

How I Came to Know Rudolf Steiner

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Contents

How I Came to Know Rudolf Steiner.....	1
Background on Rudolf Steiner	1
An Interesting Question.....	9
My Quest to Know the Meaning of Life	10
The Journey Continues; Finding Rudolf Steiner	25

Background on Rudolf Steiner

Rudolf Steiner was the greatest spiritual scientist of the twentieth century. He was indeed a remarkable man. He is best known as a religious philosopher and epistemologist, but he was also many other things: scientist, educator, writer, literary editor, and creative artist in drama, painting, architecture and music. He made significant contributions to the fields of agriculture, therapy, and medicine. He founded the educational system known as Waldorf Education or Steiner Education, which today teaches tens of thousands of children worldwide. He wrote almost thirty books and gave over 6,000 lectures on a wide range of subjects, including education, medicine, agriculture, social issues, science and the arts. He pioneered biodynamic farming and gardening and developed an approach to the care and education of the

handicapped. He developed an art of movement called eurythmy. His philosophy of spiritual science (Anthroposophy) is an active worldwide movement today.

Rudolf Steiner was a deeply religious man. He viewed the “Christ event” – the “Mystery of Golgotha,” as he referred to it – as the “turning point of time” in human spiritual history (as well as a profound and direct personal spiritual experience). For more information on the life and works of Rudolf Steiner, refer to Internet web sites <http://www.elib.com/Steiner/Books/> (The Steiner Book Archive) or <http://www.steinercollege.org> (Rudolf Steiner College). For books, see the Anthroposophic Press (<http://www.anthropress.org>), the Rudolf Steiner Press (<http://www.rudolfsteinerpress.com>), or Rudolf Steiner College (<http://www.steinercollege.org>).

There are many paths to God. Prior to Steiner’s work, the field of spiritual perception (metaphysics) was the domain of “mystery schools” such as Hindu Vedanta, Zen Buddhism, Christian Gnosticism, Hebrew Cabalism, Chinese Taoism, Islamic Sufism, and American and African Shamanism. The prevailing concept in Steiner’s time was that spiritual perception and “secret wisdom” was obtained through certain organs (chakras, “wheels,” lotus flowers) in the “subtle body” of man. Spiritual consciousness was awakened by means of mental and physical exercises, including breathing, posture, vegetarianism, and meditation.

The aspect of the “ancient approach” to spiritual science that bothered Steiner was its dreamlike character. He discussed this in his autobiography, *The Story of My Life* (see The Steiner Book Archive for references). I quote from Chapter XXXII: “I looked into an ancient spiritual knowledge of humanity. It was dreamlike in character. Men saw in

pictures through which the spiritual world revealed itself. But these pictures were not evolved by the will-to-knowledge in full clarity of mind. They appeared in the soul, given to it like dreams from the cosmos. This ancient spiritual knowledge came to an end in the Middle Ages. Man came into possession of the consciousness-soul. He no longer had dream-knowledge. He drew ideas in full clarity of mind by his will-to-knowledge into the soul. This capacity first became a living reality in the sense-world. It reached a climax as sense-knowledge in natural science.

“The present task of spirit-knowledge is to carry the experience of ideas in full clarity of mind into the spiritual world by means of the will-to-knowledge. The knower then has a content of the mind which is experienced like that of mathematics. One thinks like a mathematician; but one does not think in numbers or in geometrical figures. One thinks in pictures of the spiritual world. In contrast to the ancient waking dream knowledge of the spirit, it is the fully conscious standing within the spiritual world.”

From Chapter XI: “At the close of the first stage of my life it became a question of inner necessity for me to attain a clearly defined position in relation to certain tendencies of the human mind. One of these tendencies was mysticism. As this passed into review before my mind at the various epochs in the evolution of humanity – in Oriental Wisdom, in Neo-Platonism, in the Christian Middle Ages, in the endeavors of the Kabalists – it was only with the greatest of difficulty that I, with my different temper of mind, could establish any relationship to it. The mystic seemed to me to be a man who failed to come into right relation to the world of ideas, in which for me the spiritual has its existence. I felt that it was a deficiency in real spirituality when, in order to attain satisfaction in one’s ideas, one plunges into an inner

world void of all ideas. In this I could see no road to light, but rather a way to spiritual darkness. It seemed to me a powerlessness in cognition when the mind seeks to reach spiritual reality by an escape from ideas, which, indeed, the spirit does not actually reside, but through which it enters human experience. And yet something attracted me toward the mystical strivings of humanity. This was the character of the inner experience of the mystics. They desire living contact with the sources of human existence, not merely a view of these, as something external, by means of ideal observation. And yet it was also clear to me that one arrives at the same kind of inner experience when one sinks down to the depths of the soul accompanied by the full and clear content of the ideal world, instead of stripping off this content when thus sinking into one's depths. I desired to carry the light of the ideal world into the warmth of the inner experience. The mystic seemed to me to be a man who cannot perceive the spirit in ideas and who is therefore inwardly chilled by ideas. The coldness which he feels in ideas drives him to seek through an escape from ideas for the warmth for which the soul has need."

"...I reached the conclusion that the form of expression in the sphere of the natural sciences consists in content-filled ideas, even though the content was materialistically thought out. I desired to form ideas which bore in the same way upon the spiritual as the natural-scientific ideas bore upon the physical. In this way I could preserve the ideal character for that which I had to say. This seemed to me impossible with the use of mystical forms; for these do not refer to the reality outside of man, but describe only subjective experiences within man. My purpose was, not to describe human experiences, but to show how a spiritual world is revealed in man through spiritual organs."

In the course of his work, Steiner made a complete break with the ancient approach. From Chapter XXXVI: “Even in this sphere we broke with ancient traditions. Our work was carried on as work must be carried on if one investigates in spiritual-content in an original manner according to the requirements of full clarity in the mind’s presence.” In a prefatory note to *Guidance in Esoteric Training*, Owen Barfield writes (referring to Steiner’s wife, Marie): “In 1947, thirty-three years after the first World War had interrupted the Esoteric School and two years after the end of the Second, Marie Steiner, in response to requests from members of the Anthroposophical Society, set about publishing the most important of the Contents of the Esoteric School. Numerous works on oriental training methods (Yoga, etc.) were making their appearance, and it was her object to set against these something from the European discipline of Rudolf Steiner. ‘By making available,’ she wrote in a letter, ‘examples of Rudolf Steiner’s careful, personally delivered advice, I wished to ensure that something could come forth from that Rosicrucian stream which is more in tune with the present age than decadent Indian and Tibetan methods.’”

For Rudolf Steiner, natural science (mathematics, physics, chemistry, biology, etc.) and spiritual science (methodology for achieving spiritual perception) went hand in hand. He derived “imagination, inspiration, and intuition” from the spiritual world, but these spiritual perceptions were subjected to and shaped by reason to establish their truth or validity and produce useful results. From Chapter III: “I felt duty bound at that time to seek through philosophy for the truth. I had to study mathematics and natural science. I was convinced that I should find no relationship between these and myself unless I could place under them a solid foundation of philosophy.”

Steiner emphasized the importance of meditation as a key ingredient in achieving spiritual perception. His approach to meditation, however, is quite different from the approach taken by the ancient traditions. A salient characteristic of the ancient (Eastern, Hindu) approach to spiritualism is meditation in which it is attempted to “clear the mind” of all thoughts, perhaps by concentrating on a single physical object, such as a rose, or a candle flame. It is an attempt to lose consciousness, and enter a trance-like state of dreamy existence. It is even suggested that the highest level of development is oblivion, attained when the self is obliterated. A major problem with this approach is that the meditator receives all sorts of subjective information or “messages” (or ideas or images or inspiration) and there is no objective way of sorting out truth from falsehood or fact from fiction – or wise from unwise – by way of the informative process itself (since the information is subjectively received, rather than objectively obtained by physical observation and measurement). In addition to being noted for their truths and insights and help, “spirit guides” are notorious for their lies and deceptions and evil.

Steiner’s approach involves meditation that focuses on active, conscious thinking and logic – perhaps concentration would be a better word for the process – in the “clear light of day.” While dreamy meditation may have been appropriate for mankind in an earlier age, before the tremendous increase in the content and methods of natural science, it was no longer an appropriate approach in the “age of reason.” The subjective approach is extremely powerful, but its product must be subjected to objective review and analysis – some ideas, even those resulting from mystic visions, are simply wrong. Einstein obtained the idea of relativity not by means of physical experimentation, but

simply by thinking about it (e.g., while riding on a bus). It was his responsibility, however, and the responsibility of mankind, to subject this idea to objective tests, prior to accepting its validity. (As Michael H. Hart (in *The 100: A Ranking of the Most Influential Persons in History*) observed, “The general theory of relativity stands apart in several ways from all other scientific laws. In the first place, Einstein derived his theory not on the basis of careful experiments, but rather on grounds of symmetry and mathematical elegance – on rationalistic grounds, as the Greek philosophers and the medieval scholastics had attempted to do. (In doing so, he ran counter to the basically empirical outlook of modern science.) But whereas the Greeks, in their search for beauty and symmetry, had never managed to find a mechanical theory that could survive the crucial test of experiment, Einstein’s theory has so far successfully withstood every test. One result of Einstein’s approach is that the general theory of relativity is generally acknowledged to be the most beautiful, elegant, powerful, and intellectually satisfying of all scientific theories.)

In the world of today, subjective insights and ideas gleaned from the realm of meditation or dreams or the subconscious must be examined with clarity of thought in focused, conscious reflection. This is crucially important, since, unlike the scientific method of natural science, spiritual science uses, as the data-collection instrument, a completely subjective and intangible tool – the human mind. While the potential rewards from this approach are unlimited (e.g., the insights and contributions of Newton, Maxwell, Edison and Einstein), the potential for deception is also great. From Chapter XXII: “I was able truly to refute for myself the opinion that in such meditation one becomes subject to a form of autosuggestion whose product is the resulting spiritual experience. ...As one establishes absolute exact

truth in a discriminating consciousness, so I had already done for what is here brought forward before there could have been any question of autosuggestion. Therefore, in the case of what was obtained by meditation, the question could have to do only with something whose reality I was in a position to test prior to the experience.” From Chapter XXX: “...I never by any means penetrated into the spiritual sphere in a mystical, emotional way, but desired always to go by way of crystal-clear concepts. Experiencing of concepts, of ideas, led me out of the ideal into the spiritual-real.”

In an earlier age, the tools of analytical science were not available to test ideas gained from spiritual insight. And prior to the age of technology, the ideas under consideration were often not technical or physical in nature and not subject to physical validation. The ideas and ideals of Christ, for example (love one another, love your enemies, resist not evil, the Golden Rule (also of Buddha and Confucius): do unto others as you would have them do unto you) fall in the ethical domain. It is not possible to test the “truth or falseness” of ethical guidelines, as it is the truth or falseness of a physical idea (e.g., the theory of electricity and magnetism, or the theory of relativity). The worth of such ideas, however, may certainly be subjected to scrutiny, using reason and common sense. The point is that human knowledge of nature and analytical skills have increased dramatically, and it is important and necessary to use that knowledge and those skills to examine the content and worth of the ideas that continue to flow from the spiritual world.

All ideas stem from the spiritual world. Some are true and some are false. Some are of great value and some are worthless. Some are good and some are evil. If we seek the truth, none must be accepted at face value or uncritically. Ideas are inspirations – hints of paths to explore. The choice

of the path, and the exploration, are up to us. With sufficient application, meditation will produce ideas and inspirations. With thoughtful reflection and critical examination, good ideas will lead to better ones, and to the truth or other destination that we are seeking.

It is important to recognize that meditation produces most useful results when combined with serious contemplation, hard, focused concentration, and diligent follow-up. The theory of relativity did not simply “pop into” Albert Einstein’s head, in an “empty mind” engaged in casual daydreaming or an Oriental-style deep trance. Nor did Thomas Edison’s brilliant inventions simply appear “out of the blue” and in final form – Edison investigated thousands of false leads in the course of his inventing the light bulb. Their meditation / contemplation was a means of generating ideas, which had to be analyzed and evaluated by rational means (scientific analysis and common sense). The same was no doubt true of Newton, Maxwell, and other great intellects. To find a meaningful path and destination requires inputs from both the spiritual and the physical worlds. The spiritual world provides the ideas, and the physical world the manifestation, the realization, the proof-of-concept, the fulfillment and the excitement. But nothing happens without work – an investment in meditation, an investment in critical review and exploration of ideas, and an investment in implementation.

An Interesting Question

A few days ago (October 16, 2002), my wife and I were awake in bed, with some time before we had to rise for the day. My wife asked me what I was thinking about, and I told her something about Rudolf Steiner. I had been reading a lot of Rudolf Steiner recently, and had mentioned some of his concepts to her in recent days. She asked me how I

came to know about Rudolf Steiner. I thought for a moment, and told her that it was a long train of events that had led me to Rudolf Steiner. Steiner (1861-1925) was a German (actually, Austrian, from what is now Croatia) philosopher of the late nineteenth and earlier twentieth centuries. He is not widely known to the English-speaking world. I had heard the name, but, until recently, had not read his work. In a few sentences, I related to my wife how I came to know about Rudolf Steiner. The sequence of events is not remarkable, but it is an interesting example of how seemingly insignificant events may eventually lead to something significant. Here is the story of how I came to know Rudolf Steiner. It is a single thread in the fabric of my life.

My Quest to Know the Meaning of Life

Throughout my life I have, at many times, as all of us do from time to time, wondered at my existence and the meaning and purpose of life. I am, of course, still on the “journey” of life. I have found some insight, but there is still much that I wish to know and understand. As a boy, I took note of the various methods by which the meaning of life might be obtained, and I read as much as I could on subjects such as yoga, meditation, and hypnosis. (I was probably the only student at Spartanburg High School in the 1950s to write a term paper on yoga.) My family lived in small towns when I was growing up, and the main sources of my information were the school and public libraries. This was the 1950s, and there was not a great deal of information available on these subjects in these repositories (e.g., a small red-brick Carnegie Library in Spartanburg, South Carolina, demolished long ago). Bookstores were not an option, since I had little money to spend.

When I was about 14 or 15, I tried meditation, as described by the “Eastern” tradition. I reached once the point where I felt my mind starting to float away. I did not like the sensation of losing control, however, and because of this, and perhaps because of a fear of the unknown, I stopped. Although I attempted meditation of this sort later in life, I never again reached this stage.

When I was 11 years old, in January of 1953, my family moved from Kingston, Ontario, Canada, to Lakeland, Florida. Our next-door neighbors were an older couple, Helen and Herbert Robertson. Mrs. Robertson was one of two individuals whom I have met in my life who projected a presence of profound peace (the other was Mary, a Christian Scientist who died in dignity and peace of breast cancer). She was calm, smiling, pleasant, and I felt good just being near her. We did not interact very much – she had conversations with Mother, but I was not part of them.

Mrs. Robertson told Mother about Edgar Cayce, “the sleeping prophet” of Virginia Beach. None of us had heard of Edgar Cayce, but Mrs. Robertson was obviously very impressed with him (he had died a few years before). Since I was not part of these discussions, I did not learn anything about Cayce at that time, other than the fact that he had impressed Mrs. Robertson very much. I remembered the name Edgar Cayce simply because Mrs. Robertson held him in high regard, and she had a remarkable presence that I would not forget.

Years later, I came across the book, *There Is A River*, by Thomas Sugrue, about the life of Edgar Cayce. I purchased the book and read it. I now knew something of Edgar Cayce. He is called the “sleeping prophet” because he could conduct medical diagnosis while in a trance, reciting to a

stenographer. He also made a number of predictions about future world events or world changes. Some of his medical diagnoses were remarkable. His predictions of world events to come were not impressive (he assigned dates to his predictions, and the predicted events did not happen on the predicted dates (or, if they did happen, they were unnoticed and of little significance or consequence)). His observations on “cosmic history” from reading the Akashic Records (Akasha Chronicle) were similar to those of other mystics (e.g., Blavatsky, Steiner).

I never paid much attention to meditation after my single teen-age attempt, until the “Transcendental Meditation” fad arose in the 1960s or 1970s. I have never had much “energy,” and TM promised significant energy benefits, so I signed up for a course. It was a total bust – no results whatsoever.

Over the years, I bought a few books on autohypnosis and autosuggestion. Early on (high school), I had read Napoleon Hill’s book, *Think and Grow Rich*. I was impressed with Hill’s motivational philosophy, and accepted it as a reasonable basis for getting what you want out of life. I generally got what I wanted out of life. I wanted to go to college and study mathematics, and I received a General Motors full scholarship to Carnegie Institute of Technology (now Carnegie-Mellon University, CMU), where I earned a Bachelor of Science degree in mathematics. I wanted a PhD in mathematical statistics, and I received a NASA fellowship to study at the University of North Carolina at Chapel Hill (the oldest, largest, and most comprehensive statistics department in the US), where I earned a PhD degree in statistics. I wanted a wife and children, and I was blessed with those. I wanted a career as a consulting statistician, and I achieved that. I wanted a contract research firm, and I

realized that, too. As a boy, I wanted to see the Caribbean and Africa, and I have seen much of those areas of the world. I wanted to understand music and play the guitar by ear, and I achieved that, also.

I should point out that I did not simply receive what I wanted, but I generally received it in extreme abundance, in superlative quality. During my undergraduate years, I worked summers for a statistician in a physics research laboratory (Deering Milliken Research Corporation). I became quite interested in statistical experimental design. After taking a course in mathematical statistics at Carnegie Tech in my junior year, I knew that statistics was what I wanted for a career. While a senior at CMU, I examined the program of every graduate school in the US that offered a PhD in statistics (there were 21 of them at the time). As I mentioned, I received a fellowship to study at the school of my choice, the University of North Carolina at Chapel Hill. But it was more than this. I obtained all that I could have hoped for and asked for. I wanted to study the theory of experimental design, and I was privileged to study under Professor Raj Chandra Bose, the “father” of the mathematics of experimental design. Prof. Bose had a brilliant intellect – in addition to establishing the mathematics of experimental design, he solved one of Euler’s conjectures (on the existence of a complete set of latin squares). He developed the Bose-Chaudhuri-Hocquenghem (BCH) error correcting codes. (The BCH codes are a practical solution to the problem of designing codes to implement Claude Shannon’s “coding theorem.” Shannon proved, in 1948, that it was possible to transmit information over a noisy communication channel at a maximum rate (called the “capacity”) with as low an error rate as desired. The only problem was that his theorem was an “existence” proof, not a “constructive” proof. He proved that it was possible, but he did not show how. R.

C. Bose (in 1960) showed how.) The point is that I was given the opportunity of studying under the world's foremost authority on experimental design. And, I not only was awarded a PhD degree in statistics, but was able in my doctoral dissertation to accomplish a significant technical result – discovery of the best known class of synchronizable error-correcting codes.

In my professional career, it was more of the same. Although trained to be a professor of mathematical (theoretical) statistics, I was strongly attracted to the practical world of research and development, and I left the university environment upon completion of my doctoral studies to work in the field of consulting. In 1967, I went to work for Lambda Corporation, which had been established a few years earlier by Hugh Everett III, George Pugh, Larry Dean, and Bob Galiano. In my university studies, I had enjoyed statistical decision theory, game theory, and Lagrangian optimization, but it was always taught in an “analytical” context, under ideal conditions (analytical representations in terms of convex, continuous, differentiable functions). Hugh Everett extended the concept of Lagrangian optimization (constrained optimization) to the case of nonconvex, discontinuous, nondifferentiable functions). This was a tremendous advance, and enabled the computer (numerical methods) to be used to find optimal solutions to very large and very difficult constrained-optimization problems (such as occur in global warfare). Along with Everett, George E. Pugh extended the theory to two-sided optimization problems. The theory could then be applied to solve two-sided constrained optimization problems, such as mathematical games under resource constraints. This was a very significant extension of Everett's “Generalized Lagrange Multiplier” (GLM) theory,

since it enabled the determination of optimal strategies and tactics for waging large-scale wars.

Once again, the bounty of my opportunity was maximal. I had the opportunity to work with one of the most brilliant physicists of all time, and to learn firsthand how to apply the GLM methodology. The results were beyond expectation. First, I was able to determine the optimal strategy for deploying attacking and defending missiles in global missile warfare, under the realistic but mathematically-very-intractable conditions of subtractive defense of overlapping defense areas (“islands”). This was an application of the Everett-Pugh method of double generalized Lagrange multipliers. I then worked on finding a solution to a nonzero-sum formulation of warfare. John Nash (of *A Beautiful Mind*) had proposed an elegant solution to the problem of solving a nonzero sum game – the Nash “bargaining” or “equilibrium” solution. The only problem was that his solution (just as in the case of Shannon’s coding theorem of information theory) was nonconstructive. He proposed conditions that an optimal solution should possess, but he did not show how to find the solution. The problem that I addressed, and solved, was to find a methodology for finding the Nash bargaining solution in the case of warfare between two combatants. This I was able to do (an approximate solution, which works quite well in cases of practical interest).

The point to the above description is that I was able not only to achieve objectives that I set for myself, but I was able to achieve them in exceptional circumstances, working with exceptional people. (It is obvious why Bose was never awarded a “Nobel Prize” (for the BCH codes, for solving Euler’s conjecture, or as “father” of the mathematical basis for experimental design) since he was a mathematician (since a mathematician had an affair with Nobel’s wife, there

is no Nobel Prize for mathematics). Why Everett never won the Nobel Prize for Physics – either for his work on Generalized Lagrange Multipliers or for the Parallel Universe Theory – I shall never understand. Of course, the GLM theory falls within the field of mathematics! And, I suppose, so does theoretical physics! Or was it because he arrived at a major scientific conference driving a Cadillac with cow horns? If you think that Everett's generalized Lagrange multipliers are not important to your life, consider this: Everett's multipliers (the one-sided GLM method and the Everett-Pugh two-sided (min-max) multiplier methodology) are the theoretical basis for determining which cities are targeted in global nuclear war, and which cities are defended by antimissile defenses. If global nuclear war breaks out, it is Everett's theory that will determine whether your city is targeted or defended, and whether you live or die.)

Whenever I had a problem – of any sort, whether technical or social – I would “sleep on it” (concentrating on the problem before going to sleep, and expecting an answer in the morning) and the answer – or at least the direction to an answer – would present itself in my mind when I awoke the following morning. I truly believe, as Steiner and others have noted, that the dream life provides the “inspiration, intuition, and imagination” to further our waking existence. I have used this approach to solve many problems. It is – combined, of course, with hard work – the basis for my finding solutions to every significant problem that I have set for myself. These include not only my PhD dissertation and my work in strategic analysis, but also in whatever other field of endeavor I chose. I was upset at the passage of the 1986 US Tax Reform Act, and so I wrote a 427-page book on tax theory. In this book, I presented not only a better tax system for the US, but also a systems-engineering approach (“tax engineering”) to designing a tax system for any country or

state. In 1993, I became sufficiently concerned over the overpopulation problem to write my book, *Can America Survive?* This book describes a long-term sustainable approach to planetary management. Subsequently, I set forth the theology for the Church of Nature, and established The Omega Project, to bring about the establishment of a sustainable planetary management system. All of these solutions/accomplishments were enabled by conscious meditation and “sleeping on the problem.”

I should point out that meditation and the Napoleon-Hill-Think-And-Grow-Rich approach to realizing your desires (thinking, desire, faith, autosuggestion, specialized knowledge, imagination, organized planning, decision, persistence, etc.) has its limits and liabilities. It is very important, of course, to be very careful about what you wish for – you just might get it! – and in an unusual and unexpected way. As Rudolf Steiner observed (in *Knowledge of Higher Worlds and Its Attainment*), “Special attention must be paid in esoteric training to the education of the life of desires. This does not mean that we are to become free of desire, for if we are to attain something we must also desire it, and desire will always lead to fulfillment if backed by a particular force. This force is derived from a right knowledge. *Do not desire at all until you know what is right in any one sphere.*” If you apply these methods, for example, to seduce women, you will indeed seduce many women, but you may also find out that, as the song says, “the pleasure ain’t worth the pain.” You may also lose the ability to appreciate sex as a mystical experience, and you may lose the love and support of your wife.

Things do not happen right away, or in the way that you expect. I had always wanted to learn to play the guitar by ear – to be able to strum along to any song, in any key. I

had played the trombone in junior and senior high school (reading from printed music), and so I assumed that it would be an easy matter to play the guitar by ear. It was not. I took guitar lessons on three separate occasions over the course of twenty years, and could not play by ear in the least. I could play a few songs, from music, or I could memorize a few songs, but I could not simply accompany singing with the guitar. There was no transference from reading music to playing by ear. Over the year-2000 date change, I was director of information technology at the central bank of Botswana, and could not leave for the customary Christmas vacation. So when my wife left for a six-week vacation back in the US, I decided to learn to play the guitar by ear. To do so, I had to understand the theory of music. Well, the theory of music is not presented well in any music book that I have ever read. It is presented as a seemingly arbitrary set of rules. There is no explanation about why there are twelve tones in the (Western chromatic) musical scale, or why certain tones go together to form good-sounding chords, or why certain chords are used in songs. But there are physical and mathematical reasons for all of these. After thinking / reflecting / meditating / concentrating on this problem, I figured out the theory of music, and obtained answers to all of my questions. Understanding music theory was the key to learning to play by ear. By the time my wife arrived back from vacation, I could play any popular song by ear, in any (natural-for-the-guitar) key. I was so pleased at finding out the key to this problem that I wrote a 50-page article on "How to Play the Guitar by Ear," and placed it on my web site. Believe it or not, this article receives the second-highest number of "hits" on my web site (after *Can America Survive?*), and generates the most e-mail response.

There are several points that I wish to make here. First, I was able not only to learn to play the guitar by ear, but to play virtually any popular song in any (standard) key – I accomplished my objective fully. Second, I now understood the theory of music so well that I was able to write an article describing my understanding and approach so that others could also learn what I had learned. I had not only accomplished my objective, but I had accomplished it in extreme bounty and superlative quality. Third, the process was not instantaneous or spontaneous, and it involved much concentrated, hard work (thinking, reflection, meditation, investigation). Just wanting to play by ear, and even taking lessons – even several times over a twenty-year period – was not sufficient. Reading books on how to play the guitar, and on music theory (e.g., the “circle of fifths) was not sufficient. It took six weeks of concentrated thought to solve the problem and accomplish the result. Finally, all of this was accomplished even though I have no natural musical talent. As I mentioned, I played the trombone in high school, but I was an average player. I enjoyed playing the baritone horn with a group of musicians at the EMETF, and in the band at the Sierra Vista Community College, but this was all reading music for a “one-note” instrument. And I learned to play the keyboard (from music) after a fashion. But none of this helped me to play the guitar by ear. It was only by acquiring an understanding of music, through meditation / concentration, that I was able to accomplish this goal.

This last point should not be missed. It is possible to acquire a significant measure of understanding in any area of endeavor, no matter where your natural talents may lie. When I became upset over the US tax system, I wrote a long book on tax theory, including development of a systems-engineering approach to designing tax systems, although I am not a “degreed” economist. And, from the comments

that I receive on my guitar article, it appears that my observations on the theory of music are not available elsewhere. Once again, although I am not a “degreed” musician, I was able to obtain a deep understanding of music theory, simply by thinking about it.

Over time, I came to realize that, while I have a great deal of influence over what happens to me and over what I can achieve, I have very limited ability to control or influence or protect others. All of my prayer and mediation was not able, for example, to save my first wife from dying of breast cancer, or to keep my youngest son from being paralyzed in an automobile wreck, or keep other family members from harm. I came to realize that, although you may wish to pray for many things, the most important thing that you may ask for, and expect fulfillment of, is the strength to carry on.

Although conscious meditation works for me, I never achieved the ability to meditate in the “mystical” sense that I was led to believe was the intended goal – a profound, spectacular experience in which the hidden mysteries of life would be revealed. Over the years, the “New Age” movement gradually arose, and there were more and more books on meditation and spiritual science in the bookstores. Eventually, there were whole “New Age” sections, brimming with hundreds or thousands of books on every aspect of religion, spiritualism, metaphysics, mysticism, and the occult. I purchased a number of these, and from time to time would attempt meditation, or even “astral projection.” Always without the slightest hint of evidence that there was anything there.

On the occasions when I attempted to achieve mystical results, the meditation process that I employed was in the nature of autohypnosis or autosuggestion (or, more

specifically, contemplation about a problem before going to sleep at night), as is described in many books (on hypnosis, self-development, health, and motivation – not just on “New Age” topics). Apart from the teenage experience I mentioned earlier, I experienced nothing out of the ordinary. At a large party in Botswana, a professional hypnotist from London offered to hypnotize volunteers from the audience. I volunteered, along with half a dozen or so others. Out of all of the volunteers, the hypnotist looked at me and said, “I cannot hypnotize you.” “Why did he say that?” I have often wondered.

In the course of my life, I have experienced, on a daily basis, the same hunches, intuitions, déjà-vus and coincidences that we all have from time to time. In addition, however, I have had a single experience of a psychic nature that was truly remarkable. It was Christmastime in 1988. At the time, I was employed as director of research and development and principal scientist at the US Army Electronic Proving Ground’s Electromagnetic Environmental Test Facility in Sierra Vista, Arizona. Things were not going well – my wife was dying of cancer, and I was considering alternatives to the position in Sierra Vista (Sierra Vista was a small town of 30,000 people in southern Arizona, and it appeared that we would have to move back to Tucson for easier access to medical treatment). It was either Thursday, December 22, 1988, or Friday, December 23. Most of the EMETF staff were gone, and I was sitting at my desk taking a break from my usual duties. In my spare time, I had been working on a proposal to develop a new kind of artificial neural network. I was planning to submit a proposal to the US government’s Small Business Innovation Research program, and had drafted a proposal. The only problem was that there was a major technical issue that I had not resolved, and without it I could not proceed. The proposal had to be mailed in a few

days. The nearest library that would have the information that I needed was the library at the University of Arizona in Tucson. But I had called the U of A library, and it was closed for the Christmas holidays. I was excited about submitting this proposal, but it seemed that there was nothing that I could do to complete it satisfactorily. You will recall that this was before the Internet was in general use – my only reasonable source of information was the U of A library, and it was closed.

The information that I needed was an article by the Russian mathematician, A. N. Kolmogorov, entitled, “On the Representation of Continuous Functions of Many Variables by Superposition of Continuous Functions of One Variable and Addition,” published in the journal Dokl. Akad. Nauk SSSR, 114 (1957), AMS Translation, pp. 55-59, 1957. Although many advances had been made in the theory of artificial neural networks, since the late 1960s, and although they had been used to achieve impressive accomplishments in commercial applications (e.g., pattern recognition, speech processing, robot motion control, classification, adaptive signal processing, adaptive control) they had not realized use in major practical defense applications (e.g., automatic target recognition, classification and identification; correlation/tracking; fighter aircraft control (aircraft collision avoidance and evasive maneuvers); “smart-bomb” guidance; multisensor fusion; object identification; threat and situation assessment; option generation in command and control and operational and tactical planning, scenario generation; and the solution of difficult problems in statistics and optimization). My concept was to develop a new type of neural network (which I called a “structured neural network”) that would address some of these military problems. But, for my proposal to be credible, I needed some information from Kolmogorov’s article. (For the mathematically inclined, here

is the gist of Kolmogorov's article. The feasibility of using neural networks to represent systems rests on theoretical grounds, not just on empirical examples. Kolmogorov's continuous function representation theorem implies that a continuous real mapping from the unit cube in m -space to n -space can be implemented by a three-layer neural network in which the middle layer has at most $n(2m+1)$ neurodes (the input layer has m neurodes, and the output layer has n neurodes). The proof of this theorem is an "existence" proof; it is not a "constructive" proof. That is, although it guarantees that a three-layer neural network of modest size exists that can represent a continuous mapping, it does not tell how to construct the network. Although it does not explicitly tell how to construct a neural network to implement a specific transformation, the implication of Kolmogorov's theorem is profound. Although Kolmogorov's theorem does not provide a ready-made neural-network solution to a problem, it justifies the attempt to construct one. Already (in 1988), numerous methods had been developed for constructing neural network representations of systems.)

I can no longer remember just what it was that I needed to know about Kolmogorov's theorem, but it was important at the time. I was deep in thought, wondering what I could do to overcome this difficulty, perhaps somewhat discouraged at my inability to acquire the information I needed, when the telephone rang. It was Randy Russell, calling from Boston, Massachusetts. Randy Russell had been the first employee of my firm, Vista Research Corporation. I had hired him in 1977 or 1978 to work on a project that I had in West Virginia. He worked with my firm in Charleston, West Virginia, and later in Alexandria, Virginia, until 1981, when I closed it down and moved to Tucson, Arizona. In West Virginia, he worked on evaluating the effectiveness of social services; in Alexandria, he worked on the development of a

microsimulation forecasting model for the Office of Human Development Services; I also sent him to work on a project in the Central African Republic, shortly after Emperor Bokassa's departure.

Except for Christmas cards, I had not heard from Randy, as I recall, since 1981, and so I was surprised, and delighted, to hear from him. It was simply a social call. He had just decided, out of the blue, to call me, to see how I was doing. We chatted for a while, and then he asked me what I was doing. I told him that at that very moment I was in fact brooding over the fact that I could not complete a proposal that I was quite involved in, because I was missing some key information. He asked me what I was missing. I told him that it was an article written by A. N. Kolmogorov about his continuous-function-representation theorem. I also mentioned to him that I had seen a reference to this article in an article, "Neurocomputer Applications," written by Robert Hecht-Nielsen and published by Maureen Caudill and C. Butler in "Proceedings of the First International Conference on Neural Networks," IEEE Service Center, Piscataway, NY, 1987. He said, "That's amazing! I just happen to have a copy of that article right here on my desk!" I could not believe my ears! Randy Russell had a master's degree in social science. He was not a mathematician, or even a mildly technically oriented person. I asked him how he could possibly have this article on his desk. He told me that he worked for a firm (The Research Group?) that did investigations of new technologies, and that they had just received a packet of information from a Dr. Robert Hecht-Nielsen, about a business proposal. Hecht-Nielsen had included a copy of the article by Kolmogorov in the packet. A short time later, I had a faxed copy of the article.

This could not possibly have been a coincidence. Randy was not a technical person. He had not called me since I moved to Arizona in 1981, and he has not called me since. I knew nothing of neural networks when he and I worked together. He had received exactly the information that I needed – an obscure article on mathematics written by a Russian mathematician – and decided to call me, out of the blue, just when I needed that information and had no other way of obtaining it.

(A side comment... Robert Hecht-Nielsen, mentioned above, was a pioneer in the field of neural computing. In 1986 he and Todd Gutschow founded HNC Software, Inc. – the firm that had no doubt sent Randy the information on Kolmogorov’s theorem. HNC Software went on to great success in neurocomputing. In 1995 it had one of the country’s most successful initial public offerings, and it was listed by Fortune magazine as one of the 100 Fastest Growing Companies in 1999. HNC’s flagship product is Falcon, a neural-network system widely used by the banking / credit-card industry for performing credit scoring. HNC was recently acquired by Fair, Isaac and Company, one of the top 200 information-technology companies of the world (and the source of “FICO” credit ratings).)

The Journey Continues; Finding Rudolf Steiner

In 1993, my (second) wife and I moved to Malawi, where I worked on a project funded by the US Agency for International Development. One Saturday morning, lying in bed, we discussed what to do for the weekend. We had heard that the Zomba Plateau, in southern Malawi, was a pleasant weekend destination, so we decided to go there for the weekend. The place was nice, but I was appalled at the destruction of nature that was taking place – native forests

being clear-cut and replaced by pine-tree plantations devoid of animal life. I was so upset at this that when we arrived back home I started a book on overpopulation. My wife had fallen ill that day, and I wrote (typed on the computer) for sixteen hours straight. That was the beginning of my book, *Can America Survive?*, which I finally (after much evolution and two complete rewrites) finished in December of 1998.

While working on *Can America Survive?* I purchased about 600 books on overpopulation and related topics, such as environmentalism, war, and politics. Since the book became concerned with the “last days of planet Earth,” these reference books included more than a few on eschatology and the meaning and purpose of life, including books on Freemasonry, prophecy, Nostradamus, Sir Isaac Newton, D. H. Lawrence, Arnold Toynbee, versions of and commentaries on the Bible and Koran, and many other topics, including Edgar Cayce.

In one of the books on Edgar Cayce, there was a “reading” concerning the future government of the Earth. Cayce’s source (the Akashic Records) suggested that the future government of the planet would be according to the principles of Freemasonry, as embodied in the Great White Brotherhood. I was puzzled at this reference, and looked for additional information in other sources. I found nothing at all on the “Great White Brotherhood.” At that point, I forgot about it.

Time passed. My wife and I moved to Botswana, back to the US, and then to Zambia. I posted a few new articles to my website – The Omega Project, an article on war and peace, and an article on strategy for global domination. One day, I received an e-mail from someone, informing me that the Cassiopaea website

(<http://www.cassiopaea.org/cass/adventures30.htm>) had posted a link to my web site, and suggesting that I take a look at it. It referred to my having worked with Hugh Everett III at Lambda Corporation. It briefly described my web site, and characterized it as an example of synarchy. I had not noticed this word before, and paid no attention to it. I did, however, write a short piece on Hugh Everett, which I thought clarified a point of history about him.

I did not think of “synarchy” again. One day, my wife had a massage at a health studio at the Lusaka Holiday Inn. A few days later, she mentioned that they had some books for sale, that I might be interested in. Some time later, I dropped by to take a look at them (my office is close to the Holiday Inn, and I have lunch there frequently). To my amazement, the first book on the display was *Omraam Mikhaël Aïvanhov, Master of the Great White Brotherhood*, by Agnes Lejbowicz. I purchased that book, and a number of others by Aïvanhov. At several places, Aïvanhov mentioned synarchy and the Great White Brotherhood (or Universal White Brotherhood). I was curious about this, and checked the Internet for the key words “synarchy” and “Great White Brotherhood.” There, I found some information about Marquis Joseph Alexandre Saint-Yves d’Alveydre, who introduced the term “synarchy” (in the late 1800s) to describe a worldwide system of government similar to that discussed in Plato’s *Republic*. This literature included references to the Great White Brotherhood in the mystical land of Agharta (Agartha) or Shambhala (Shangri-La). It also included references to H. P. Blavatsky, Alice Bailey, Annie Besant, Max Heindel and Rudolf Steiner. While working in Charlotte, North Carolina, in 2001, I had noticed books by Blavatsky and Bailey in a local bookstore, and I had purchased and read them. These books were about the philosophy of The Theosophical Society, a theosophical

organization set up by H. P. Blavatsky. (Theosophy – wisdom about God – is an old term, introduced several hundred years ago.) I was not impressed by these writings. I had not noticed any books by Annie Besant or Rudolf Steiner in bookstores.

I imagine that I subconsciously assumed that Rudolf Steiner's writings were along the lines of Blavatsky's, and I made no attempt to locate them. Over the following weeks, I read many of Aïvanhov's books (unlike Steiner's works, Aïvanhov's books are transcripts of oral deliveries, and they read very fast). In one of them (*A New Dawn: Society and Politics in the Light of Initiatic Science, Part 2, Complete Works – Volume 26, Prosveta, 1999*), I read the lines, "What an extraordinary thing the Universal White Brotherhood is. What extraordinary power it has to vivify and exalt us, to fill us with awe, wonder, and enthusiasm. The great clairvoyant, Rudolf Steiner, saw this. He said, 'When I have gone, someone else will appear whose work will be marked by enthusiasm.' The keynote of Steiner's work was not enthusiasm; it was philosophy, science. I know nothing about either philosophy or science – or anything else, for that matter – but I am capable of firing you with enthusiasm."

At this point, I was indeed curious about Rudolf Steiner. I was puzzled that I had not seen his writings in US bookstores, in view of Aïvanhov's glowing praise. I went once more to the Internet, to look for information on Rudolf Steiner. I found a lot. I downloaded several of Steiner's books from the Rudolf Steiner Archive, and proceeded to read them. I was quite surprised at what I read.

Here was a man, a scientist, who had spent his entire life investigating spiritual science, from the "Western" point of view of a natural scientist. And he completely rejected the

“Eastern” approach to meditation, which had apparently produced so little result for me. Instead, his approach was exactly what I had found that had worked. I meditated, before sleep at night, by concentrating on matters of interest, and in the morning I often found new inspiration or direction, or, on occasion, even a complete answer. In my meditation I had never found “guides” or “contacts” or “past lives of previous incarnations.” I had, however, obtained much inspiration and insight that worked in concert with my scientific approach of deductive and inferential logic, mathematics, and systems engineering, to find answers to the problems that I set for myself.

In retrospect, I must conclude that meditation does indeed work. It may not produce trances or graphically spectacular results (e.g., guides, visions, astral projection), but it does indeed work. And, as Rudolf Steiner observed, the type of meditation that works well in today’s world of logic, mathematics, and the physical sciences, is meditation whose results (ideas, inspirations) are subjected to and stand up to rigorous analysis and assessment, using reason, in the cold light of day.

Rudolf Steiner’s last published communication was: “In the age of natural science, since about the middle of the nineteenth century, the civilized activities of mankind are gradually sliding downward, not only into the lowest regions of nature, but even beneath nature. Technical science and industry become sub-nature. This makes it urgent for man to find in conscious experience a knowledge of the spirit, wherein he will rise as high above nature as in his sub-natural technical activities he sinks beneath her. He will thus create within him the inner strength not to go under.”

While I feel that I have, from personal experience, established or exemplified the worth and validity of Dr. Rudolf Steiner's insights in spiritual science – particularly with regard to meditation – it is clear that he, as all men, had limitations. He died in his sixty-fourth year. The last year of his life was one of his most productive. He drove himself, however, to the point of physical exhaustion, collapsed, and died within a month. The physician could not – or would not – save himself. His legacy, however, lives on.

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