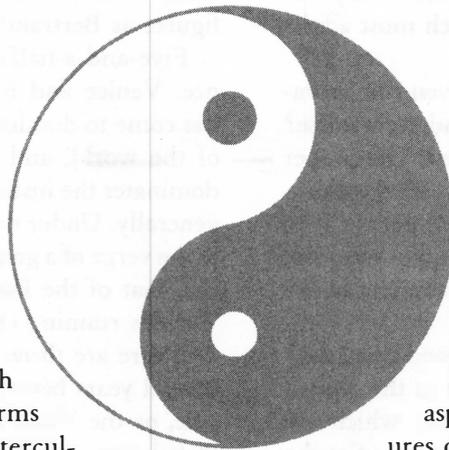


The Taoist Perversion of Twentieth-Century Science

by Michael Billington



It is generally recognized that the cultural collapse in the West since the unfolding of the rock-sex-drug counterculture in the 1960's has been heavily doused with Zen Buddhism, Taoism, and other forms of "Chinese Mysticism." As the counterculture of the 1960's and 1970's became increasingly accepted as the "established" popular culture of the 1980's and 1990's, these exotic and esoteric ideologies contributed to the emergence of the irrational cult of "environmentalism" as the dominant paradigm of society and government. The view of man as a rational being in the image of God, defined by his creative capacity to scientifically transform and advance his environment through higher-order technologies, has been largely replaced by the view of man as a mere beast, subject like any beast to the relative scarcity of resources available to a fixed level of technology.

Why has the scientific community not provided society with a thorough refutation of this perverse misconception of human creative potential? Why have such obvious frauds as "global warming," or the "ozone hole," been tolerated, or even sponsored, by many scientists who ostensibly received a level of education adequate for them to know better? Why have scientists tolerated or joined in the witchhunt against the most exciting potential breakthrough in both theoretical and applied physics, the "cold-fusion" discoveries? The answer lies in the decay of the scientific establishment itself over the course

of the Twentieth Century—especially since the famous confrontation at the Solvay Conference in 1927.

We will examine this problem by focussing on one particularly vulnerable aspect of the ideology of several leading figures of Twentieth-Century science: the adoption of Taoist forms of mysticism as a justification for the irrational rejection of causality and coherence in the physical sciences. We will demonstrate two aspects of this: first, that behind this adaptation of Taoism is an intentional effort by these circles to destroy the only fruitful school of scientific inquiry throughout the course of history, that identified with the method of the "hypothesis of the higher hypothesis" of Plato, Nicolaus of Cusa, Kepler, and Leibniz; and second, that the use of Taoist ideology constitutes a distortion of the true moral and scientific tradition of China associated with Taoism's enemy, Confucianism. As this distortion has been introduced back into China, it has further undermined the scientific tradition there by lending the false label of "Western Science" to the in-fact Taoist/Alchemist mystical worldview.

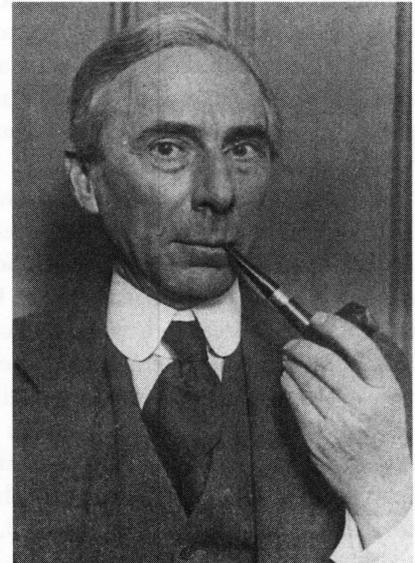
We will investigate the physicists of the Copenhagen School—with emphasis on Niels Bohr and Wolfgang Pauli—and the British eugenicists and holist biologists, in particular, Joseph Needham. In each case, the gnostic, Taoist views of these men can be traced to Bertrand Russell, considered by many to be the most evil man of the Twentieth Century. Not coincidentally, Russell had been deployed to China by the British oligarchy in the 1920's to counter the republican movement of Dr. Sun Yat-sen, where he had played a crucial role in the creation of the Communist Party of China.

Decades before his deployment to China, Russell had

Political prisoner Michael Billington's "Toward the Ecumenical Unity of East and West: The Renaissances of Confucian China and Christian Europe," appeared in the Summer 1993 issue of Fidelio.

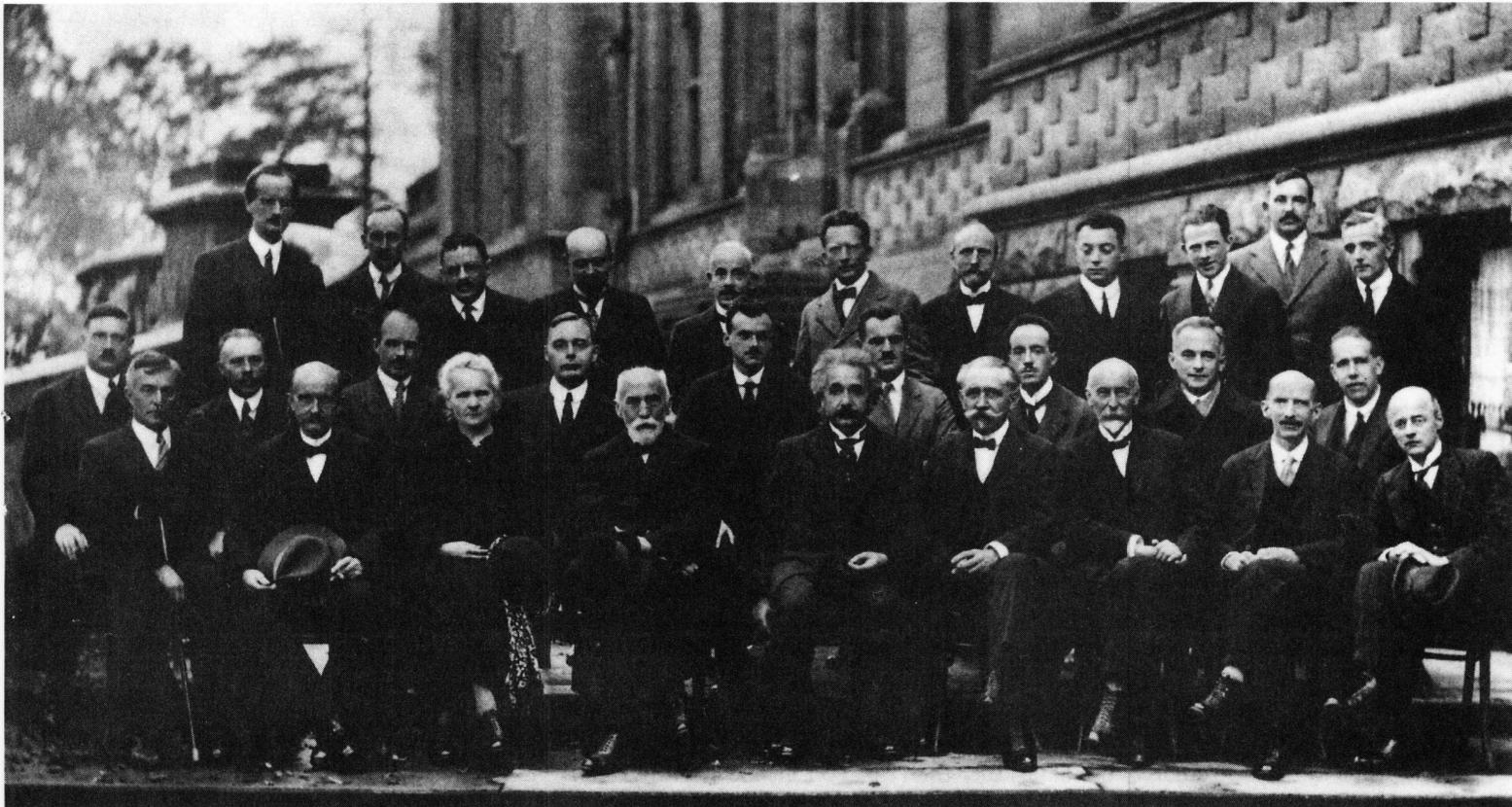
already distinguished himself as the leading philosophic apologist for the empiricist cult of logical positivism, as well as the racist eugenicists around Julian Huxley, who were building a global race-science movement. His 1900 book, *A Critical Exposition of the Philosophy of Leibniz*, established the battle lines for the British empiricists and geopoliticians against the Platonic school of Christian science and economics represented by Johannes Kepler and Gottfried Wilhelm Leibniz, and in the Nineteenth Century, by Georg Cantor and Bernhard Riemann. Russell's 1920 trip to China, and his book, *The Problem of China*, served to direct the Chinese intellectuals of the post-World War I period, who were enraged by the British sell-out of China at Versailles, toward the ideology of British free trade, Marxist-Leninist political policies, and various New Age libertarian dogmas. Russell blamed China's backwardness on the Confucian moral tradition, without mentioning the previous sixty years of British importation of opium

and looting of the Chinese economy. In fact, he openly espoused the racist, colonialist notion of the "noble savage," against a 3,000-year-old Chinese nation which had, before the Golden Renaissance, surpassed Europe in many aspects of science and culture. While denouncing the moral and intellectual teachings of the Confucians, he heaped praise on the opposite, passive, mystical tradition of Taoism. Revealing both his racist outlook and his intention to prevent the development of science in China, Russell wrote: "Progress and efficiency make no appeal to the Chinese, except to those who



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Bertrand Russell (right), who visited China in 1920, argued against scientific progress and in favor of the passive mysticism of Chinese Taoism. Below: The 1927 Solvay Conference of the world's leading scientists saw fierce debates over whether the physical universe was organized lawfully. Seated, front row: Albert Einstein (center), Max Planck (second from left), Madame Eve Curie (third from left); second row: Niels Bohr (far right), Max Born (second from right), Louis de Broglie (third from right); standing: Werner Heisenberg (third from right), Wolfgang Pauli (fourth from right), Erwin Schrödinger (sixth from right).



Inst. International de Physique Solvay, Courtesy AP Emilio Segrè Visual Archives

have come under Western influence. By valuing progress and efficiency, we have secured power and wealth; by ignoring them, the Chinese, until we brought disturbance, secured on the whole a peaceable existence and a life full of enjoyment.”

Most importantly, Russell conveyed to the Chinese his own warped view of Western science and philosophy, such that an entire generation of Chinese youth were taught that the development of science and physical economy in the West was entirely due to British empiricism and the free trade economics of Adam Smith, without a mention of the Platonist roots of European (and American) science and physical economy as represented by the work of Gottfried Leibniz.

Russell's initial attack on China was developed by the British holist biologist Joseph Needham. Needham, a member of both the British Royal Society and the Communist Party of Great Britain in the 1930's, decided in the middle of his career to become a China scholar. Over the following decades he compiled an encyclopaedic collection of detailed studies of the scientific history of China, published in multiple volumes as his *Science and Civilization in China*, which is still being extended today. Needham's role in falsifying the philosophic and scientific history of China is broadly recognized, but nonetheless his work remains the standard both in the West and in China itself. We will examine his overt distortion of the classical tradition of Confucian scholarship and his glorification of Taoist alchemy and mysticism.

Taoism and Modern Physics

In 1947, Niels Bohr was granted the Order of the Elephant by the Danish Crown, for his work in the development of quantum mechanics and his service to Denmark. In designing a coat-of-arms for the occasion, Bohr chose the ancient symbol of Taoism, which portrays a fundamental, irreconcilable but “harmonious” duality to the universe and to human existence, known as the Yin and Yang, whereby the “seed” of anything is contained within its opposite [SEE illustration, page 90]. Above this symbol, Bohr placed the words: “Contraria sunt complementa”—“Opposites are complementary.” Bohr thus equated, correctly, his famous concept of “complementarity” with the Yin and Yang mysticism of the Taoist cult of ancient China.

Bohr's concept of complementarity arose in the context of the discovery of quantum phenomena in light and in atomic interactions during the first quarter of the Twentieth Century. In 1901, Max Planck discovered that energy was radiated in discrete quanta, rather than in a continuous flow, as had been previously understood in electro-

magnetic theory. Albert Einstein showed in 1905 that light also radiated in quanta, or photons. This contradicted the well-known wave nature of light, demonstrated by the interference and diffraction patterns of light propagation. Werner Heisenberg, in 1927, added that in the investigation of these sub-atomic wave and particle phenomena, the observation itself disrupts the phenomena, such that the determination of the particle's (or “wavicle's”) location renders its momentum indeterminate, and *vice versa*; this was called the “Uncertainty Principle.” Bohr then asserted that, because of the wave/particle duality and the Uncertainty Principle of Heisenberg, we must discard the principle of causality in physics, but retain the mechanics of Newton and Maxwell to describe the experimental results observed on each side of the dichotomy. This rejection of any new theory, was declared to be itself a new theory. As Bohr said:

Indeed, the spatial continuity of our picture of light propagation and the atomicity of the light effects are complementary aspects in the sense that they account for equally important features of the light phenomena which can never be brought into direct contradiction with one another, since their closer analysis in mechanical terms demands mutually exclusive experimental arrangements. At the same time, this very situation forces us to renounce a complete causal account of the light phenomena and to be content with probability laws based on the fact that the electromagnetic description of energy transfer [i.e., classical mechanics—MB] remains valid in a statistical sense. (*Light and Life*, 1932)

Man's knowledge is reduced to a pure empiricism, where all we can know is what we observe, and all knowledge is ultimately reducible to probability statistics.

Bohr repeatedly insisted that his quantum mechanics did not overturn “classical physics,” but that the physics of Newton and Maxwell were special cases of his broader theory, where the field of investigation was sufficiently large that quantum effects were insignificant. But it must be noted that Bohr's reference to “classical physics” in all cases refers only to the empiricist tradition of Newton and Maxwell, and not to the opposing tradition of Platonists such as Johannes Kepler, G.W. Leibniz, Carl Friedrich Gauss, Bernhard Riemann, and Georg Cantor, who contributed every significant discovery of modern physics, and whose works were in general distorted and misunderstood by the efforts of Newton and Maxwell to “system-ize” them. Bohr's Copenhagen School, in fact, was a continuation of the empiricist approach of the Newtonians; and given the now-famous occult beliefs and practices of Sir Isaac Newton, it will perhaps be no surprise to see the extreme occultism of, especially, Bohr's

most intense defender, Wolfgang Pauli. But it is first necessary to review the history of the conflicting Chinese schools of philosophy.

Taoism and Confucianism

In ancient China, as in the development of civilizations in every part of the world, there were two schools of thought that emerged as man began to investigate his environment. There were those who viewed the heavens and believed that the wondrous geometry that revealed itself in the rotational motion of the stars served as a textbook in which man could discover the laws of Creation and the related social laws necessary for peace and development among men. In China, such was the School of the Scholars, known to the West as Confucianism after the great sage Confucius (551-479 B.C.), who compiled previous writings and contributed his own ideas to this moral and scientific tradition.

When asked by his disciples how they could carry on after his death, Confucius answered:

Look to the Heavens. What do they say?
The seasons run their appointed course,
And all things proceed according to their nature.
Look to the Heavens. What do they say?

Investigations by several leading European scientists in the Eighteenth and Nineteenth Centuries determined that Chinese scholars had developed an advanced knowledge of the motions of the heavens by at least the Third Millennium B.C. The *History Classic*, one of the books compiled and edited by Confucius, contains precise descriptions of the stars appearing at specific times of the solar calendar. By mapping those readings against the 26,000-year astronomical cycle known as the Precession of the Equinoxes, these European astronomers were able to date the writing of the *History Classic* to the Twenty-fourth Century B.C. Gustave Schlegel, whose *Uranographie Chinoise* of 1875 is acknowledged as having been the most advanced work in the field well into the Twentieth Century (even by his detractor Joseph Needham), proved in addition that Chinese astronomers had predicted solar eclipses in the Twenty-second Century B.C., about two thousand years earlier than similar developments in the West. Schlegel even discovered evidence in the Classics that significant astronomical readings were being recorded in the Seventeenth Millennium B.C.!

Needham, in keeping with the British reconstruction of history, labelled these findings "quite absurd," and "purely legendary," lying that Schlegel and others had lit-

tle support and that they "served to discredit what real historical research might reveal." In any case, claimed Needham, if such knowledge had existed in the Third Millennium B.C., it could only have been "derived from Babylonian sources." Needham exudes similar rage at the results of the Seventeenth-Century collaboration of the Jesuit missionaries and their Chinese astronomer allies. "The fabulous datings," he protests, "accepted by the early Jesuits, seem to be ineradicable from Western literature." At no point does Needham attempt to provide evidence against these discoveries of antiquity, other than one weak argument that the charting of the critical stars may have been at a different time of day than commonly believed, but he admits this is conjectural. We shall see why Needham, and the "Taoists" of European science, believed it necessary to discredit the actual scientific tradition of China's scholars, just as they tried to discredit the Christian Platonic tradition in Europe, especially that of Kepler and Leibniz.

Opposed to this scholarly, Confucian school were those who insisted that the Heavens were not meant to be understood but, at best, observed in order to assist in soothsaying and divination. This mystical view devolved into the Taoist movement associated with Lao Tzu (Sixth Century B.C.) and Chuang Tzu (Fourth-Third Century B.C.). The writings of Lao Tzu, the *Tao Te Ching*, begins: "The Tao (Path or Way) that can be known is not the true Tao." An alternative translation is "The Tao (Path) that can be trodden is not the true Tao." In either form, the message is that the Ultimate, or the True Way of the Taoists, is not intelligible to man and cannot, in fact, be followed by man as a conscious act, but only submitted to as a mystical flow of nature.

The Confucians also refer to the Tao, but as The Creator of the Universe, and as the way of truth which man must follow through wisdom. Mencius (372-289 B.C.), whose works, together with those of Confucius, constitute the fundamental texts of Confucianism, said that the Tao of Heaven is that of perfect truth and sincerity of will, while the Tao of man is precisely to use his Heaven-granted power of reason to increasingly discover this truth and achieve this sincerity of will (*Mencius*, 4, 1, 12). Like the Augustinian Christian concept of God, the Tao of Confucianism can never be known in its completeness, since it is infinite. But, unlike the Taoists, the Confucianists perceive no limit to man's increasing knowledge, and no mystical, unbridgeable gap between man and his knowledge of the Tao. Confucius, in describing his own development as a sage, said that at the age of fifty he understood the mission of heaven, and at seventy he could follow his own will without violating natural law (*Analects* 2, 4).

This ennobled view of man's potential was predicated on the belief that man was born fundamentally good, owing to the virtues granted by Heaven to every child. Foremost among these virtues was that of *jen* (仁), translated usually as benevolence or humaneness, a notion very close to that of *agapē*, the profound love of truth and of mankind as a whole which St. Paul presented as the highest form of love. Embedded in this *jen* are justice, propriety, and the capacity for wisdom (*Mencius*, 6, 1, 6). Together, these virtues characterize the nature of man, a nature which closely parallels the Christian notion of *imago viva Dei*, man created in the living image of God.

To the Confucians, there was no distinction between the advancement of scientific knowledge and the development of the moral qualities necessary for the organization of society. Besides astronomical studies, the government (which was generally composed of scholars who had passed state examinations based on the Classics) was responsible for the research and development of hydraulics and agronomy to assure the successful expansion of agriculture. Perhaps the best example of the opposite approaches to science and technology taken by the Confucians and the Taoists, is the famous passage from the Taoist Chuang Tzu, who imagines a meeting between a disciple of Confucius and a Taoist peasant who is scooping water with a cup to irrigate his field. The Confucian says: "If you had a machine here, in a day you could irrigate one hundred times your present area. The labor required is trifling as compared with the work done. Would you not like one?" He describes a well-sweep, whose foot-driven pulley with wooden scoops lifts water from an irrigation ditch. The Taoist peasant denounces him, insisting that one who is cunning with instruments must also have a scheming heart, cannot be pure and incorrupt, and is thus not a fit vehicle for the Tao. "It is not that I do not know of such things," he says, "I should be ashamed to use them" (Chuang Tzu, 12).

This proposal of the Confucian, which Chuang Tzu mocks, is an early expression of a true science of physical economy, where the principles of nature are transformed through machines into means for increasing the productive powers of labor, and thus expanding the population potential. We also see, in this Taoist peasant hero, that the environmentalist fanaticism which has contributed so much to the breakdown of civilization today, is nothing new. In fact, the embrace of Taoism by the Twentieth-Century scientists led inexorably to the current anti-scientific cultism typified by the "global warming" hoax, the "ozone hole" hoax, and the genocidal policies adopted by governments and world bodies in the service of these concocted frauds.

The Taoist 'Invisible Hand'

Taoism's central tenet is *wu wei*, which is translated "non-action." This is not the literal non-action of ascetic meditation, but rather, it means that one should do nothing purposeful, nothing which is not in keeping with the mystical, unknowable flow of nature, the Tao. This is (not accidentally) precisely the notion applied to economics by British East India Company agent and occultist Adam Smith. Smith's free trade dogma of *laissez faire*, allowing the "invisible hand" to guide the "magic of the marketplace," could be called the *wu wei* of the British Empire. Just as this "invisible hand" was quite visibly dealing opium, stealing food and raw materials, and waging war against any opponents of such "freedom," so the Taoist ideology served as the basis for suppression and control by tyrants throughout Chinese history.

The foremost such tyrant was the Emperor Ch'in Shihuang, founder of the Ch'in dynasty (221-206 B.C.), the idol of Mao Tze-dung, who banned scholarship, burned the Confucian texts, and buried alive the Confucian scholars who resisted. Taoism served the Ch'in dynasty as a folk-religion for pacification, together with the dictatorial "Legalist" doctrine of state power. Technology was to be tolerated only to the extent necessary to maintain military superiority over a backward people, while science was replaced by alchemy, to such purposes as discovering the "fountain of youth" for the emperor. Lao Tzu said: "The more implements the people have to add to their profit, the greater disorder is there in the state and in the clan" (Lao Tzu, 57). Chuang Tzu adds: "Every addition to or deviation from nature detracts from the ultimate perfection of all" (Chuang Tzu, 8).

This brutal conception of man as a mindless beast is captured in a passage from Lao Tzu which both Chuang Tzu and Joseph Needham considered among their favorites:

- Banish wisdom, discard knowledge and the people will be benefited a hundredfold.
- Banish benevolence, discard righteousness, and the people will be dutiful and compassionate.
- Banish skill, discard profit, and thieves and robbers will disappear.
- Banish learning, and there will be no more grieving.

The other fundamental concept of Taoism is the cult of Yin and Yang, which is associated with the use of the *Book of Changes* (*I Ching*) as a tool of divination. This is a concept much admired by both the founders of quantum mechanics and the holist biologists. The terms Yin and Yang merely refer to opposites in nature: light and shadow, positive and negative, masculine and feminine, etc.

But in the hands of the Taoists, they became a mystical unity of opposites and a declaration of moral relativism, denying the existence of universal moral standards. The Yin and the Yang are in continual cyclical motion, first one dominant and then the other. The seed of Yin is in the Yang and *vice versa*, as indicated by the dots in either side of the symbol [SEE illustration, page 76]. Most importantly, good and evil, right and wrong are also subject to the law of Yin and Yang. Chuang Tzu said: “Take no heed of time, nor of right and wrong” (Chuang Tzu, 2). Also: “If we say that anything is good or evil because it is either good or evil in our eyes, then there is nothing which is not good, nothing which is not evil. Those who would have right without its correlative wrong, or good government without its correlative misrule—they do not apprehend the great principles of the universe.”

This moral relativism is the same as the gnostic “Power of Light” and “Power of Darkness” ideology present in the West in Rosicrucianism and Freemasonry. As we will see, it is this aspect of Taoism which was most praised by Joseph Needham as the essence of a truly “scientific” view of the universe.

Confucians acknowledged the obvious existence of opposites in the material world, but firmly rejected moral relativism in regard to the nature of things, especially in regard to the moral nature of Man. Mencius identified the nature of man as the virtue *jen* (*agapē*), provided to him by Heaven. While evil may be seen as the absence of the good, in no way could the good be seen as merely the absence of evil. The good, like Heaven itself, is self-generative, and it is precisely this quality which makes man uniquely capable of participation in the unfolding creation.

Niels Bohr and The Occult

How, then, did eminent scientists such as Bohr and Wolfgang Pauli come to embrace such an immoral, anti-scientific dogma as Taoism? It was consistent with their gnostic worldview. This consistency can be demonstrated in their obsessive effort to extend their theory of “complementarity” in atomic physics into an all-inclusive worldview.

Bohr was raised in Copenhagen in the circles of the philosopher Harold Høffding, a follower of the British philosophical radicalism of Jeremy Bentham, J.S. Mill, *et al.* His father, a physiologist and a “free thinker,” was a close friend of Høffding, and young Bohr and his brother were members of a small group of Høffding’s special students. Bohr’s maternal grandfather, D.B. Adler, founded

one of Denmark’s leading banks after earning his fortune as a banker in London. Allied with Adler was the founder of Carlsberg Breweries, I.C. Jacobsen, whose son Carl became an ardent follower of the Theosophist mystic Madame Blavatsky. The Carlsberg Foundation, together with the Rockefeller Foundation, were to be the primary sponsors of Bohr’s career and of the Bohr Institute in Copenhagen. Bohr began his career in England in 1911 on the first of many Carlsberg Foundation grants.

When the discovery of the quantum effects and the wave-particle dichotomy demonstrated the inadequacy of classical mechanics, scientists such as Einstein, Louis de Broglie, and Erwin Schrödinger perceived this as an opportunity to hypothesize and investigate a new set of axioms to embrace the newly discovered phenomena. Bohr, on the other hand, insisted that there was no conceptual problem requiring solution; rather, there was an inherent irrationality in nature itself. Causality, he argued, did not hold at this level—determinism must be scrapped. (Bohr’s rejection of “determinism” is not limited to a rejection of the “*Deus ex machina*” of Descartes, but includes any notion of causality whatsoever. Wolfgang Pauli, who considered himself the primary “defender of the faith” of acausality, even criticized Bohr in the 1950’s for wavering on this issue.)

Rather than questioning our understanding of the nature of matter, Bohr asserted that this nature was unknowable. In his 1955 essay “Atoms and Human Knowledge,” Bohr attacked those who argued that his “complementarity” theory was an excuse for not solving the problem. He wrote, “The view has been expressed that the statistical mode of description must be regarded as a temporary expedient which, in principle, ought to be replaceable by a deterministic description. The thorough discussion of this question has, however, led to that clarification of our position as observers in atomic physics which has given us the epistemological lesson [of acausality and non-determinism].”

The One and The Many

Bohr acknowledged that his theory denied the existence of a solution to the ancient problem of the One and the Many, implicitly solved by Plato in the *Parmenides* dialogue. Philosophically, the solution of the problem lies in recognizing the creative power of the sovereign individual mind as the efficient cause of change in the physical universe through, in particular, the discovery and dissemination of new scientific principles. Bohr, to the contrary, insisted that man, as part of the universe, is inherently incapable of understanding the laws of the universe. Here Bohr turns to Taoism: “For a parallel to the

lesson of atomic theory . . . we must in fact turn to quite other branches of science, such as psychology, or even that kind of epistemological problem with which already thinkers like Buddha and Lao Tzu have been confronted, when trying to harmonize our position as spectators and actors in the great drama of existence" (*Biology and Atomic Physics*, 1937, the year of Bohr's only visit to China). Bohr denied any accommodation to mysticism, but then defended the extension of his own acausal theory to other fields: "The straightforward solution of the unexpected paradoxes met with in the application of our simplest concepts to atomic phenomena might . . . help us to clarify conceptual difficulties in other domains of experience."

Here Bohr reveals his gnostic prejudice, arguing, like Kant, that creativity cannot be made intelligible to human consciousness. Bohr says that any attempt to reflect on the creative process of the mind must, as in the case of observing atomic phenomena, alter the "mental content" under investigation. Thus, any theory of knowledge must "begin and end with a renunciation as to explaining our own conscious activity" (*Light and Life*, 1932). Further, he argues (with Aristotle) that consciousness only results from "residual impressions in the organism, amounting to an irreversible recording in the nervous system." If creative thought takes place in the subconscious, Bohr says: "The impossibility of providing an unambiguous content to the idea of subconsciousness corresponds to the impossibility of pictorial interpretation of the quantum mechanical formalism" (*Unity of Knowledge*, 1954).

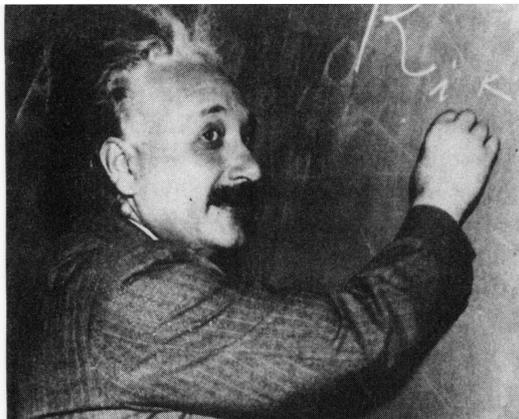
Bohr recognized the implications of this worldview for society, aligning himself with those who, like Locke, assert that justice and charity are ultimately incompatible: "It must be recognized that any occasion which calls for the strict application of law has no room for the display of charity and that conversely, benevolence and compassion may conflict with all ideas of justice" (*Unity of Knowledge*). This is a rejection of the Christian (and Confucian) notion that justice and charity are impossible without each other. Bohr's view is, in fact, precisely the basis for the Taoist/Legalist state in China, and the Lockean "social contract" concept of British law, whereby man gives up his sovereign will to the power of the state.

If, for Bohr, science is beyond intelligibility, then art is pure magic and fantasy. "Literary, pictorial, and musical art may be said to form a sequence of modes of expression, where the ever more extensive renunciation of definition, characteristic of scientific communication, leaves fantasy a freer display" (*Unity of Knowledge*). It is not surprising that, although nearly all the scientists who worked on the new atomic physics were Classical musicians, who often would play chamber music in the

evenings, Bohr was never able to do more than "beat time," according to his biographer Niels Blaedel.

Before discussing the more overtly occult work of Bohr's strongest supporter, Wolfgang Pauli, it should be mentioned that Bohr was not satisfied with merely presenting his Taoist "non-solution" to the fundamental problems of physics, but he also expended enormous energy on destroying the efforts of those who dedicated themselves to discovering an actual solution to the particle-wave paradox. The most famous example can be seen in his debate with Albert Einstein, who insisted that the universe could not be governed by chance—that "God doesn't shoot dice." Bohr refuted Einstein's flawed attempts to present a "unified field theory" at the famous 1927 Solvay Conference of the world's leading physicists (SEE illustration, page 77). The statistical analysis of the probabilities of atomic phenomena, presented by Bohr and Heisenberg, provided a pragmatic structure which "worked" to a certain extent in describing empirical results. This "Copenhagen School" won the day, and even the best of the scientists capitulated. Louis de Broglie, a collaborator of Einstein, presented an alternative hypothesis to Bohr at the 1927 Solvay Conference, attempting to integrate the particle and the wave. When the Copenhagen School and the institutional power behind it mobilized against de Broglie, he, in the words of his collaborator Philippe Guéret, "recognized that the theory of quantum mechanics was gaining ground, and resigned himself to teach the theory that had won out over his own conceptions of the wave-particle duality" ("Reviving de Broglie's Wave-Particle Synthesis." *21st Century Science & Technology* Vol. 6, No. 3, Fall 1993, p. 44). For twenty-five years, de Broglie taught the method he knew to be false, but finally, in 1952, returned to research on his original ideas. De Broglie considered the post-1926 developments in quantum mechanics to be "a virtual *coup d'état* in theoretical physics," according to his collaborator in later years, Georges Lochak (as quoted in Uwe Parpart, "The Theoretical Impasse in Inertial Confinement Fusion," *Fusion*, Vol. 3, No. 2, Nov. 1979, p. 30).

Even worse is the case of Erwin Schrödinger, one of the best scientific minds of his era. Schrödinger's 1926 discovery of fundamental wave equations which describe the motion of electrons was based, he said, on the "de Broglie-Einstein undulation theory of the moving corpuscle according to which the latter is nothing other than a kind of 'foam crest' [*Schaumkamm*] upon the wave radiation constituting the fundamental world-principle" (as quoted in Parpart, *ibid.*). His so-called ψ -wave describes a wave which carries with it a "particle" possessed of mass, anticipating the later discovery of solitons in plasma physics and hydrodynamics, which are metastable structures that form within plasmas under certain condi-



Brown Brothers

Below: Werner Heisenberg (left) and Niels Bohr. Insets: left, Albert Einstein; right, Louis de Broglie; bottom, Erwin Schrödinger.



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AIP Meggers Gallery of Nobel Laureates



Francis Simon, courtesy AIP

tions. His work explained the stationary states of electrons in the atom, and was shown to be analogous to the “purely mathematical” statistical, probabilistic methods of Heisenberg’s matrix mechanics.

Schrödinger himself never considered his “ ψ -function” theory to be complete, since it implied a higher-order process which gave rise to the “particle-like” phenomena in the wave, but this higher-ordered conception was yet to be worked out. Bohr found it convenient to use Schrödinger’s discovery in his quantum mechanics, while insisting that such a higher-order conception was “neither possible nor required” (*Unity of Knowledge*). In a famous episode acknowledged even by Bohr’s admirers as a brutal personal attack, Schrödinger was brought to Bohr’s institute in Copenhagen, and, despite an illness which kept him bedridden, was subjected by Bohr to an incessant harangue against his incomplete hypothesis, until Schrödinger reportedly gave in.

In the article referenced above, Parpart emphasizes that Schrödinger, following Riemann and Leibniz, recognized that the nature of the particular (such as the quanta

of action or the “particle” emerging from non-linear phenomena in the continuum) is determinate, not in a Newtonian, mechanistic fashion, but by the lawful ordering of the continuum as a whole. Lyndon LaRouche, in his August 1992 *Cold Fusion: Challenge to U.S. Science Policy* (Science Policy Memo, Schiller Institute, Washington, D.C.), made a similar point, following Riemann: “Without the ability to derive a discrete manifold, and its metrical characteristics, from nothing more than a continuous manifold, and to accomplish this in an ordered way, the development of a valid, integrated, comprehensive mathematical physics were an impossibility.” This concept of a quantized field was the root of Johannes Kepler’s great discoveries. Kepler recognized in the structure of the

solar system a harmonic correspondence to the Golden Section ratio which reveals itself in all life forms, as well as in the Platonic Solids and in the structure of the musical scale. It was more recently demonstrated that this Golden Section ratio is also the characteristic of the structure of the atom (Laurence Hecht, "Mysterium Microcosmicum: The Geometric Basis for the Periodicity of the Elements," *21st Century Science & Technology*, Vol. 1, No. 2, May-June 1988, pp. 18-30). Schrödinger anticipated this fact in 1926: "[T]he customary quantum conditions can be replaced by another postulate, in which the notion of 'whole numbers' merely as such, is not introduced. Rather, when integralness does appear, it arises in the same natural way as it does in the case of the node-numbers of a vibrating string. The new conception . . . strikes, I believe, very deeply at the true nature of the quantum rules."

Schrödinger is moving toward the idea of singularities in a quantized field, of the sort which Kepler, in showing that the locations of the orbits in the solar system were determined lawfully by the correspondence to the natural order of the series of inscribed Platonic Solids and of the musical scale, called the "Harmony of the Spheres." LaRouche has said on this question that our "primary concern is how relatively force-free pathways of action are defined, without prior regard for whether any sorts of 'forces' actually exist in our universe, or not. We must, first of all, discover what is the geometry of action in the universe in which we live" (*Cold Fusion*).

Schrödinger, however, in his debates with Bohr, did not fight for an understanding of a higher conception of the "geometry of action of the universe," but instead attempted to refute the existence of the "quantum jumps" in electron orbits which were anomalous in respect to classical mechanics. By clinging to the idea that the particle could be reduced to a physical wave, he wanted to "smooth over" the anomalies of quantum phenomena.

Had Schrödinger fully adopted the Platonic method as represented in the physics of Leibniz and Riemann, he would have seen the anomalous discontinuities as the most valuable point of investigation, the clue to a higher-order conception which subsumes the discontinuities in an intelligible manner. Bohr, of course, insisted that there was no intelligible model. LaRouche addressed this problem in *Cold Fusion*, in reference to the misunderstandings of the work of Riemann and Cantor by those who seek an "idealized continuity." What is required, he says is not "representations of a continuous substance, but a continuous pathway of action. It is not a continuum of continuous substances which we ought to seek, but a continuity of action" which includes singularities which are least-action or "force-free" pathways.

In regard to our primary subject, the Taoist perversion

of science, it is of interest that Erwin Schrödinger also investigated the philosophies of the East in his youth, but he took inspiration not from the mysticism of Taoism or the Indian Tantric and Buddhist traditions, but from the Vedas, the classical Sanskrit texts of Indian civilization, which, like the Confucian classics in China, presented the scientific and moral worldview of man as reflecting the creative power of the Creator. In a philosophical essay, "Seek for the Road," written at the peak of both his creative discoveries and the offensive against him by the Copenhagen School in approximately 1926, Schrödinger provided the following indictment of his age:

Slowly, almost unobserved, that part of ancient Indian wisdom, which the marvelous Rabbi had kindled to new flame beside the Jordan, flickered out; the light faded from the re-born sun of Greece, whose rays had ripened the fruits we now enjoy. The people no longer know anything of these things. . . . Crass, unfettered egoism is raising its grinning head, and its fist, drawing irresistible strength from primitive habits, is reaching for the abandoned helm of our ship.

Schrödinger protested that people believed they had found a "safe course in the field of pragmatic knowledge. . . . Then, it was Aristotelian philosophy, now it is modern science."

Schrödinger defended metaphysics against the pragmatists and empiricists who surrounded him. In reference to a current definition of science as "a description of facts, with the maximum of completeness and the maximum economy of thought," he said that this left him with a "cold clutch of dreary emptiness."

But over the years, Schrödinger also gave up his search, as demonstrated both in his science and in his philosophic writings. In 1960 he wrote an essay "What is Real?," in which he heaped praise on the leading Taoist of the age, the evil Bertrand Russell, as the "greatest mind of England." He succumbed to crass materialism, accepting Russell's "promising contribution that mental states are constituted from the same kind of elements as bodies, merely put together in a different way." And, despite his earlier renunciation of Aristotle and moral relativism, he concluded that everything we know of the external world we know only through sense perceptions—and everyone's "sense world" is different.

Wolfgang Pauli and C.G. Jung

But if Schrödinger succumbed to positivism and relativism, Bohr's associate Wolfgang Pauli led the charge toward an undisguised alliance between science and the

occult. Over a period of many years, Pauli collaborated with one of the central figures of the New Age attack on Western civilization and Judeo-Christian culture, the para-psychology guru C.G. Jung.

Pauli was born in Vienna in 1900. His godfather was the Viennese logical positivist Ernst Mach. Considered a young genius during his university days in Munich and at Göttingen, he made several contributions to the investigations of atomic structure during the 1920's, while working closely with Bohr and Heisenberg. In 1929, he quit the Church, and, suffering from a deep depression following a short, unsuccessful marriage, became a psychiatric patient of Jung between 1931 and 1933.

Jung had extended Freud's concept of man as a beast, controlled by the bestial passions, to a mystical extreme. Mankind, he said, was defined by a "collective unconscious" of irrational, primeval forces, beyond the power of reason, which revealed themselves only in dreams, fantasies, delusions, etc. These "archetypal images" define the true human being.

Jung had been fascinated from youth by Oriental mysticism. He eventually adopted the Taoist Yin-Yang notion that complementary opposites exist within each individual psyche, such as masculine/feminine, sense perception/intuition, and feelings/thinking. These opposites had to be balanced to achieve self-realization.

Pauli and Jung agreed that Bohr's concept of "complementarity," and "acausality" of the physical universe was the direct equivalent of Jung's Taoist psychology—in particular, with Jung's concept of "synchronicity." This led to the 1952 collaboration by Jung and Pauli on a book entitled *The Interpretation of Nature and the Psyche*. Jung's part of this astonishing tract entailed his only exposition on "synchronicity," while Pauli's part was an extended essay distorting the work of one of history's greatest scientific minds, Johannes Kepler, culminating in a defense of Kepler's enemy, the Rosicrucian alchemist Robert Fludd!

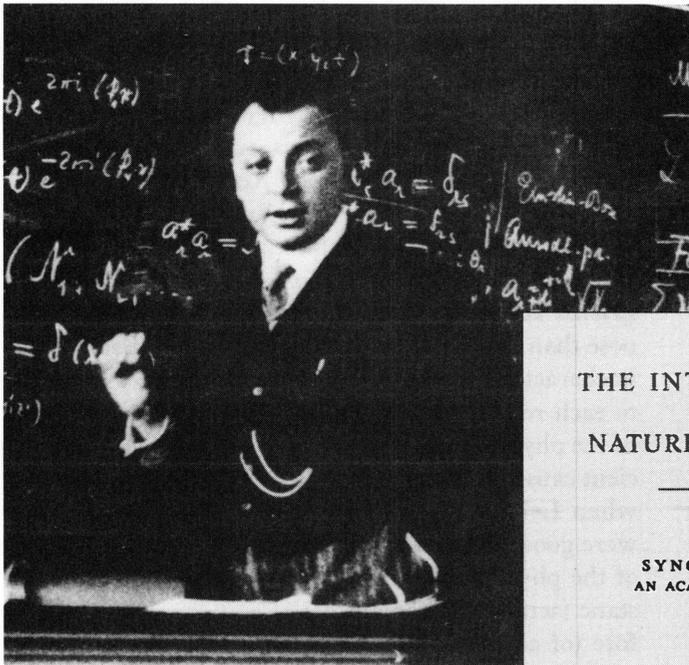
Because Pauli's Copenhagen School, together with the organizations formed around Jung's occultism—in particular, the Frankfurt School (Michael Minnicino, "The Frankfurt School and 'Political Correctness,'" *Fidelio*, Vol. I, No. 1, Winter 1992)—played such a central role in the perversion of science and the creation of both the "post-industrial society" paradigm and the New Age counterculture, which have reduced Western civilization to its current, potentially terminal crisis, we will review the method of their joint work in some detail.

It is not an accidental aspect of the Jung-Pauli book that both Kepler and Leibniz, whose Platonic/Christian method gave rise to the great scientific discoveries of modern history, are distorted beyond recognition, and then denounced in favor of a more mystical, gnostic worldview.

It is easily demonstrated that these attacks by physicist Pauli (as well as those of the biologist Needham) come directly from Bertrand Russell, who, on behalf of the British oligarchy, correctly recognized that in order to impose the anti-science, anti-growth policies of the British Empire, the influence of Kepler and Leibniz had to be destroyed. A brief look at Russell's attack on Leibniz is necessary and useful at this point.

Russell's 1900 *A Critical Exposition of the Philosophy of Leibniz* accuses Leibniz of publishing for no other purpose than to achieve fame and wealth! The book is fairly characterized as a series of hysterical fits in response to each reference by Leibniz to the ordered lawfulness of the physical universe, or to the fact that ideas are efficient causes of change. Russell was particularly incensed when Leibniz demonstrated that the laws of nature were good, in the sense of the positive self-development of the physical universe, rather than Russell's preferred static (actually entropic) state of equilibrium; he, therefore (of course) repudiated Leibniz's ontological proof of the existence of God. But Russell was nowhere capable of providing any justification for his attacks, other than his insistence on the libertarian right to be free of any moral restraint over his personal conduct or over his empiricist approach to science. Russell complained of Leibniz: "He rejected entirely the liberty of indifference—the doctrine that the will may be uncaused—and even held this to be self-contradictory. . . . He held also that the indifference of equilibrium would destroy moral good and evil, for it would imply a choice without reason, and therefore without a good or bad reason." One can see clearly the roots of the Copenhagen School's "acausality" and moral relativism.

Although the "wave-particle" paradox was not yet known in its modern form (Max Planck's discovery of the quantization of energy was in 1900, the same year as Russell's book on Leibniz), Russell anticipated the problem by attacking (in a typically hysterical fashion) Leibniz's implied solution in his theory of dynamics, and especially his rejection of Newton's "action at a distance." Leibniz, he says, simply refused to accept the fact that there are three and only three mutually exclusive theories of dynamics: (1) matter composed of hard, extended atoms; (2) a doctrine of the plenum, an all-pervading fluid or aether; or (3) unextended centers of force and action at a distance, as in Newton. Said Russell: "Leibniz failed to grasp these alternatives, and thus, from his love of a middle position, fell between not two but three stools." Leibniz, he said, treated mechanical impact as atoms, space as a plenum, and the *monads* as unextended centers of force. "The failure to choose," said Russell, "between these alternatives made his dynamics a mass of confusion." In fact, said Russell,



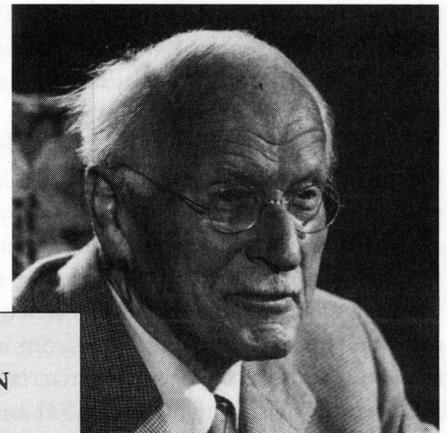
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Leibniz only rejected Newton's theory of gravitation as action at a distance to get revenge for their "personal quarrel" over the calculus! He ends his book by concluding that Leibniz was "the champion of ignorance and obscurantism."

Synchronicity and Leibniz

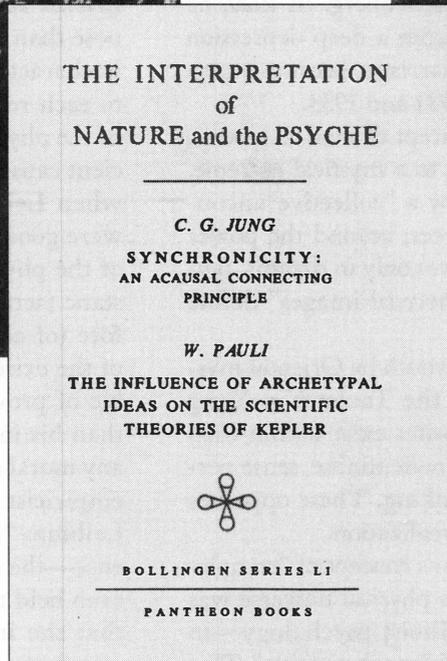
Jung's essay in the book published jointly with Pauli is called, "Synchronicity: An Acausal Connecting Principle." It argues that "the discoveries of modern physics have shattered the absolute validity of natural law and made it relative." Since the new laws of quantum mechanics are statistical and probabilistic, there must exist, Jung asserts, events which do not follow deterministic laws, which are outside of causality. (This is the entirety of Jung's theoretical "argument.") Such events fall in the category of "synchronicity," which refers to two or more simultaneous events which take place in the universe (either physical events or a combination of physical events and psychic events—thoughts or dreams) which are not caused by one another in any way, but which are nonetheless connected in a "meaningful" way. Jung "proves" this assertion by a statistical study of the astrological signs of married couples, where he found that the incidence of marriages between individuals of the "appropriate" signs were so high that there was a 1:500,000,000 probability against such results being by chance alone. Thus, according to Jung, astrology works.

Jung's other "proof" takes the form of an extended discussion of the Taoist practice of divination using the *I*



The Bettman Archive

Wolfgang Pauli (left) and C.G. Jung (above) collaborated in this 1952 precursor of New Age occultism.



Ching (Book of Changes). Jung's view of the Chinese people is the same as the British racist view: that the Chinese are naturally Taoist, anti-rationalistic, mystical, etc. Jung says, "Only in astrology, alchemy, and the mantric procedures do we

find no differences of principle between our (Western) attitude and the Chinese." Jung wrote the preface to the translation of the *I Ching* by occultist Richard Wilhelm in 1949, who was an adviser to Kang Sheng, the chief of intelligence and security for the Chinese Communist Party. Jung wrote in the preface: "I truly undertook to give the esoteric and the occult an opportunity to speak and reveal each its special style of wisdom." Jung applied his theory of synchronicity to the *I Ching* by asserting that the question asked of the *I Ching*, a psychic event, happens simultaneously with the physical tossing of the sticks (which determines which chapter in the *I Ching* will provide the answer to the question), and they are therefore connected in a meaningful way. Again, this is the total extent of his "proof" that the *I Ching* "works," simply asserting that the readings of the text have an "uncanny relevance" for the life of the person.

Jung then introduces a wild distortion of Leibniz, in a manner similar to that of Joseph Needham, as reported below. The necessity for these attacks on Leibniz by Jung and Needham, as with their mentor Bertrand Russell, stems from the fact that Leibniz, in thoroughly discrediting the mechanics of Newton and Descartes, had re-

established the Platonic/Christian Renaissance method of scientific discovery. The physical sciences and the moral sciences were reunited, based on the power of reason as that which defines man as *imago viva Dei*. To justify mysticism and the occult, Russell and his followers had to reassert the division of science from religion, in order to identify an occult connection between the two, which man must accept by blind faith, by submission to the irrational Tao.

Jung fraudulently compares his concept of the archetypes in the mind to Leibniz's conception of the *monad*. To Leibniz, the creative power of reason in the human mind was the actual substance of man, reflecting the universal substance that was God the Creator. He discovered in nature certain universal principles which reflected natural law. These included especially the universal principle of least action, which holds that physical phenomena and life processes occur in such a way that the greatest amount of work is achieved with the least amount of energy expended. This is observed, for instance, in the refraction of light through media of varying densities, where light takes the non-linear path of least-time between two points. To Leibniz, the human mind, the highest expression of the Creation, displayed these laws in the purest form. It was in this respect that the individual *monad*, the mind, could, through its own act of creative reason, reflect on the infinite order of the universe and hypothesize scientific principles explaining the physical changes in that universe, thus contributing to those changes.

Leibniz then proposed that this higher-order lawfulness of the universe defined a "pre-existing harmony," owing to the universally valid lawfulness by which the unfolding creation takes place, including both physical processes and mental creative activity. It is this notion of the relationship of the individual creative mind to the universe as a whole which is the basis of all true scientific discovery.

Jung turned this on its head. What Leibniz really meant, said Jung, is that since the mind reflects the universe as a whole, therefore there is a connection between whatever is going on in the mind and everything going on anywhere in the universe, and that this relationship is not causal, but is "meaningful." To Jung, "the pre-established harmony (of Leibniz) is an absolute synchronism of psychic and physical events." Leibniz is proclaimed the virtual founder of "synchronicity"!

The obvious point to be made is that this occult "connection" is completely lacking in "harmony"—there is no harmonic lawfulness uniting these disparate events, merely their coincidental timing in a Taoist "All-in-One" soup. In particular, Jung simply ignores another universal law fundamental to Leibniz's scientific method, the law

of sufficient reason, "by virtue of which we hold that no fact can be true or existing and no statement truthful without a sufficient reason for its being so and not different; albeit these reasons most frequently must remain unknown to us" (Leibniz, *Monadology*, #32). Jung's only reason for asserting that every event in the universe can be "found" in the individual mind is the simultaneity of the psychic and the physical events—which is certainly not sufficient!

In the end, Jung rejects even his own false construct of Leibniz's ideas, saying: "It is not necessary to think of Leibniz's pre-established harmony or anything of that kind, which would manifest itself in a universal correspondence and simplicity." Even the hint of a rational causal order to the world is too much for Jung, for whom the occult is sufficient.

Pauli and Kepler

Pauli's part of the book co-authored with Jung is entitled "The Influence of Archetypal Ideas on the Scientific Theories of Kepler." What Jung did to Leibniz, Pauli does to Kepler, falsifying his ideas, and then attacking this fraudulent construct.

Pauli quotes Kepler directly on his concept of the archetypes pre-existing in the mind, but then "interprets" Kepler's meaning, according to his own wishes. In the *Harmonice Mundi*, Kepler writes: "To know is to compare that which is externally perceived with inner ideas, and to judge that it agrees with them. . . . Sensory experiences, when consciously realized, call forth intellectual notions that were already present inwardly, so that that which was formerly hidden in the soul, as under the veil of potentiality, now shines therein in actuality."

Kepler insists that these "notions" in the mind, these archetypes, are geometric in nature, and come from "the Mind of God, whose copy here (on Earth) is the human mind, that from its archetype retains the imprint of the geometrical data from the very beginnings of mankind." In *De Stella Nova*, Kepler writes: "Geometry is the archetype of the beauty of the world." Pauli says, "This axiom of his is at once his strength and his limitation."

Why a limitation? Pauli says: "[Kepler's] ideas represent a remarkable intermediary stage between the earlier, magical symbolical and the modern, quantitative-mathematical descriptions of nature." To Pauli, the strength is the so-called "magical symbolic" part, and the limitation is Kepler's retreat from the mystical!

For example, Pauli transformed Kepler's concept of archetypes as *geometry* into archetypes as *specific images*, pictures in the mind which match up with physical things in the physical universe, and equates this process to the "primordial images or archetypes introduced into

modern psychology by C.G. Jung.” These images, Pauli says, are not clear concepts, but are strongly “emotional.” In other words, these are the dreams and fantasies to which Jung ascribes occult meaning, in an “acausal” relationship with unrelated events in the universe.

Compare this to Kepler’s actual profound discovery of the harmony of the spheres—the direct relationship between the location of the orbits of the planets in the solar system and the geometric ordering of the five constructible regular polyhedra (the Platonic Solids), and thus also with the divisions of the musical scale, all generated by the Golden Section. It is this geometric relationship, taking the Golden Section not merely as an arithmetic ratio but as a constructive generating concept, which Kepler perceives as an archetype in the mind of man.

He did not merely describe the laws of motion of the planets (which is all that Newton learned from him), but he demonstrated geometrically that those orbits exist where they do as “least-action pathways,” and could not have existed anywhere else—an issue not even considered by Newton’s linear, reductionist methods.

Consider also Kepler’s beautiful metaphor of the human mind as a circle in relationship to the Divine Mind as a sphere: “When intersected by a plane, the sphere displays in this section the circle, the genuine image of the created mind . . . both, to be sure, are circular. The circle is related to the plane as in the curve to the straight line—mutually incompatible and incommensurable . . . but the circle beautifully fits into the intersecting plane (of which it is the circumscribing limit) as well as into the intersecting sphere by way of a reciprocal coincidence of both, just as the mind is both inherent in the body, informing it and connected with corporeal form, and sustained by God, an irradiation as it were, that flows into the body from the divine countenance, whence it derives its nobler nature” (*Harmonice Mundi*).

This is metaphorical, but it is nonetheless a truthful scientific expression of the creative process as circular action, of a higher-order bounding condition to the linear interior of the circle, while reflecting the perfection of the sphere. LaRouche identifies precisely this type of metaphor as the medium for the transmission of scientific discoveries, and as the basis for understanding causality in a universe which includes human beings. Whereas Bohr and Pauli revert to Taoist mysticism when considering man as both observer and actor in the universe, concluding that causality must be discarded, LaRouche identifies the actual causal connection between the mind (spirit) and matter—not magical powers, but the power of valid scientific discoveries to cause transformations of nature. LaRouche says:

Instead of limiting causation to the notion of ‘exerting force’ against objects, conceive of change *per se* as a form of causation. . . . Consider the transmission of a valid, crucial scientific discovery generated within one sovereign creative mind, to be assimilated efficiently for successively improved (changed) practice by other minds. . . . The medium used is language: spoken and written language, geometry, and music. (*Cold Fusion*)

Pauli, however, after quoting Kepler’s metaphorical passage on the mind, reduces it to a linear mapping. He refers to the circle as a literal symbol, which simply maps onto circles in the universe. Pauli writes: “It can be seen that in Kepler the symbolic picture precedes the conscious formulation of natural law. The symbolical images and archetypal conceptions are what cause him to seek natural laws. Because he looks at the sun and the planets with this archetypal image in the background, he believes with religious fervor in the heliocentric system.” In an essay written in 1953 called “The Struggle Towards Wholeness in Physics,” Pauli admitted the source of this view of Kepler to be Bertrand Russell: “This is how I have actually understood Kepler’s spheres and his ‘tendency towards a cult of the sun,’ as B. Russell and others have expressed it.” Russell wrote in his 1935 *Science and Religion* that Kepler “was originally led to favor the Copernican hypothesis almost as much by sun worship as by more rational motives.”

Pauli’s purpose in this obfuscation is only revealed in the final section of his book, where he reviews the famous debates between Kepler and Robert Fludd, the British alchemist and Rosicrucian.

Fludd, typical of all mystics, Taoists, and related gnostics, claims that his occultism is the only alternative to crass materialism and empiricism. Fludd posited a spiritual world of light and a material world of darkness, in constant struggle but of equal power. Only by the use of the Rosicrucian mysteries can the “spiritual” powers be used to affect the material world, such as the alchemist effort to release the “*prima materia*,” the “world-soul” dormant in matter. Kepler, said Fludd, is but a “vulgar mathematician concerned with quantitative shadows.”

Kepler said of Fludd: “One can see also that he takes his chief joy from incomprehensible riddle-images about reality, while I proceed precisely from the standpoint of throwing the bright light of knowledge upon things in nature that are wrapped in obscurity” (*Harmonice Mundi*).

Pauli fully defends Fludd (and even contributes some original translations of Fludd’s gobbledegook, including several occult diagrams). He concurs with Fludd that Kepler’s idea that the soul responds to proportion is due to his entanglement in the dark (the corporeal world),

rather than the imaginative faculty, which recognizes Unity (i.e., “All-is-One”), and comes from the light (the mystical world).

In Pauli’s personal letters, he discusses his rejection of Christianity, again crediting Bertrand Russell for the inspiration. In place of the Christian trinitarian view which Kepler (following Nicolaus of Cusa) had demonstrated, through hypothesis and experimentation, to be a scientifically appropriate description of the physical universe, Pauli preferred the “Quaternarian” view of Robert Fludd. Pauli’s fourth dimension of this “Quaternity” was “the evil side of God,” which he identified with the irrational, acausal side of life and the physical universe. Following the “secret writings” of the Rosicrucians, Pauli wrote: “I would like to interpret the ‘dark’ as that which, for the time being eludes intellectual, regular (‘light’) order. That is, the evil in ethics (integrating the evil in the divinity), the acausal in natural philosophy.”

Pauli not only quoted Lao Tzu to support this view of the evil in God (“Nature has no love for the human species”—Lao Tzu), but by 1955, he had adopted a virtual Taoist creed: “I believe it is the fate of the West to again and again link these two basic positions with one another, the one which is critically rational and desires to know, and the one which is mystically irrational and searches for the absolving experience of amity. Both positions will always live in the human soul, and one will always already carry the other as the germ of its opposite. . . . We must entrust ourselves to this process and recognize the pair of opposites as complementary.”

Pauli admitted that Kepler really doesn’t fit into either of the Rosicrucian categories of “light” and “dark,” but avoided this problem by extending Fludd’s categories to an even more Taoist form, a “psychological contrast between the feeling type, or the intuitive type, and the thinking type.” Kepler is dumped into the “thinking type” category with Newton and Aristotle! Pauli embraces the feeling type, the occult: “Even at the cost of consciousness of the quantitative side of nature and its laws, Fludd’s ‘hieroglyphic’ figures do try to preserve a unity of the inner experience of the ‘observer’ (as we should say today) and the external processes of nature, and thus a wholeness in its contemplation.” Kepler lacked this mystic “wholeness,” said Pauli, and is thus responsible for the collapse into the materialism of Newtonian physics!

But, says Pauli, we have been saved by Bohr and Jung: “Modern quantum physics again stresses the factor of the disturbance of phenomena through measurement, and modern psychology again utilizes symbolic images as raw material . . . to reorganize processes in the collective psyche.”

In place of natural law, as understood by Kepler and Leibniz, Pauli posited a “new type of statistical, quantum-physical natural law . . . which cannot in principle be reduced to causal-deterministic laws,” and, like Jung’s synchronicity kookery, “must recognize the existence of the essentially unique in physical occurrences. I should like to propose,” said Pauli, “following Bohr, the designation ‘statistical correspondence’ for this new form of natural law.”

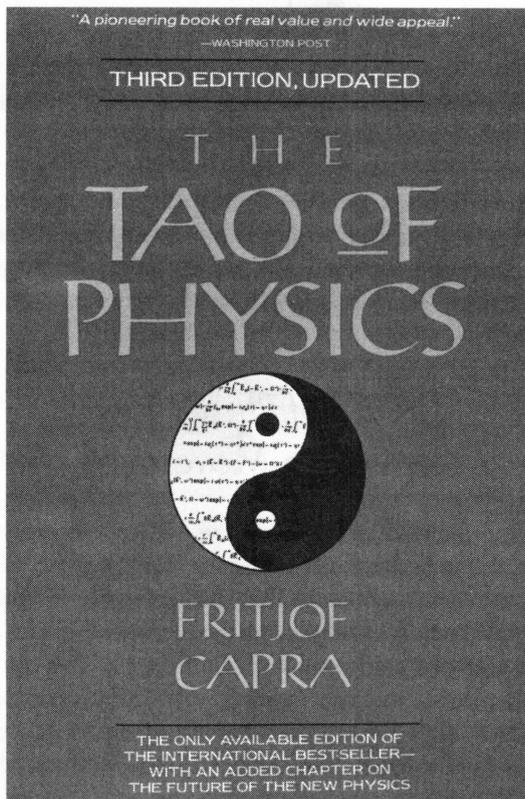
The Tao of Physics and The Green Movement

In 1975, at the peak of the explosion of the counterculture in America, a Berkeley-educated Ph.D. in physics, Fritjof Capra, published a book called *The Tao of Physics*. By the 1990’s, this book had been published in over a dozen languages and had sold over a million copies. The author, who admitted that the consumption of psychotropic drugs had “showed me how the mind can flow freely, how spiritual insights come on their own,” compared the results of quantum mechanics to the teachings of the Eastern mystics, especially Taoism and Zen Buddhism. Capra has gone on to become a leading figure in the radical environmentalist movement in the U.S., advocating de-industrialization, population reduction, and similar eco-fascist attacks on humanity.

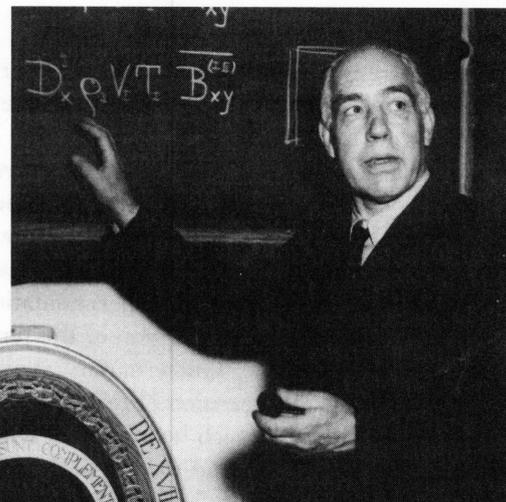
But Capra’s book was not simply the ravings of a Berkeley pothead who turned on to Zen. He is in fact a well-groomed product of today’s university training in advanced physics. According to his own report, he worked closely with Werner Heisenberg, Niels Bohr’s closest collaborator, in the early 1970’s, who went over every chapter of his book. Capra wrote: “It was Heisenberg’s personal support and inspiration that carried on through those difficult years, when I went out on a limb to develop and present a radically new idea.”

Capra’s claim of Heisenberg’s support must be viewed with circumspection, since Heisenberg in his later years, attacked the Copenhagen interpretation and other “pessimists among particle physicists who believe that there simply is no such law of nature, defining the dynamic properties of matter” (Heisenberg, “What is an Elementary Particle?,” 1975).

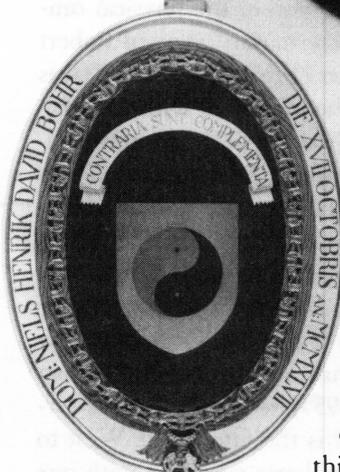
The importance here is that the gnostic irrationalism of Bohr’s “complementarity,” the Taoism of the Copenhagen School, not only poisoned the potentially fruitful development of science, which development could have prevented the current global economic disaster, but it also directly contributed, intentionally, to the creation of the hysterical anti-science ideology which spawned such



Left: Fritjof Capra's "The Tao of Physics." Right: Niels Bohr. He designed a coat-of-arms with the Taoist Yin-Yang symbol (below).



Princeton University, Courtesy AIP



Nationalhistoriske Museum på Frederiksborg

obvious differentiation of things in the physical universe, he uses the Yin/Yang "unity of opposites," which we saw Bohr adopt as the insignia of his coat-of-arms. Capra extends this to its necessary logical conclusion of moral relativism, ascribing

deadly frauds as "global warming," the anti-nuclear movement, etc.

It is worth reviewing two points from Capra's *Tao of Physics*—first, his accurate comparisons between Taoist irrationalism and the ideology of the Copenhagen School, and, second, the distortion of Confucianism, imposing on China a synthetic Taoist ideology under the rubric of an all-inclusive "Chinese philosophy."

Capra makes explicit the Taoist root of Pauli's division of people into "thinking-types" versus "intuitive, feeling types." He asserts that "it has been recognized" that there are two types of knowledge, rational and intuitive, associated, respectively, with science and religion (which was the thesis of Bertrand Russell's 1935 *Science and Religion*). He accuses the West, in general, but also Confucianism in the East, of being too rational, too scientific, too Yang at the expense of Yin. He asserts that in China, "two complementary [!] philosophical traditions—Taoism and Confucianism—have developed in ancient China to deal with the two kinds of knowledge." True knowledge, or "absolute" knowledge, comes only from the "non-intellectual experience of reality, arising in a non-ordinary state of consciousness called meditative or mystical."

To avoid the problem of the One and the Many, Capra simply chooses unity over multiplicity—the mystical "All-is-One" soup of the Taoists and the Buddhists, the "night in which all cows are black." To deal with the

such amoralism to "the East." "In the East, a virtuous person is therefore not one who undertakes the impossible task of striving for the good and eliminating the bad, but rather one who is able to maintain a dynamic balance between good and bad." Confucius would turn over in his grave to hear such a thought ascribed to him.

However, Capra is indeed accurate in projecting this Taoist immorality onto the ideology of Bohr and his supporters. He reports that the "basic oneness of the universe is not only the central characteristic of the mystical experience but is also one of the most important revelations of modern physics." The solution to the wave/particle paradox is simply the unity of the Yin and Yang—they can be opposites and be one at the same time.

Similarly, Capra draws out the parallels between Buddhism and Bohr's view of the impossibility of knowledge (owing to man's role as both actor and observer in the universe). Capra quotes the Mahayana Buddhism master from the First Century, Ashvaghosha: "All phenomena in the world are nothing but the illusory manifestation of the mind and have no reality on their own." Capra is correct in asserting that this is the logical result of quantum theory "in its most extreme form." Ultimately, says Capra, this theory implies that "the structures and phenomena we observe in nature are nothing but creations of our measuring and categorizing mind." This, of course, does not refer to the causal effect of new valid scientific discoveries by

a human mind applied to the transformation of nature, as LaRouche (following Cusa, Kepler, and Leibniz) identified above. Rather, this is pure reductionist empiricism—the world is what we observe with our senses (which is where Bohr and quantum mechanics never departed from the empiricism of Newton), and thus, reality is only in our minds. This is most clearly demonstrated by Bohr’s argument that the uncertainty involved in man’s efforts to measure the location and momentum of an atomic particle is not simply a problem in our method of observation, but is an uncertainty in nature itself. No proof is offered—simply the Aristotelian (and Buddhist) assertion that the perception of the shadows on the wall of Plato’s cave is all that is real.

The second point to be made about Capra’s *Tao of Physics* is his obfuscation of the humanist natural theology which characterizes both the Vedic literature of India and the Confucian teachings of China. By simply lumping these teachings together with the mystical, anti-rational extremes of Mahayana Buddhism and Taoism, calling the amalgam “Eastern Mysticism,” Capra joins his voice to the Venetian effort of the past four centuries to destroy the Confucian tradition (in tandem with their efforts to destroy apostolic Christianity), an effort in full force today. Since Capra follows the method of Joseph Needham, which will be fully discussed below, it is necessary to present only one example of Capra’s particular form of this fraud.

In drawing the parallel between the Copenhagen “complementarity” with the Yin/Yang “Harmony of Opposites” ideology, Capra quotes from the Upanishads, from Buddhists, from Taoists, and from Confucius, intending to prove his point. All are referring to the unity of opposites, but what Capra fails to recognize (by intention or by ignorance) is that the actual mystics are referring to all things being one, an undifferentiated, atheistic soup, while both the Indian and Chinese humanists are referring to the unity of opposites in God, the existence of the absolute infinite, and man’s relationship to that infinite through reason.

For example, Taoist master Chuang Tzu is quoted: “The ‘this’ is also the ‘that.’ The ‘that’ is also the ‘this’ . . . That the ‘that’ and the ‘this’ cease to be opposites is the very essence of the Tao.” And Mahayana Buddhism master Ashvaghosha is quoted: “When the mind is disturbed, the multiplicity of things is produced, but when the mind is quieted, the multiplicity of things disappears.” These simply state the denial of multiplicity in favor of an all-encompassing but incomprehensible Unity.

Capra then quotes from the Upanishads, intending to make the same point:

He who, dwelling in all things,
Yet is other than all things,

Whom all things do not know,
Whose body all things are,
Who controls all things from within—
He is your Soul, the Inner Controller,
The Immortal.

This is not a denial of multiplicity, but a praise of God, the non-Other, who is intelligible as that which is immortal through man, the rational soul.

Joseph Needham: Ideological Triple Agent

The final section of this essay will expose the vicious fraud carried out against China by the British biologist, “China scholar” Joseph Needham. But to understand Needham’s distortion of the history of Chinese science and philosophy, it is necessary to briefly review the developments of the Confucian Renaissance in China in the Eleventh and Twelfth Centuries A.D., and the nearly successful collaboration in the Seventeenth Century of Western Renaissance Christianity and Eastern Renaissance Confucianism.

Every period of significant development in China coincided with a period in which Confucianism was dominant, generating exponential population expansion, while every period of Taoist (and later, the associated Zen Buddhist) domination led to decline and catastrophic population collapse (Michael Billington, “Toward the Ecumenical Unity of East and West: The Renaissances of Confucian China and Christian Europe,” *Fidelio*, Vol. II, No. 2, Summer 1993). The greatest period of development came in the Confucian Renaissance during the Sung Dynasty (A.D. 960-1260). The scientific and technological impulse generated in this period turned China into the most advanced economy in the world for several centuries, even generating a recovery from the devastation of the genocidal Mongol occupation (A.D. 1260-1368) [SEE Figure 1]. However, the unfolding of the Florentine Renaissance in Europe in the mid-Fifteenth Century coincided with a general decline in China, including a resurgence of Taoism and Taoist-influenced degeneration within Confucianism, which culminated in the collapse of the Ming dynasty in 1644.

The last half of the Seventeenth Century, however, saw an experiment in global ecumenical collaboration which is particularly important for our examination of the Taoist perversion of Twentieth Century science in the West. Gottfried Leibniz, in collaboration with Jesuit missionaries working at the highest levels of the Court during the reign of the Ching Emperor Kang-Hsi (1661-1722), launched a Grand Design to link the entire Eurasian landmass through economic development, sci-

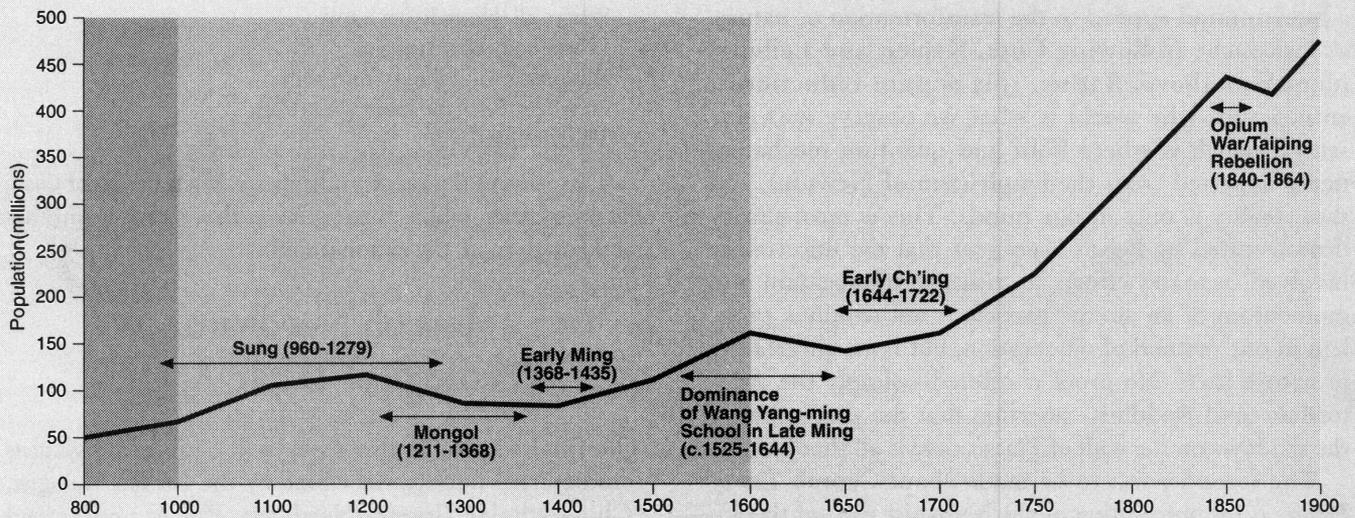


FIGURE I. Rapid population growth accompanied the three major periods of influence of the Confucian (Sung) Renaissance, while population collapse followed each recurrence of Taoist/Legalist rule. In addition to the Sung period proper, there were two major revivals of Confucian ideas as guides to the institutions of the Empire, each leading to a period of dramatic economic, scientific, and cultural advance: First, the early Ming Dynasty, following the devastation of the Mongol occupation in the Thirteenth and Fourteenth Centuries; and second, the early Ch'ing Dynasty, following the collapse of the Ming in 1644. British Empire "Legalist" policies, combined with their manipulated anti-Confucian Taiping Rebellion, resulted in another population collapse during the Eighteenth Century.

Note changes in time scale at A.D. 1000 and 1600.

Source: Colin McEvedy and Richard Jones, *Atlas of World Population History*.

entific collaboration, and a common ecumenical moral outlook. Leibniz's writings on China show that he saw in the Confucian teachings, and especially in those of the Sung Renaissance sage Chu Hsi, the core of the same scientific worldview which he had himself developed in the process of his seminal work in launching modern physics and the science of physical economy (Billington, *ibid.*).

Although Confucius and Mencius generally avoided discussion of the attributes of Heaven, both revealed in their writings a belief in a Creator and a belief that man is created fundamentally good, reflecting the pure goodness of Heaven. Chu Hsi, 1,500 years later, developed this concept in a manner which showed that the physical laws of the universe were precisely the same as the laws of creative reason. Chu Hsi defined universal Principle, or *Li* (理), as the infinite first cause, the Great Unity, which was both totally indivisible while also embodying the most perfect multiplicity. This Principle, or *Li*, was the elementary substance of all things, in the sense that any particular corporeal substance only existed in conjunction with its Principle. Leibniz recognized in this a profound scientific view of the world, similar to his own concept of the *monads* (or souls, in the case of conscious beings) as the simple substance, with the Universal Monad being God himself. This concept posed a solution to the problem of the One and the Many, the Parmenides paradox of

Plato, by, on the one hand, defining the nature of each particular creation as that which reflects the Creation as a whole (or, the individual *Li*, or *monad*, reflecting and participating in the Universal *Li*, or Universal Monad, or God); while, on the other hand, demonstrating that the action of each *Li*, each *monad*, affects directly the entirety of the unfolding Universal Creation. Chu Hsi, like Leibniz, saw this principle at work even in the smallest inanimate object, while identifying the hierarchy of creation whereby the human mind, which reflects the Universal Principle (*Li*) in the most perfect, least obscured manner of all created things, is uniquely capable of both understanding and consciously affecting this process as a whole through the exercise of creative reason.

Leibniz believed this to be the fundamental basis for the scientific method of hypothesis, as opposed to the mere empiricist tabulation of sensory data by a mind conceived as an Aristotelian "blank slate." He compared Chu Hsi's concept of the *Li* as the nature of things, to his own view that "nature is wise, in that she does all for an end and nothing in vain" (G.W. Leibniz, *Natural Theology of the Chinese*).

Chu Hsi's work became the standard for Confucian scholarship throughout subsequent history, withstanding numerous attempts to "revise" his work with Taoist distortions. It is important to note here that Chu Hsi directly

and repeatedly refuted Taoist ideology. Said Chu Hsi, the notion of *wu wei*, non-action (“go with the flow” in New Age jargon), which was central to Taoism, failed to understand that the nature of the mind, like the mind of Heaven, “is none other than the production of things; that if one interprets this mind any other way, one will invariably be drowned in emptiness and submerged in quietude, and will fail to attain the proper connection between substance and function, root and branch” (*Chu Wen King wen-chi* 42:196). To defend Taoism, the work of Chu Hsi (and Leibniz) had to be destroyed. This was the task assumed by Joseph Needham.

A Taoist Friend of Mao

Joseph Needham turned to China studies at the peak of his career as a biologist in England in the 1930's. Both he and his wife were members of the British Royal Society. He was a leading spokesman for Bertrand Russell's collaborator Alfred North Whitehead's theory of “organicism,” a holist, atheistic view of the universe as a living organism following neo-Darwinian biological laws of evolutionary growth. He was a member of the Communist Party of Great Britain, placing him in political collaboration with the geneticist J.B.S. Haldane, who was also a Communist and editor of the London *Daily Worker* in the 1940's. He was also in the circles of the Fabian Society, H.G. Wells, the Webbs, and Bertrand Russell himself. Needham's oft-repeated “philosophy of life,” following Russell's division of religion, art, and science, identified five forms of human experience: religion, science, history, philosophy, and aesthetics. “I don't think there is any necessity to reconcile them,” said Needham.

Following World War II, Needham's biologist/geneticist friend Julian Huxley headed a project to profile and manipulate ethnic divisions throughout the world under the auspices of the new Russellite project, the United Nations. Since the 1920's, Huxley had served as the world leader of the pseudo-science of eugenics (“race purification”), supplying his supposed “scientific” authority to the implementation of racial laws in Britain, the U.S., and in Nazi Germany. Needham called on his friend Huxley and persuaded him to include a division on science to his U.N. project, in addition to the original divisions on education and culture; this gave birth to UNESCO (the United Nations Educational, Scientific, and Cultural Organization). This agency became the center for occultists at the U.N., with Needham himself heading the Science Division during 1946.

According to Needham's account, when some Chinese biologists came to work in his laboratory at Cambridge, he became fascinated with China and suddenly dedicated his life to a massive study of the history of science in Chi-

na, resulting in the multi-volume encyclopaedic project, *Science and Civilization in China*. It is more likely, however, that he was deployed by his Communist and/or Fabian associates to take responsibility for China, and to establish relations with the emerging Taoist movement called the Communist Party of China (CPC). Bertrand Russell had personally deployed himself to China in 1920 to introduce Bolshevik theory, Malthusianism, and his particular brand of moral perversity, which contributed directly to the original formation of the CPC. Russell and his collaborator, Needham's mentor Whitehead, may have directly encouraged Needham's choice of vocation.

Whatever the first cause, Needham became a close friend and collaborator of Mao Zedong and the Communist leadership, functioning as a spokesman for the Maoist nightmare up to the present. Although his prejudices are well known, he is nonetheless accepted as the absolute authority on science in China in the West and even in Taiwan. Thus, while reinforcing the British distortion of Chinese culture in the West, Needham has functioned as the “Kim Philby” of British intelligence in China, feeding back into China, to his “old friends,” a distorted profile of Western science and culture intended to reinforce the bestial worldview of Taoism by lending the support of so-called Western science against the Confucian tradition.

It is not only of historical interest that Needham's role in the British-sponsored destruction of China be exposed. The current revival of Confucian studies is dominated by a Taoist-oriented faction, centered around Harvard University, British agent Lee Kwan Yew of Singapore, the World Council of Churches and others, who are intent on reimposing a Twenty-first-Century form of Nineteenth-Century British imperial control over China. The “Third Wave,” “post-industrial society,” anti-science ideology of this network rests on Needham's distortion of Chinese history.

The thesis of Needham's writings comes directly from Max Weber and Bertrand Russell—that Taoism is both the source of the true Chinese character, and, through alchemy, the root of all scientific progress, while Confucianism, being authoritarian and concerned only with human society (rather than nature), has been a hindrance to scientific development. Confucianism, Needham wrote, suffered from an “intense concentration of interest on human social life to the exclusion of non-human phenomena (which) negated all investigation of things, as opposed to affairs” (all quotes from Needham are from his *Science and Civilization in China, Vol. II*). The result, he said, is that “rationalism proved itself less favorable than mysticism to the progress of science.” This is a recurring theme, asserting that “science and magic are in their earliest stages indistinguishable.” This is not only

true in China, Needham says, but universally, and he even admits to the occult roots of British science: "Rational theology was anti-scientific, mystical theology proved to be pro-scientific. . . . [Thus,] the interest taken in the early Royal Society in what we now can see were magical claims." His mild effort to put his praise of the occult in the past is a bluff, as will be seen.

As we saw also in the case of Wolfgang Pauli, the embrace of the occult in science is the necessary result of an empiricist or positivist view of the world. Needham quotes the Taoist master Chuang Tzu admiringly: "Those who study the Tao [know that] they cannot follow these changes to the ultimate end, nor search out their first beginnings—this is the place at which discussion has to stop" (Chuang Tzu, 25). Needham comments: "Note in the above passage the characteristic distaste for metaphysics; the ultimate beginning and the ultimate end are the Tao's secret. All that man can do is to study and describe phenomena; it is indeed a profession of faith in natural science." To Needham, "natural science" is merely the mechanical recording of sensory data, completely lacking in any hypothesizing activity whatsoever, and dependent upon the acceptance of a mystical and unknowable cause and purpose to things and affairs.

There is no place for the "Good" in such an empiricist schema. The Taoist Yin/Yang, like the gnostic "Power of Light" and "Power of Darkness," entails a pure moral relativism. Needham's personal creed on this point is blood-curdling: "The expulsion of partiality and human weakness in the investigation of the more disgusting or terrible aspects of Nature, and the expulsion of human ethical criteria and preconceptions from the human approach to Nature, lead naturally to a realization that human standards are irrelevant outside humanity."

Needham quotes one of his favorite chapters from Lao Tzu's *Tao Te Ching*, a book which Needham considers to be "without exception the most profound and beautiful work in the Chinese language." Chapter 5 reads:

Heaven and Earth are not benevolent [have no *jen*],
They treat the 10,000 things like straw dogs.
Nor is the Sage benevolent [the Sage has no *jen*],
To him also the hundred clans are but straw-dogs.

Needham's comment: "No one can understand this unless it is realized that the expulsion of ethical judgments from natural science was an essential step in its development. . . . Ultimate benevolence may require temporary non-benevolence." One hears, in these words, the various apologists for the evil of the British Empire's rape of China, India, Africa, etc. But also, one hears the conscious perversion of the beauty of scientific discovery by the ugliness of Taoist mysticism.

The Roots of the Environmentalist Counterculture

The "politically correct" environment of the 1990's is quite demonstrably a Taoist creation. The mentality which accepts the idea of the "post-industrial society" as a positive notion has already accepted the fundamental Taoist axioms associated with radical environmentalism, feminism, and the libertinism of the yuppie lifestyle and the "rock-sex-drug counterculture." This is a scientific issue, as well as a moral one.

Needham draws the connection quite clearly in the following extended quotation:

The observation of Nature, as opposed to the management of Society, requires a receptive passivity in contrast to a commanding activity, and a freedom from all preconceived theories in contrast to an attachment to a set of social convictions. This is the sense in which we may interpret the symbols of "water" and "feminine" so dear to the early Taoist schools. . . .

There has been a great failure in subsequent ages to understand this psychological symbolism. . . . The Confucian . . . social-ethical thought-complex was masculine, managing, hard, dominating, aggressive, rational and donative—the Taoists broke with it radically and completely by emphasizing all that was feminine, tolerant, yielding, permissive, withdrawing, mystical and receptive. . . . The female receptiveness which the Taoists desired to display in their observation of Nature was inextricably connected with the feminine yieldingness which they believed should be prominent in human social relations.

Today's Gaia cult, whose irrationalism has become law, for example, in the Montreal Protocol banning CFC's, in the effective ban on nuclear power development, in the witchhunt against cold fusion, etc., was carefully nurtured by such priests of Taoism as Joseph Needham. To Needham, this is the "social truth embodied in the Lao Tzu. . . . Taoism had to retain, unborn within itself for two thousand years, science in the fullest sense."

Even the insane policy of "technological apartheid" (as Lyndon LaRouche has called it) now being enforced by the United Nations, which refuses access to modern technology by Third World nations under the excuse that it may have a "dual use" in weapons production, is accredited to Taoist wisdom. Needham points to the Taoist's "distinct prejudice against technology and inventions, which seems at first sight very curious. One can see, in fact, that mechanical inventions have always been double edged. Their *méfiance* sprang from the (not unjustified) impression that all machines were infernal machines, or very liable to be so." Needham even wrote a book praising the Seventeenth-Century "Levellers" movement in England, a Puritan sect that smashed machines as the



Archives Unesco

works of the devil. Such anti-technology (Taoist) fanaticism was, said British Royal Society Fellow Needham, “by no means so disadvantageous to the working class as has usually been supposed.”

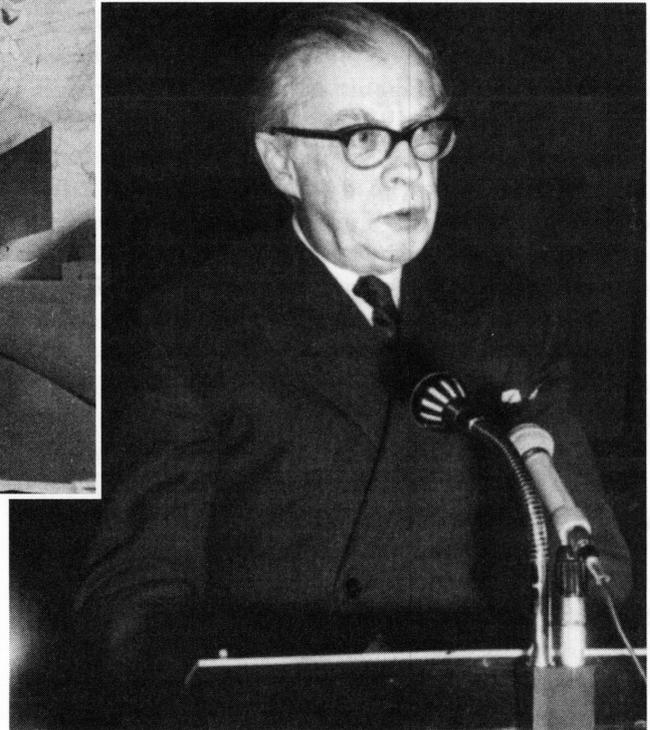
Needham vs. Chu Hsi and Leibniz

To justify this Taoist view of history and science, Needham recognized that he was required to explain the historical fact that the greatest development of science and technology, both in China and in Europe, occurred as the result of the exact opposite epistemological worldview—in Europe, the Christian Platonism of Nicolaus of Cusa, Kepler, and Leibniz, which generated the discoveries of the Golden Renaissance, and of Bernhard Riemann and Georg Cantor in the Nineteenth Century; and, in China, the Confucian tradition as developed by Chu Hsi in the Twelfth Century, and his followers up to the collaboration with Leibniz in the late Seventeenth and early Eighteenth Centuries.

Needham’s solution was simple, if ludicrous. He declared both Chu Hsi and Leibniz to be atheists, covert Taoists, and the founders of his theory (from Whitehead) of “organicism”!

The fundamental antinomy of history, said Needham, was between theological idealism and atomic materialism. Leibniz, he said, “was an example of this split personality of Europe. He first grew up in Aristotelian-Thomist theological scholastic vitalism, but then went over to ‘atoms and the void,’ i.e., to Lucretian-Cartesian

Biologist Joseph Needham (left) played a key role in presenting the West with a distorted, Russellite picture of Chinese civilization. A close collaborator of UNESCO founder, the racist Julian Huxley (below), Needham headed its Natural Sciences Department.



UNESCO/Claude Bablin

mechanical materialism, a system of thought which had always tended, however disguised, to atheism.” The “atheist” Leibniz then solved the antinomy through his theory of *monads*: “Against the Cartesian view of the world as a vast machine, Leibniz proposed the alternative view of it as a vast living organism.”

This is an absurdity, obvious on even the most cursory review of Leibniz’s writings. Leibniz begins his *Monadology* by posing an apparent contradiction: the *monad* is defined as “simple substance,” the “veritable atoms of nature, the elements of all things.” But by being “simple,” he specifies that the *monad* has “no parts, neither extension, nor figure, nor divisibility.” This cannot, therefore, be the “atom” in the sense of hard little balls of matter which, added together, make up larger pieces of matter, as reductionists looking for the ultimate “fundamental particle” may imagine. Leibniz identifies the fact that the actual substance of the universe is the process of change itself, that every *monad* is different and is undergoing continual, self-generated change. Herein lie the laws of nature: the law of sufficient reason, which locates the source of change within the individual *monad* as coming from the “necessary being,” the Universal Monad, which “acts according

to the principle of the best possible.” This view of the universe is the basis of the method of hypothesis of the higher hypothesis, which is the source of all scientific discovery.

Needham, following Russell and Whitehead, simply ignores what Leibniz says, and asserts that “the *monads* of which he considered the world to be composed were indissoluble organisms participating as parts of higher organisms.” In a rather hilarious footnote, he says: “It is at first sight disturbing to find that *monads* are defined as without parts, but Leibniz used the word ‘parts’ in a rather special way.”

Needham is then ready to impose the same distortion upon Chu Hsi and the method of the Confucian Renaissance in the Twelfth Century. He quite correctly identifies the fact, first stated by Leibniz himself, that “the hierarchy of *monads* and their pre-established harmony resembled innumerable individual manifestations of the Neo-Confucian *Li*” of Chu Hsi. But he translates *Li* not as “Principle,” nor as “substance” in the sense of Leibniz, but as “organization,” meaning simply the arrangement of the organisms which make up his Newtonian world.

Without attempting a thorough discussion here, it should be noted that Chu Hsi explicated at great length his concept of *Li* as preceding matter. The Taoists imputed a mystical power to the “stuff” of material being, called the *Ch’i* (氣)—it was this *Ch’i* of matter that was transformed by alchemy, and which was accessed in the human body to achieve longevity through breathing exercises, sexual perversions, etc. Chu Hsi, by identifying the process of creation by Heaven (the universal *Li*) as impressing its image upon every created thing (the individual *Li*), showed, like Leibniz, that the essence of things was located in the process of change, guided by a principle of perfection. The *Ch’i*, related to matter, involved opposites, Yin and Yang, but *Ch’i* could only exist in connection with the *Li*, which is above matter, and has no opposite. Scientific method, as identified by Chu Hsi, was located in the “investigation into the principle (*Li*) of things and affairs to the utmost,” a total repudiation of empiricism.

And yet, Needham ascribes his pure empiricist methodology, and the view of the world as an “organism,” an amoral glob of mud and protoplasm, to Chu Hsi and to Leibniz! In fact, Leibniz explicitly refuted Needham on precisely this point (250 years earlier), both for himself and on behalf of the Confucians:

Perhaps some Chinese assume that a primitive composite has resulted from the primitive form, or *Li*, and from the primitive matter or *Ch’i*; a substance of which the *Li* is the soul and the *Ch’i* its matter. They could comprehend this substance under the name Supreme Ultimate, and the entire world would thus be conceived of as an animal, life universal, supreme spirit, a grand personage; the Stoics

speak of the world in this fashion. Among the parts of this grand and total animal would be the individual animals just as for us animalcule enter into composition of the bodies of large animals. But since one does not find this error explicitly in the ancient Chinese authors, it should never be attributed to them, all the more so since they have conceived of matter as a production of God. God will not combine substance and matter, and thus the world will not be an animated being, but rather God will be an *intelligentia supramundana*; and matter, being only an effect of His, will never be coeval with Him. (*Discourses on the Natural Theology of the Chinese*)

Completely ignoring the entire history of Confucian teachings on benevolence (*jen*) and, in particular, Chu Hsi’s teachings on the creative power of Heaven, Needham told *Scientific American* magazine in 1992 that, “One of the most liberating aspects of the whole of my life was when I went to China and found that a quarter of the human race doesn’t find the need of believing in a benevolent and creative god.” Needham’s contribution to Twentieth-Century science is perhaps best captured by the ending to his volume on Chinese philosophy and science:

Modern science, since the time of LaPlace, has found it possible and even desirable to dispense completely with the hypothesis of a God as the basis for the laws of Nature, has returned, in a sense, to the Taoist outlook. . . . This is what accounts for the strangely modern ring in so much of the writing of that great school. (*Science and Civilization in China, Vol. II*)

It should be noted that the various popular applications of scientific theory to economic policy over the past fifty years have the same Taoist epistemological roots as the Copenhagen School and Needham’s “organicism.” The “systems analysis” approach that emerged from Norbert Wiener’s “Cybernetics” and Von Neumann’s “Game Theory,” as well as Prigogine’s “Chaos Theory” and its kookier spin-offs like Alvin Toffler’s “Futurology” and George Soros’ pseudo-theories on the science of stealing—all of these reveal to investigation the same rejection of any creative process in the human mind, replacing the mind with a computer, capable only of data input and linear deductions. Such ideological diseases eventually cause terminal conditions if left unchecked, as we see today in both the anti-science cults that run the United Nations and the governments of most advanced sector nations, and in the cancerous bubble in the world financial system, brought on by the “creative financing” in junk bonds, derivatives, and related looting of the real productive economy. A return to rigorous scientific method, as proven historically by the advance of mankind’s physical economy under the impulse of Platonic/Christian and Confucian thinking, is the minimum requirement for reversing the planet’s unfolding breakdown crisis.