amplify the human imagination in creating new realities. Scientific methods crystallize the expression of human free will by giving consciousness a more substantial form.

Material science, although young, has been wildly successful and adopted globally because its technological applications allow our imagination to produce whatever tangible material benefit we dream of having. We could say that the human religious imagination, judging by the variety and prevalence of religions across the globe over thousands of years, has been equally successful in producing communities around an “intangible result or faith”.

Qi science, by contrast, has kept a much lower profile, but historically the alchemical imagination is the oldest of the three types of imagination. Internal alchemy in particular has developed and tested over many millennia a body-centered technology that initially directs the imagination to the interior. It is not enough to merely know techniques; the adept must align and merge with elemental forces flowing within and without to be successful.

Qi science makes more tangible the feeling of our authentic inner self, promotes healing, and expands our consciousness to create new realities in multiple dimensions of time and space. Qigong and neidan are designed to empower our spiritual virtue and unfold our highest destiny, which is ultimately

self-realization of the immortal nature of consciousness itself. Imagination could be defined as the expression of “self” as it realizes it is born from the larger field of eternal consciousness and has mysteriously been given free will to create within that field.

The religious and scientific imagination are slowly converging in a new Western Science of Consciousness, aimed at finding systematic ways of improving inner life. Qi science methods, being much older, are far more advanced than Western science in their ability to empower human beings and holistically integrate body, mind, and spirit.

We could rephrase this, and say that the imagination of Daoists is far more mature than the imagination of Western consciousness scientists. Dao science has already achieved its Grand Unification Theory of five fundamental forces and a path for harmonizing the three heavens. It has identified the medium of consciousness, and has more skill in working at a distance, in measuring subtle changes in humans, and in integrating morality into its science.

Daoist Qi Science has been developing applications of its yin-yang and five phase theory in many fields of Chinese culture. These “soft qi sciences”, like the soft sciences in the West of psychology, sociology, and economics, are subject to wide range of speculation and interpretation. In China they include Chinese medicine (perhaps the most substantive), qi healing, feng shui, astrology, city planning, military strategy, nutrition/diet and calendrical forms of prediction, philosophy, cosmology and metaphysics.

Daoist qi science terminology already permeates Chinese culture, so it is already deeply embedded in their racial modes of thinking and perceiving. In this sense it is applied to everyday life by billions of people, who, for example, will speak of “hot qi quality of ginger” before cooking and infusing it into their food.

Contemplative neuroscience is essentially dependent on existing qi sciences, if we expand the term to include other Asian spiritual methods. It relies wholly for its data upon meditators already skilled in qi sciences of different Asian traditions. It is unknown at this stage how or if objective measuring instruments of material science will benefit qi science or help its practitioners.

Benefit to qi science is more likely to come from the power of western-style scientific imagination that Western Daoists bring to bear as they extract and integrate qi science into their new culture. This could bring new applications of qi science in psychology, medicine, sports, longevity science, social planning and possibly influence quantum scientists in making new discoveries about the nature of consciousness that are needed to keep quantum theory evolving.

Western Daoists may ultimately inspire the unification of the Western religious and scientific imagination into a dynamic new culture and a new alchemical science that has not yet been imagined. This new science may evolve to become more “real” than either traditional Daoist qi science or current Western material science. It all depends to what extent it fires the alchemical imagination of those who practice it.



photo: special thanks to my main translator and guide, Rachel Sun, standing here flanked by flags of the many nations attending the conference.

Contact Info

Wishing that all fully harness the power of their imagination in 2010,

Michael Winn

"Who takes Heaven as his ancestor, Virtue as his home,
the Tao as his door, and who becomes change -- is a
Sage." -- Chuang Tzu, Inner Chapters

"The Tao is very close, but everyone looks far away.
Life is very simple, but everyone seeks difficulty."
-- Taoist Sage, 200 B.C

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