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The Editors

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FOREWORD

I have discovered that when we ask God for help with a problem, the solution can arrive in spectacular fashion. Such was the case with Scientific Symposium II.

This event, dedicated to the exploration of scientific thought by students of *The Urantia Book*, was to be a continuation of the initial effort by the Nashville study group in presenting Scientific Symposium I at Belmont College in May, 1988. Unfortunately, an incident occurred during a regional conference held a year later at the school which resulted in the termination of the use of that facility as a site for conferences by the Nashville study group.

Many months passed with no progress in finding another site in Nashville for the second symposium, which was tentatively scheduled for May, 1991. By the spring of 1990, the location had to be resolved so that the symposium could be announced at the International Conference held at Snowmass, Colorado.

I discussed these problems with Berkeley Elliott from Oklahoma City while we were attending the 1991 spring regional conference in Leesburg, Florida. Berkeley mentioned possible sites in Oklahoma City, and I asked her to check into them. Within a week, she had located two universities that could accommodate our group during May.

This was a pleasant turn of events for me, since I had become a member of the First Society of Oklahoma a couple of years earlier. Scientific Symposium II became a project of that society and was scheduled for May, 1991 at Oklahoma City University.

This symposium was a continuation of a threefold theme based upon a passage on page 1306 in *The Urantia Book* which discusses human progress in planetary development. "Man's Increasing Control" was the topic for the second symposium.

Many talented speakers with a scientific background offered their expertise, ranging in subjects from the social sciences to hard-core physics, with one speaker dallying in the magick of it all. The second symposium met goals which had been envisioned in early stages of planning the first symposium. First, a comparative analysis of scientific thought in *The Urantia Book* with prevailing thought in the scientific community was the subject of a paper delivered by Dr. Irwin Ginsburgh, an engineering physicist from the Los Angeles area. Second, a presentation by a scientist not involved in the mainstream of Fellowship activities was made by Brendan O'Regan of the Noetic Institute of Sciences in the San Francisco Bay area. Many thanks to Larry Geis for his time and effort to recruit Mr. O'Regan.

The work of volunteers in the Oklahoma Society in preparing and hosting the symposium was exemplary. Many travelers from the Oklahoma City airport would join me in thanking everyone who provided transportation to and from the university. The spirit of serving was beautifully demonstrated by the musicians and singers who shared their talents during the event: Tom Allen, David Glass, Susan Wright-Aldridge, Richard Randall, Barbara Hester, Terry Pursell, Carol Hay, Joan Batson-Mullins, Bill Granstaff, Phil Calabrese, Dan Young and Waldine Stump. And Harry McMullan deserves kudos for his gracious manner as master of ceremonies.

A special note of thanks also to Kurt Cira of Milwaukee; Dennis Brodsky of Amherst, Wisconsin; and Mike Hadilek of Phillips, Wisconsin for videotape production of the symposium. Recognition should also be given the Fellowship office staff who handled registration and related finances. And thanks to Dianne Menard, who has recently moved to Philadelphia from Oklahoma City, for transcribing tapes of certain presenters.

The symposium would not have been possible without the volunteer efforts of the speakers, who invested many hours, long-distance telephone calls, air fares and other expenses in order to offer us their expertise. My sincere appreciation for their efforts: Larry Mullins of Boulder; Joy Dirham of Los Angeles; Bill Granstaff of Oklahoma City; John Lange of Fort Smith, Arkansas; Chuck Hansen of Silver Spring, Maryland; Dave and Marta Elders of Darien, Connecticut; Michael Wisenbaker of Dallas; Paul Herrick of Jupiter, Florida; Irwin Ginsburgh of Los Angeles; Philip Calabrese of San Diego; Dan Massey of Boston; Carol Hay and Joan Batson-Mullins of Boulder; and Brendan O'Regan of San Francisco.

Scientific Symposium III—Man's Universe Integration—is tentatively scheduled for May, 1994, at Oklahoma City University. Hope you can join us!

—Melissa Wells, Largo, Florida

The Ultimate Frontier: The Barrier of Mediocrity

By
Larry Mullins

A reader of The Urantia Book *for over 20 years, Mullins is president of a marketing and management consulting firm in Boulder, Colorado.*

It is good to be back in Oklahoma. There is no question in my mind that it is here where many of my spiritual roots lie, where they were fostered and tested, and I hope developed to some degree. About a year ago my daughter Kathleen graduated from Oklahoma University as an engineer, to my great joy. She was also elected president of the Engineering Club...a remarkable achievement in a man's profession.

Kathleen used to kid me, saying that it took twice as much for a woman to achieve the same status as a man...that she would have to be twice as good to achieve the same recognition—"But that is *not* very difficult," she would add. Kathleen was declared learning-disabled when she was thirteen. It was because of Kathi that I became passionately interested in the science of motivation and human consciousness. At Snowmass last summer I told the story of how Kathi had lost her mother to cancer and had lost an older sister to drugs, and my own struggles to find God and walk with him.

Our theme today is "Man's Increasing Control."

There is no doubt that man has achieved great strides in controlling his environment on this planet. We are no longer wholly at the mercy of the fickle elements. We can communicate in nanoseconds with people all over the world. There has been stunning progress in virtually all the sciences.

But there is another frontier wherein humankind has not been so successful. That is the frontier of mediocrity that seals us off from 90% of our potentiality. Closely associated with the frontier of mediocrity is the one area in which humankind has total—or at least potentially total—control. And that is the area of moral choice.

And, yet, it is here where we have failed most consistently. Here where we lag far behind our material successes. This ultimate frontier—the barrier of mediocrity that holds sway over most of humanity—is the job of all of us. You need no special training to involve yourself with work in this field. The laboratory of the ultimate frontier is life itself. No one individual has an advantage of any kind over another in this study.

Some people have asked me over the years if I have any special technique for approaching the creative work I do. This is difficult to answer; it would be like asking Dan Massey, "How do you think?"

The truth is that I don't know any more about how the creative process works than anyone else does. But I do know the means to set up the circumstances by which the creative process seems to happen. Actually, we know very little about how the brain and the mind operate. If I asked you a specific phone number that you know, you would reply instantly. Yet, you do not know *what* looked for the number nor *where* or *how* it looked.

I will share with you the method I use to do creative work. I also encourage you to share your own ideas on the subject of development of consciousness. As I said, the question of the control and development of our consciousness is the job of us all.

I won't make a lot of jokes this evening, because this will be a serious talk. It is based upon a very serious premise.

Immanual Kant said: "Do—and then be." Gurdjieff said: "Be—and then do." And Frank Sinatra said: "Shoo-be do be do."

Today I am going to talk about the ultimate frontier, that frontier we call mediocrity. Mediocrity. Someone once said that it is not that most people live lives of evil, but rather they live lives of such utter innocuousness. Why? Why do most of us here have the vague feeling that we are using but a fraction of our total powers, or personality credits, as *The Urantia Book* might say? What can we do about it?

"Someone once said that it is not that most people live lives of evil, but rather they live lives of such utter innocuousness."

Just about a week ago Joan and I had a fantastic week at Cozumel, an island off Mexico, nestled in the Caribbean Sea. Now, granted, we were on our honeymoon. But there is no way even a casual visitor could not be struck by the glory for the senses...in the rich blues and turquoises of the waters, the sky and the clouds, the fresh, very temperate air. One day we took a snorkeling trip on a big catamaran, along with a couple of dozen other people.

I noticed one man sitting near us. He wore dark glasses, and like most males on this planet, he seemed to be trying to look as dangerous as possible. But as he became more relaxed, he began to talk in a friendly way. His name was Joe. Joe was soon complaining about America: it "isn't what it used to be," and taxation, and this and that.

I gently and tactfully admonished him, and Joe quickly modified his remarks. Later, he would find other people to talk to and began to harp upon his negative themes again. And

Contrary to popular belief, the greatest moments of our lives are not the times when we were the most receptive and relaxed; our happiest moments are usually those times when we stretched mind and body to the limit in a voluntary and successful effort to achieve something worthwhile.

Why do we not enter into some kind of partnership with God and go forth to meet our destiny, rather than seek to avoid it all of our days, only to be run over by it in the end?
—*William James*

these other folks tended to agree with him and began to chew a cud of negatives and petty gripes.

I ignored this discussion, but it occurred to me: How is it that this man can talk in negative terms about life, his country and all, when he is engaged in activities and enjoying luxuries that the richest man on the face of the earth could not have duplicated a century ago? How can he rail and be bitter about real or imagined wrongs in such a setting, and a Viktor Frankl can stand in the freezing rain at three in the morning at a Nazi death camp called Dachau, and make the decision to create positive experience out of *his* situation?

Or, how could a Lou Gehrig stand on wasted legs in Yankee Stadium, his career cut short by multiple sclerosis, and declare himself to be the "luckiest man on the face of the earth"? Or how could a little black child named Wilma Rudolph, who was born prematurely and was crippled by disease as an infant, at twelve years of age shed her braces against a doctor's warnings and eventually become the first woman to win three gold Olympic medals in track?

Were these people gifted with a special ingredient that Joe lacks? Or did they simply *access* something that is available to us all—at least to those of us who dare to go for it?

If Joe could meet Jesus, could Jesus turn him around in a single conversation the way he transformed Fortune? Why is it that it is generally agreed among psychologists that we achieve only ten percent or less of our potential? Or, to put it another way, ninety percent or more of our potentials never become actuals in time and space upon this planet? Or why is it that we use but two percent of our creative powers when, at two years of age, most of us utilized about eighty percent of those creative powers?

Finally, why is it we share, as mortals of the realm, a vague feeling that we are not doing what we need to be doing? Why is it that we strive harder to avoid and escape our destiny than we might have to if we sought to fulfill it?

As William James once said, "Why do we not enter into some kind of partnership with God and go forth to meet our destiny, rather than seek to avoid it all of our days, only to be run over by it in the end?"

I became interested in the process by which we create our consciousness when I was a man of about eighteen. It was then that I was presented with the startling concept that *we can control our thoughts.* I reasoned that if this is true, and it seemed possible that it was true, we could do virtually anything. No matter what the situation, we could transcend it. With a mind as clear as a mountain stream we could achieve a kind of precise objectivity about ourselves, as though our human personalities were merely a subject of some noble experiment, and we could learn to dance the dance of the human condition with grace and skill.

This personal revelation about thought came when I discovered a book called *Raja Yoga or Mental Development,* by Yogi Ramacharaka. In it the author asserts that we should be able to discard an unwanted thought with the ease with which we cast a tiny annoying stone from our shoe. But, he laments, *how rare indeed it is to meet such a man.* Instead, we watch the careworn faces go by, faces haunted by bat-winged phantoms that torture their minds, by this fear-thought and then another, or ruled by appetites that have long supplanted their natural hungers. People with whom we cannot carry on a casual, relaxed conversation because the overbrooding human ego is always there, suspicious, watching, listening. I had no idea at the time how difficult the task to control my mind would be. It seemed impossible at times, and success came very slowly. Today, after more years than I wish to admit, I am a few inches from where I started. But I was heartened when I read that Jesus did not master his human mind fully until he was nearly thirty.

Today there is an emerging school of psychology that is based upon the optimal experience; its premise is, essentially, that ***we create our own experience.*** Understand that this is not simply positive thinking. The process involves reframing each and every situation that confronts us in a manner that empowers, rather than defeats, us...so that troubles invigorate us, obstacles challenge us, and disappointments spur us on.

Contrary to popular belief, the greatest moments of our lives are not the times when we were the most receptive and relaxed; our happiest moments are usually those times when we stretched mind and body to the limit in a voluntary and successful effort to achieve something worthwhile.

Last summer my six-year-old daughter, Michelle, demonstrated this principle. She suddenly swam the width of the swimming pool—what we call the "big" pool. All summer long she held the edge and would not attempt it. Then she made a decision on her own to go for it, and she did. When I lifted her out after her triumph, she was spitting water and was out of breath. But she was ecstatic! Why? *She made a conscious decision to stretch herself to achieve what she deemed an important milestone, and she succeeded.*

Now let us examine four premises that are key to what *The Urantia Book* says about the question of dominion of our conscious mind. The first three premises will be easy for you to accept.

First of all, *The Urantia Book* presents a model of the human being that is unlike any theory ever forwarded by psychology, religion, or philosophy. *The Urantia Book* asserts that the human creature is indwelt by God in two different ways: by the prepersonal Thought Adjuster and the Personality essence. These two endowments of God seek to find each other in time and space and are wholly dependent upon the decisions of the human personality in this quest.

The second premise is that somehow, upon this mysterious enchanted loom between two unchanging realities, the human creature weaves—or fails to weave—its own universal identity. The degree of success achieved by this effort to achieve cosmic birth is the measure of actuality achieved by the human creature. That is to say, we become more and more real, in a cosmic sense, as we develop our own potentials into actuals. *For most of us that means a success ratio of under ten percent.*

Third, the finite tool we are loaned to achieve our own actuality is a dual-hemisphered instrument known as the human brain. This instrument is specifically designed to apprehend finite reality. Because of its dual nature, the brain is able to grasp and evaluate fact, or the way things are, and also grasp the emerging patterns of the Supreme, which together represent the way things ought to be. It is the synthesis of fact and value that produces a grasp of ever-changing, ever-emerging reality.

Please note that I am saying here that *fact, or things, are not, nor could they ever be evaluated as though they represent an intrinsic reality,* however popular this concept is with people. I have heard intelligent *Urantia Book* readers casually equate the material finite world with reality, rather than seeing material reality as a necessary *but not adequate* tenet of reality. *Reality is a living, organic synthesis of facts and values.*

The human brain was specifically designed to synthesize facts and values. Four billion messages go back and forth between the hemispheres each second. A better thought-instrument would have a third brain to do the job of synthesizing. And we know that such three-brained creatures exist and are superior to one- and two-brained mortals in their spiritual development.

My fourth and final premise is that the teachings of Jesus for this day and this generation can be summed up in three words: *serenity, receptivity,* and *action.* Without question this premise could be challenged. Some might point out that selfless, loving service is the essence of the message of Jesus. My answer is that some of us need to work to achieve a state of mind that makes loving service possible. Also, if the mind is serene and calm, and the heart is turned to God and receptive, the action that follows will be attuned to the service of God and humankind. So let's be patient and examine this formulation.

Serenity is the first requisite. A turbulent, immature, emotional mind cannot be receptive of the mind of Jesus. Much of the teachings of the Master focused upon the cleansing of the mind, the removal of resentments, the mastery of fear, and the achievement of clarity. *Receptivity* is possible once the mind has achieved serenity. But to be receptive one must be humble, devoid of preconception. *Action,* or the completion of decisions, follows upon the wise formulation of a decision-plan. Without action, all the rest is vain.

These four premises form the basis for what I have to say: *The Urantia Book* presents a unique model of humankind, a cosmic playground of mind and decision existing in the intervening finite between the Thought Adjuster and Personality. Second, we create our own cosmic identity in this area of human personality dominion; we make ourselves cosmic actuals based upon our decisions. Third, the two-brained human tool of thought is the finite dual-brain—one brain designed for reasoning, logic and the analysis of fact, and the other for receiving patterns and concepts. The living and continual synthesis of these two factors constitutes emerging reality, or relative truth. Finally, the essence of the teachings of Jesus can possibly be summed up as serenity, receptivity and action. With these premises in mind, follow me in exploring four questions.

First, if the mind of Jesus emerges in advanced and spiritually mature mortals, is there any clinical evidence of it? Has psychology or science found any viable proof that intrinsic to the healthy mortal is a set of clearly defined and associated principles that correspond to the mind of the Master?

Second, if modern psychology is accurate, and we use but a tiny fraction of our creativity and our potential, does *The Urantia Book* offer a clear path to breaking the frontier of mediocrity? Or are most of us doomed and sealed behind this barrier?

Third, if our survival as realities, or universe citizens, is predicated upon decisions,

My answer is that some of us need to work to achieve a state of mind that makes loving service possible.

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First of all, let me say that the mind of Jesus has been clinically discovered and defined in people who are, or were, clearly superior mortals.

To simplify Maslow's remarkable insight, imagine that you wanted to know about baseball players. If you studied only those who failed, who languished in the class D leagues, your idea of baseball players would be rather dismal.

decisions and more decisions, and a decision is not complete until it is *acted out*, is there a methodology in *The Urantia Book* that leads us to *right action?*

Finally, how can we apply this information to our everyday lives? Immediately, vividly, and with clear results?

First of all, let me say that the mind of Jesus has been clinically discovered and defined in people who are, or were, clearly superior mortals. The discovery was made and validated by an atheistic Freudian psychologist named Abraham Maslow. Just before World War II hundreds of the best Jewish minds fled the terror of Nazism and came to New York City. Many of these intellectuals joined the staff of New York University where a young Abraham Maslow taught. Maslow enjoyed rubbing elbows with these brilliant people.

As a Freudian psychologist, Maslow had learned that the human mind is programmed with a social system of values, and these values *restrain* us. That is to say, we repress our normal instincts to, for example, push an old lady out of our way because society has instilled a conscience in us. Freud called this conscience the *super ego*. Much of our psychological stress, according to Freud, is the effort of our conscious ego trying to reconcile the pressures of our unconscious natural instincts, called the Id, with the repressive pressures of our super ego.

According to this model of humankind, we are essentially ruthless animals without conscience or values until we are artificially programmed by society. Freud's studies and analysis of people who were seriously malfunctioning seemed to verify this model.

Maslow began to notice two special people among the body of brilliant minds at New York University. They were Ruth Benedict and Max Wortheimer. These two did not seem to fit into the ordinary human pattern of mediocrity. They loved their work and threw themselves into it. They were gracious, warm, creative and confident. They laughed freely and were accessible under most conditions. They were big-brotherlike in their attitudes toward their less able and adjusted brothers and sisters.

Being a kind of guy who liked to analyze things, Maslow began to take notes and generally observe these two unusual individuals. More and more he became convinced that they did not fit the Freudian model. Late one night Maslow had an insight that was to eventually revolutionize psychology. He looked over his notes on Ruth and Max, and in a single flash saw that he did not have a profile of two people before him. Although they were totally unique and individual, the two profiles before him represented a new kind of person.

Maslow was studying something that had never been studied before. He was studying psychological *health*. And most important of all, it seemed that when a human entity reached a degree of health and maturity, it began to manifest a system in *intrinsic* values—including truth, beauty, and goodness. Not stuff programmed into the mind to repress it, not reins to hold it back. But rather horses to *pull and allure it forward*.

Maslow did not refute Freud. Nor did he contend that Skinner and his behaviorism were false. He simply said that the concept of a human creature totally under the sway of antecedent causation was *incomplete*. It seemed that as a human emerged from the confines of immaturity into relative degrees of maturity, she or he became more and more able to exercise free will.

Maslow conjectured that the human, as he or she approached maturity, became more and more *real*. This is to say that the *potentials* of the human being began to become *actuals*. Such a maturing individual began to make his *self* ACTUAL. Thus Maslow arrived at a concept of the process of *self-actualization*. Self-actualizing humans did not fit the model of Freud or Skinner.

Maslow came to the conviction that Freud, by studying only the ill and failing misfits of humanity had created a sick science, incomplete and inadequate. To simplify Maslow's remarkable insight, imagine that you wanted to know about baseball players. If you studied only those who failed, who languished in the class D leagues, your idea of baseball players would be rather dismal. But if you studied the great and super achievers in the sport, you would collect a totally different body of information.

Maslow determined that he would study healthy people. He began a long and arduous effort that flew in the face of the elite and accomplished high priests of psychiatry. He looked for historical examples and contemporary individuals who manifested the remarkable qualities that he had discovered in Ruth Benedict and Max Wortheimer.

The resulting study included nearly 2500 people. These were by no means perfect people. They all had faults and areas of immaturity, or lack of development. But they were achievers who had made important contributions to the planet, and they were relatively happy and well adjusted. Most of all, they seemed to manifest qualities of healthy behavior that

were beyond the ability of ordinary mortals. Maslow published his findings in a paper entitled, *Self-Actualizing People, a Study in Mental Health.*

In this historic paper Maslow showed that healthy, self-actualizing people, regardless of their social backgrounds, are a different type of human than the vast majority of their brothers and sisters. Not simply different in *degree,* but rather different in *kind.* There were not many of these people, probably less than one and a half percent of the population. But they were clear models of what we human beings could become. These self-actualizers showed parallel characteristics that were impressive and beautiful. Humanity had a new standard, a new and encouraging potential to strive toward.

The emerging profile of self-actualizers reads like a partial description of the personality of Jesus...creative, expansive, generous, devoted to a cause. There follows a very brief synopsis of these characteristics. Read Maslow's *Motivation and Personality* if you want to learn more about this study.

The Self-Actualization Touchstones

Religious: Self-actualizers seem to accept the religious experience, the Peak Experience... they have a devotion and a commitment to higher values.

Active Agents: Without exception, self-actualizers are committed to some high-minded cause that they hold to be more important than themselves. They tend to have a capacity to lead, an ability to commit.

Independence of Culture, Opinions, Social Formalities: Self-actualizers are less enculturated and programmed. They tend to think and act on their own.

Creative: Self-actualizers are creative...they get things done. They are spontaneous and unpredictable, less concerned with social mores. (They seem *indifferent* to these mores, they do not seek to *violate* them. People who consistently go against social standards are considered conformists in reverse.)

Brotherhood: Self-actualizers have a tendency to help those around them...they have unorthodox, unhostile senses of humor.

Clarity: They seem to perceive reality with clarity, with fewer hang-ups and ego concerns.

Problem Solver: Self-actualizers are problem-centered rather than ego-centered. They tend to focus upon the important situations at hand, sometimes to the exclusion of their own immediate needs.

Maslow determined that a human being could not achieve the self-actualizing process until he had satisfied certain *deficiency needs.* It was in these areas of deficiency, or perceived deficiency, that the ideas of Freud and Skinner seemed to be validated. But *once the human being no longer seemed to need to take things from his environment to satisfy his needs, once he began to give things back to his environment, Freudian psychology and Skinnerian Behaviorism no longer adequately explained his behavior.*

Maslow's pyramid or hierarchy of needs is well known. His two key premises related to this pyramid of needs are: a lower need must be satisfied before another or higher need is felt; and a satisfied need no longer motivates. Let's look at this hierarchy of needs.

1. *Biological needs.* The entity must have food, air, water, etc., before it will seek to satisfy another need.

2. *Safety Needs.* When a human feels biological needs satisfied, he will seek to establish security.

3. *Social Needs.*Once the entity feels safe, he seeks out social companionship, approval, acceptance.

4. *Having satisfied these needs the creature now craves esteem, recognition, power and control.* The ego operates in various arenas of life to satisfy these needs. Once the human has achieved the rare status of satisfying his esteem needs, he passes into a new area: the area of relative maturity.

5. *Self-Actualizing.* This is the area where the entity seeks to become *real*—an actual rather than a potential. This is not a conscious pursuit in the way one might seek social acceptance or power. Self-actualization seems to be the by-product of the pursuit of some cause greater than oneself. All self-actualizers were totally, sometimes fanatically, committed to a high-minded task. *["He who seeks to find his life shall lose it, he who loses it for my sake shall find it."]*

On pages 576 to 577, *The Urantia Book* delineates a very similar hierarchy of development for humanity: (1) The Nutrition Epoch (biological needs); (2) The Security Age (safety needs); (3) Material-Comfort Era (described as an era that permits leisure and comfort. The social needs, such as competing for material status described by Maslow, can be correlated with this era.); and (4) The Quest for Knowledge and Wisdom. (Unfortunately, on our planet this quest is closely related to immature power and ego needs. Thus Maslow determined that individuals seek knowledge largely to achieve status, esteem, recognition and control. Yet, an honest quest for knowledge results in the development of wisdom, and accumulated wisdom results in enlightenment.)

The emerging profile of self-actualizers reads like a partial description of the personality of Jesus...creative, expansive, generous, devoted to a cause.

"The concept of process is an important one. We never achieve self-actualization, we only enter into the process."

Then Jesus gave him a stunning command, "Arise my son and stand up like a man." Jesus told him in effect to get off his duff.

The Urantia Book goes on to layer the self-actualizing process into three distinct levels. It is interesting to note that in the Maslow model we have traversed four distinct levels of development and entered into a fifth. In my own judgment, these are the seventh through the third psychic circles.

The Urantia Book describes the areas below self-actualization as deficiency areas, remarkably close to Maslow's concept of deficiency needs. The book comments that this residue of animal indulgence and laziness is eradicated upon the mansion worlds. Entering the third circle, or the area of self-actualizing, as I have said, *The Urantia Book* delineates three additional levels:

5. *The Epoch of Philosophy and Brotherhood.*
6. *The Age of Spiritual Striving.*
7. *The Era of Light and Life...* for an individual human being, direct Adjuster contact and eventual fusion.

According to Maslow, only about one and a half percent of the population enter the self-actualization area, which I have conjectured is the third circle. I must also remind you that the psychic circles are not levels of spiritual development; they are only *associated* in some unspecified way to spiritual development. This would fit the maturity criteria and discoveries of Maslow about the hierarchy of needs.

We can reasonably conjecture that if seven psychic circles do exist, they should give researchers some evidence of their existence. It is not unreasonable to associate the Maslow hierarchy of maturity development with the psychic circles.

My second and third questions were: Does *The Urantia Book* give us a methodology to break into the ultimate frontier, the barrier of human mediocrity? Does it give us a method to make decisions and complete them with action? I believe it does. There are two pages in the book which every student of psychology should study with minute care. We are all familiar with them. It is the encounter of Jesus with Fortune. In this encounter Jesus outlines a program that caused Fortune to transform from a languishing, fear-ridden mortal with the potential to be ten times what he was, to a magnificent reality in the universe—a jewel in the mosaic of the Supreme. What Jesus said to Fortune was the message he gave to all of humankind—in clear, precise and unmistakable terms.

Is it not true that most of us tend to languish on our own private hillside of doubt, indecision and self-pity, at least to some degree? Isn't there a vague uneasiness that the fire of desire within us has been dampened by fear? Could this common syndrome be our potentials raging for expression? Maslow believed this restless unfulfillment is the condition of most of humankind. He conjectured that the discomfort we all feel can only be satisfied by the cultivation of our own undeveloped potentials. Else, these potentials will eventually grow silent, decay and die. In this case an inexpressibly precious treasure has slipped through the fingers of our stewardship.

Jesus knew the human condition far better than Maslow. And I believe Jesus spoke to all of us when he spoke to Fortune. The first characteristic of the message of Jesus to Fortune was that it represented a process, a complete cycle. It *began* with a *physical action* and *recycled* with a *physical action*. It was an endless process prescribed by the Master. The concept of process is an important one. We never *achieve* self-actualization, we only *enter into the process*. People are never self-actualized; they may become self-actualizers. The process never ends.

The first thing Jesus did with Fortune was open his mind to the ultimate goal. Remember at all times and under all circumstances why you are on this planet. *The Urantia Book* says that our primary goal should be to attain better and better communion with our Thought Adjuster. Here is the ultimate source of the values and spiritual potential we should honor, the truth we seek, and the solution to every problem that confronts us.

There is not a person here without a set of problems, and without a magnificent opportunity for growth.

But let us go back to Jesus and Fortune. Jesus first gave Fortune a perspective of the ultimate goal, our spiritual destiny. Then Jesus gave him a stunning command, "Arise my son and stand up like a man." Jesus told him in effect to get off his duff. Alfred Adler noted this need for physical action to break the inertia of the lazy evolutionary mind: "Trust only movement."

Then Jesus acknowledged for Fortune the reality of his problems and obstacles. But he reframed them for this self-pitying man in such a way as to empower him: "You are surrounded by small enemies and many obstacles. But the big things and the real things of this world and this universe are on your side. The sun rises to greet you as it does the most powerful and prosperous man on earth."

Jesus then points out that Fortune has better than average physical equipment, but that it was useless and wasted as long as he isolated himself from humanity and nursed real and fancied misfortunes. "You could do great

things with your body if you will hasten off to where great things are waiting to be done."

Then Jesus addressed the arena of thought—the mind. He again acknowledges the reality of Fortune's problems, but he indicates there is only one way out...one escape. And that is for Fortune to take the initiative through assertion of his dominion over his mind.

Jesus said to Fortune, "Look again. Your mind is clear and capable. Your body has an intelligent mind to direct it. Set it to work to solve its problems, teach your intellect to work for you. Refuse to be dominated by fear like an unthinking animal. Your mind should be your courageous ally in the solution of your life's problems rather than your being its abject fear-slave and bond servant of depression and defeat."

Then Jesus spoke of the spirit. He called this the most valuable possession of all. He told Fortune to *release the spirit from the fetters of fear.*

Once released, Jesus said the spirit would *stimulate and inspire the mind to control itself and activate the body.* This, in turn, would enable the spiritual nature to begin to deliver Fortune from the evils of inaction. And Jesus suggests to Fortune that the ultimate tool to release the spirit is *living faith.*—faith to release the spirit, which will inspire the mind and activate the body. The gift of faith...ours for the asking. We need but ask for it and receive it.

Finally, Jesus admonished Fortune once again to action: "When you become so readjusted to life within yourself you likewise become readjusted to the universe; you have been born again—henceforth your life will be one of victorious accomplishment. Trouble will invigorate you; disappointment will spur you on; obstacles will stimulate you. Arise, young man!"

And now we have come 'round full circle. Jesus began with a perspective, and then suggested a physical action. Next, he asserted dominion of human personality over mind. Then he advocated a release of the spirit, and finally back again to a physical action. This is a process, a cycle, something that happens simultaneously, yet must be understood and ordered sequentially by the evolutionary mind.

For those of us who have fears and doubts and a haunting feeling of dissatisfaction, I offer one final suggestion. I have devised a pragmatic application of the process we have just discussed, one that I find most valuable. It is of great value in getting myself into the right frame of mind to do creative work.

The formula I use is simple, and based upon the technique Jesus taught Fortune: *I pray for perspective, claim dominion over mind, and ask for the humility to accept the gift of faith. Finally, I ask for the energy to act and the integrity to live up to the light I am given. Each day, regardless of the situation, I do this process.*

Now, most of us eat some kind of breakfast, but few of us feed our soul each morning. Few of us prepare for the day. We plunge into it and cope with what emerges. No warmup, no preparation. Imagine an athlete who failed to warm up. Imagine Mary Lou Retten attempting to do her historic vault—the one that won her the Olympic title—without a warmup.

So try this tomorrow morning. Get up at least a half hour earlier. An hour is better. And begin your day with an appropriate prayer to gain a broad perspective. My prayer is simply to acknowledge that on my own, with my human mind and personal capabilities, I will fail. I ask for the mind of Jesus. I ask that God direct and help me. This initial process is the process of gaining perspective...a reminder as to why we are here.

Jesus then points out that Fortune has better than average physical equipment, but that it was useless and wasted as long as he isolated himself from humanity and nursed real and fancied misfortunes.

Consider your ultimate objectives. For example, if you were planning a vacation day, you could plan to cram into each moment the very most experience you can. Or, you could plan to walk with God and to enjoy a wonderful spiritual experience. Also, if you elect to follow the will of God each day, remind yourself that God works with incredible economy. There is no surplus of time or material supply, but rather an exact amount at the exact time needed. Too many of us live as though our objective is to do as much as possible in any given day, rather than to do what God may want done.

So begin the day early with a reminder of why you are engaged in living your life upon the planet. This gives meaning to everything that follows each day, rather than simply going through the motions and coping. Try to do a little physical exercise, some stretching and breathing. Next, try to observe your mind. It is a tool for you to use; it is not you.

So begin the day early with a reminder of why you are engaged in living your life upon the planet. This gives meaning to everything that follows each day, rather than simply going through the motions and coping.

Your emotions are not you, either. You are sovereign over mind...claim your birthright. Identify with the personality essence within—it is that "thing" which observes, the thing that cannot observe itself. Thus, it cannot be defined or qualified; it is YOU, the essence of you.

Next, I ask that God grant me the ability to *accept* the *gift* of faith. I ask that whatever elements are in me that might prevent me from accepting this gift be dissolved. And thus I seek to release the spirit within from the fetters of fear. By now, if I am successful, I achieve a kind of serenity, a peace. Now I am ready to receive. And in the silence of the morning I listen to

It has been said that we are not punished for our errors and our sins; we are punished by them. In the same vein, we are not punished for failing to live up to the light we are given; we are punished by not living up to the light within our soul.

God. Although I do not hear his words, I open mind and heart and trust that transactions are taking place beyond the scope of my consciousness, in the highest regions of my mind.

But this process of listening is not passive. We must go to our Thought Adjuster with a purpose. We must ask advice and listen as though it was an alter ego. We must complete this part of the process by honoring our spiritual potential, and asking that what we have learned in these precious moments be applied to the arena of life we are about to enter. We must bring something back with us. And the light, whatever we get, must be honestly lived up to and sincerely honored. Else it turns to darkness within the soul.

It has been said that we are not punished *for* our errors and our sins; we are punished *by* them. In the same vein, we are not punished *for* failing to live up to the light we are given; we are punished *by* not living up to the light within our soul.

This hour or so in the morning is my most precious time of the day. If, for some reason it is not possible to get an hour with God, I try to get a few minutes, but always in the morning. Always I have at least the time to acknowledge my helplessness and my need for him.

I should point out that I have observed the very first thing to be neglected in the prayer and process I have suggested is the acknowledgment of my own inadequacy. If I am careless, I seem to forget that humility is necessary. I must admit that I need God—that I cannot do it by myself. I personally must monitor this tendency toward arrogance very carefully.

My formula is exactly as I presented it. Achieve serenity of mind. Achieve an attitude of receptivity. And then act according to the light you are given. A spiritual life is an edifice that must be rebuilt each day.

There is one final suggestion I make. I complete my session by a physical action: I write down all the various things I need to do or think I need to do. I then time-frame each of these items and, finally, establish priorities. This is the final physical action that re-establishes the cycle and completes the process for the moment. Remember, the process is endless. This is the technique I use that seems best to help me do creative work.

My formula is exactly as I presented it. Achieve serenity of mind. Achieve an attitude of receptivity. And then act according to the light you are given. *A spiritual life is an edifice that must be rebuilt each day.*

Try this system if you want to be invigorated, spurred on and stimulated. Because Jesus promised that if we are aligned properly with the universe, our troubles will invigorate us, obstacles will stimulate us, and disappointment will spur us on.

I hope I have offered something of value. I tried to show that the mind of Jesus has been clinically discovered and studied. I have tried to show a clear method by which Jesus taught us to align our selves with the forces of the universe. I have asserted here that if we but learn three things from Jesus—serenity of mind, receptivity, and action—we will do justice to his teachings. We will achieve noble self-expression and not simply be reactive to stimuli.

Disney used to say that to get better we need to use the pause between stimulus and response. The quality of that pause determines whether we will react from the top of our heads or the core of our being. I suggest here a pause at the beginning of the day to realign your self with the ultimate purpose of your life. If you really can't conceive of an ultimate purpose, do this exercise tomorrow morning. Write your obituary in a hundred words of less. Write your obituary the way you would like it to read some day. How would you like to be remembered? When you have written your obituary in this way, you will have written your ultimate purpose in life.

In closing, to the scientists I suggest that science is not a study of reality, but a study of fact. Quantum physics does not prove that the very tiny is undeterminate; it proves we cannot determine—as yet—how it works. It was the arrogance of materialism that built an unsinkable ship called the *Titanic*. And it was science without values that built gas chambers not many decades ago.

The scientist who is a *Urantia Book* believer will honor values, and will recognize that her or his domain of expertise is fact. The domain of value is that of religion, but it ultimately belongs to all of us. And the domain of emerging truth is the domain of the philosopher. And, of course, we are all philosophers, and the study of truth is the job of all of us.

I suggest we all spend an hour each morning talking with God. An hour spent aligning yourself with your Thought Adjuster puts you in tune with the universe and in liaison with God. In liaison with God, anything, absolutely anything, is possible.

In liaison with God, anything, absolutely anything, is possible.

I love you, God bless all of you.

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Reference to two-brained theory and three-brained creatures: page 566. This information

predated the Sperry split-brain experiments by nearly two decades.

Encounter of Jesus with Fortune, pp 1437-8.

References to Maslow's Hierarchy of Needs, pp 576-7. This information predated Maslow by nearly two decades.

Selected comments:

[Intrinsic drives to self-actualization]— "There are present in all mortals certain innate drives toward growth and self-realization which function if they are not specifically inhibited. The certain technique of fostering this constitutive endowment of the potential of spiritual growth is to maintain an attitude of wholehearted devotion to supreme values." (*1095)

[Transition from antecedent causation toward self-actualization]— "Religion assures man that, in following the gleam of righteousness discernable in his soul, he is thereby identifying himself with the plan of the Infinite purpose of the Eternal. Such a liberated soul immediately begins to feel at home in this new universe, his universe.

"When you experience such a transformation of faith, you are no longer a slavish part of the mathematical cosmos but rather a liberated volitional son of the Universal Father. No longer is such a liberated son fighting alone against the inexorable doom of the termination of temporal existence; no longer does he combat all nature, with the odds hopelessly against him; no longer is he staggered by the paralyzing fear that, perchance, he has put his trust in a hopeless phantasm or pinned his faith to a fanciful error.

"Now, rather, are the sons of God enlisted together in fighting the battle of reality's triumph over the partial shadows of existence. At last all creatures become conscious of the fact that God and all the divine hosts of a well-nigh limitless universe are on their side in the supernal struggle to attain eternity of life and divinity of status. Such faith-liberated sons have certainly enlisted in the struggles of time on the side of the supreme forces and divine personalities of eternity; even the stars in their courses are doing battle for them; at last they gaze at the universe from within, from God's viewpoint, and all is transformed from the uncertainties of material isolation to the sureties of eternal spiritual progression. Even time itself becomes but the shadow of eternity cast by Paradise realities upon the moving panoply of space." (*1117)

[On evolutionary laziness]— "Evolutionary man does not relish hard work. To keep pace in his life experience with the impelling demands and the compelling urges of a growing religious experience means incessant spiritual growth, intellectual expansion, factual enlargement, and social service. *There is no real religion apart from a highly active personality.* Therefore do the more indolent of men often seek to escape the rigors of truly religious activities by a species of ingenious self-deception through resorting to a retreat to the false shelter of stereotyped religious doctrines and dogmas. But true religion is alive. Intellectual crystallization of religious concepts is the equivalent of spiritual death. You cannot conceive of religion without ideas, but when religion once becomes reduced only to an idea, it is no longer religion; it has become merely a species of human philosophy." (*1120-21)

[On the technique of receiving the mind of Jesus]— "The technique whereby you can accept another's idea as yours is the same whereby you may 'let the mind which was in Christ be also in you.' " (*1123)

[On the domains of science and religion]— "Science becomes the thought domain of mathematics, of the energy and material of time and space. Religion assumes to deal not only with finite and temporal spirit but also with the spirit of eternity and supremacy. Only through a long experience in mota can these two extremes of universe perception be made to yield analogous interpretations of origins, functions, relations, realities, and destinies." (*1139)

"Even the discoveries of science are not truly *real* in the consciousness of human experience until they are unraveled and correlated, until their relevant facts actually become *meanings* through the encircuitment in the thought streams of mind." (*1120)

"This profound experience of the reality of the divine indwelling forever transcends the crude materialistic technique of the physical sciences. You cannot put spiritual joy under a microscope; you cannot weigh love in a balance; neither can you estimate the quality of spiritual worship." (*2095)

[On the stewardship of potentials]— "The great challenge that has been given to mortal man is this: Will you decide to personalize the experiencible value meanings of the cosmos into your own evolving selfhood? or by rejecting survival, will you allow these secrets of Supremacy to lie dormant, awaiting the action of another creature at some other time who will in *his* way attempt a creature contribution to the evolution of the finite God? But that will be his contribution to the Supreme, not yours." (*1284)

*When you experience such a transformation of faith, you are no longer a slavish part of the mathematical cosmos but rather a liberated volitional son of the Universal Father. (*1117)*

*...at last they gaze at the universe from within, from God's viewpoint, and all is transformed from the uncertainties of material isolation to the sureties of eternal spiritual progression (*1117)*

"Man's eternal soul evolves its own eternal destiny by association with the divine presence of the Paradise Father and in accordance with the personality decisions of the human mind. What the Trinity is to God the Supreme, the Adjuster is to evolving man." (*1282)

"The Supreme Being did not create man, but man was literally created out of, his very life derived from, the potentiality of the Supreme. Nor does he evolve man; yet the Supreme himself is the very essence of evolution. From the finite standpoint, we actually live, move, and have our being within the immanence of the Supreme." (*1283)

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Coming Full Circle

By
Joy Dirham

A student of The Urantia Book *14 years, Dirham has a B.S. degree in physical therapy. The focus of her work has been on central nervous system dysfunction, working with stroke victims and those who have sustained traumatic brain injury. She is certified in the Babath neurodevelopmental treatment technique for adult hemiplegia.*

I want to talk to you this evening about what I have come to explore in my own "gradual accumulation of the knowledge of the laws of the material world." I will be speaking of problems associated with the central nervous system (brain and spinal cord), and the musculoskeletal system (muscles and bones).

First, I will address some experiences I've had, in the clinic, that transcend purely scientific investigation, and go beyond anything I was taught in school. Second, I will cite some information from others that will substantiate the occurrence of outcomes that transcend the easily explained and their recognition of the importance of these events. Last, I will offer a brief explanation of my understanding of the approach of Moshe Feldenkrais and his philosophic/therapeutic method that offers a plausible theory that sheds light on these transcendent phenomena. Along the way, I hope to allude to the need to reconsider our purely scientific stance, and to come full circle by realizing the importance of the "laying on of hands," both literally and figuratively; which is to say, using actual touch and using emotional touch. I hope to give you questions about your own ability to come full circle, as an individual, through looking back to your earliest development and thinking about what behavioral and physical habits you've formed which may no longer serve you. An increase in personal control can happen when we recognize our past and free ourselves from it—come full circle.

As I stated, the transcendent experiences I've had during my work with people with brain injury and strokes have occurred as a result of looking at a much bigger picture of the patient than I was ever taught to look at in school.

Several important factors can affect the outcome in giving these people an increase in motor control. The ability of the patient to respond cognitively is important, but of greater importance is the ability of the body to experience a feeling of normal movement. This "feeling" of normal movement involves not only the sensory perception of movement, but also the emotional feelings associated with the ease of normal movement.

Normal movement has an inherent lightness, and in the impaired system, when this movement happens, there is a profound emotional response that reverberates throughout the whole organism. In order to impose a feeling of normal movement on a disrupted system, it requires the therapist/teacher to view the entire human organism sitting before her, and to gently guide the distorted body parts into a posture more related to normal body postures. I have learned that the greatest success can happen if this gentle guiding takes into account the patient's psychological need for security—both physical and emotional safety. I am able to establish this bond of trust by *touch:* in the firmness or lightness of the touch, the speed of the movement, the physical support or lack of support, or sometimes by just placing myself in the position to catch them if they fall. Very little verbal exchange takes place. Furthermore, an awareness of my own muscle tone, as well as my own emotional tone, helps to establish the necessary setting. The act of utilizing the correct components of movement, via positioning the patient properly, which I have been taught, could be elevated to a more dynamic healing event when the whole person was considered, *and* when the teacher/therapist brought herself wholly to the task. Occasionally, all of the elements come together, and the patient experiences the look of recognition associated with normal movement. I call this event a "cordial connection" between myself and the patient. It sometimes feels like a holy moment, and we are both blessed. I feel that this must represent a true laying on of hands.

In our search for purely scientific, reproducible proof of how and why something works, we have seen a loss of favor for the simple loving act of laying on of hands. I do not propose to take away anything from all the marvelous discoveries that have been made or the tremendous gains that occur through use of the factual, reproducible, scientific method. I have come to believe, however, that our search for answers will increasingly bring us full circle to the discovery of the potency of the laying on of hands and the intangible, unreproducible results that can occur. And this has to do with the recognition of the whole person, and with an interchange between two persons involved in this creative act of healing.

Oliver Sacks discusses the split between science and life, between the pure facts of science, as in physics, and the variety of phenomena that defy strictly factual explanation. We can physiologically identify specific areas of the brain in which memories and images are held, where sensations and experiences reside. We cannot, however, locate the geographic site of judgment or the home of human dignity; these

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are transcendent functions of the mind. The focus of science on the physiology of the mind misses the importance of looking at the organism in its entirety—looking at the total being. By focusing on the lesion and treating only this lesion, a failure to see the ramifying effects throughout the whole person is inevitable.

Sacks discusses his book, *Awakenings*, and cites the divergence in the particular manifestations of catatonia seen in patients with Encephalitis Lethargica Syndrome. Even in a catatonic state, beyond a level of generic similarities, the "sub-types" of the syndrome became as varied as the *individuals* who possessed them. When the drug L-Dopa was introduced and these patients experienced an awakening, after the initial euphoria, the response to L-Dopa was not necessarily associated with the degree of physiologic damage that had taken place, but appeared to have a great deal to do with the *individual* patient's state of mind. Sacks describes Rose R., who was nostalgic for those things familiar to her, all of which happened in the 1920's (the awakenings happened in 1969). Rose finally concluded, "I can't bear this present time...all this television, trash, nonsense." Shortly after making this statement, she suddenly ceased to respond to the L-Dopa. More than one story hinges on how other elements in a person's life came to bear on his or her response to L-Dopa. What became obvious, as Sacks relates, was that the L-Dopa was only the beginning, and what was necessary for optimal success with the L-Dopa was for the patient to find a life with purpose and dignity.

To one degree or another, these theories draw upon the body's hidden potential—the transcendent intangible.

A.R. Luria, considered by many to be the father of neuropsychology, felt strongly about the interrelatedness of a patient's biology and biography, a person's electrochemical, cellular processing of information, and the relationship to individual personal experience. An understanding of this concept of how a person grows and becomes emotionally/psychologically, and how that growing and becoming is connected to the physical body, is essential to attaining increasing control.

Spinoza (1632-1677), in *Ethics*, states: "...no one hitherto has gained such an accurate knowledge of the bodily mechanism that he can explain all its functions...The body can, by the sole laws of nature, do many things which the mind wonders at...."

We are now in possession of a vast amount of research related to the physiology of the brain, but still the intangibles of the body's unexplained potential give us reason to wonder.

This laying on of hands, of which I've been speaking, is beginning to gain more and more attention these days in the non-medical community, and the reason is, we are finding that it *does work*. We also are becoming increasingly aware that traditional American medicine often focuses only on the specific location of bodily insult or focuses too much on the tests, X rays, etc., to the exclusion of viewing the whole person. (One of the greatest gifts you can find is a medical practitioner versed in the scientific knowledge necessary, and who is sensitive to all the "ramifying" effects emotionally.) There are many different theories about and methods of touch therapy, both for dysfunctional systems and for normal central nervous systems. To one degree or another, these theories draw upon the body's hidden potential—the transcendent intangible. All of these methods come under the umbrella title, "body work"; there is Heller work, Traegger method, the Rosen method, Mittendorf breath work, and Feldenkrais method, to name a few.

I am going to discuss with you, this evening, some of the ideas of Moshe Feldenkrais. I want to make clear that I do not think the Feldenkrais method holds all the answers or the only answer. This method of body work has had special significance for me, because it has reconfirmed experiences I have had as a practicing clinician and has made me consistently feel (physically and emotionally) the way I have striven to have my patients feel, but with which I have met inconsistent success.

Dr. Moshe Feldenkrais lived from 1904-1984 and developed this method in the late 1940's. He held Ph.D.'s in mechanical engineering and physics and worked with Fredric Joliot-Curie in nuclear research. He was the first European to earn a black belt in Judo. Synthesizing this background with his deep curiosity about linguistics, biology, perinatal development, and athletics, Feldenkrais taught himself to walk again, without pain, after a crippling knee injury. This personal breakthrough led to Feldenkrais' innovative contribution in showing how the body, through movement, influences the mental process.

I have been exposed to his teachings for the past two years and have just recently begun a four-year certification course to learn this method of movement therapy. I am only a beginning student in this method, so that my ability to express Feldenkrais' work must be weighed in light of my inexperience. It is difficult to easily or briefly explain this work, so please bear with me. When I was first exposed to this work (and my first exposure was as a

recipient of the actual touch therapy), what I experienced felt profoundly right to me based on my work in the clinic, when I was the one doing the teaching.

As I lay on the massage table, my body was gently manipulated by my teacher, with no work on my part and no verbal instructions on her part (similar to the nonverbal communication I spoke of earlier). Almost immediately my breathing changed dramatically—fuller, slower, a feeling of the breath moving not only in my lungs, but throughout my whole body. When you hold an infant you can feel the breathing throughout the whole body. This must be normal breathing.

I had a deep sense of being more connected in my body and realized that parts of my body that were previously not touching the table (the small of my back; between my shoulder blades) were now in contact. It was a feeling of being more normally aligned around my skeleton.

What happened after my session, which Feldenkrais teachers call "lessons," was a feeling of lightness, both physically and emotionally, that lasted several days. There was no one thing that I could point to as having changed, since I had no real specific complaint to start with, but I experienced such a generalized feeling of well being, a feeling of being balanced over my feet, of moving from a balanced center—and all without conscious effort on my part.

This coincided with what I had worked years to achieve in my patients with central nervous system dysfunction this laying on of hands that gave me a feeling of "normal" movement, unlike anything I could remember experiencing. It established the same "cordial connection," with me as the recipient, that I had experienced on rare occasions with a patient, but this cordial connection had come about in such an effortless way. Not only was I able to experience this feeling through the laying on of hands of my teacher, but I became aware of exercises that can be done gently and easily by myself, or in groups, that could effect this change.

My understanding of Moshe Feldenkrais' observations has to do with habituation of movement patterns. His work discusses the interrelatedness of movement and behavior, the habituation of movement patterns that are established in childhood that prevent ease of movement, even in a normal central nervous system.

The mature person has the ability to learn newer, more appropriate patterns of movement and behavior, based on becoming aware of habitual patterns. We start, as infants, with free and easy movement; we habituate movements that prevent free, easy movement; we recognize these habitual movement patterns and choose another way, thus freeing ourselves once again. This is the avenue for coming full circle, as an individual, that I promised to challenge you with in my introduction. For example, in our society we are chair sitters, so that when we are seventy years old, our ability to rise from sitting on the floor has usually slowed. In a society of floor sitters, the seventy year old has no such difficulty. We all started as infants with the same flexible skeleton.

Human infants, unlike other animals on the planet, are subjected to a prolonged period of motor development (as compared, say, to a horse that stands up within the first few minutes after birth), and an even longer period of dependence on parents. At birth, we have only primitive reflexes working intact, and we slowly lay down motor patterns that are controlled by the higher cortical centers. As the infant begins to develop a sense of self and sense of world—"myself" versus "other"—movement/action facilitates this emotional/ psychological development. Superimposed upon these motor and behavior explorations, because of the total dependence upon the parent, are all the expectations of the parent. To please the parent is necessary for survival. Our experience of movement and, hence, the appropriate behavior for survival, becomes influenced by the society, culture, economics, and education of our parents. Therefore, movement becomes the expression of behavior and behavior is shown through movement, and both of these are the product of our own individual personal experience.

According to Feldenkrais, faulty posture and behavior come about when a normal child is asked to perform a task that is beyond its ability to perform with ease, based on its motor development at that time. People slouch or tense their bodies unnecessarily, not because of a problem with the nervous system, but secondary to attempting to perform tasks that were beyond their means, as children, and they have habituated that effortful performance. The child's dependence is so great and so linked to survival fears that it will perform what is expected, even if it is unable to accomplish the task with ease.

Remembering that muscle control in humans is gained through prolonged training, our actions are more influenced by our experience and environment than those of other animals. This comes back to, and validates the idea of, looking at the entire organism—the whole person. There is also a definite connec-

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tion, using this line of thinking, between the highly individual nature of each person's personal experience and the highly individual nature of each person's healing and/or response to healing (physical and psychological).

With Feldenkrais' technique, in both the individual lessons, called Functional Integration, and self/group exercises, called Awareness Through Movement, an attempt is made to free the nervous system from its habitual patterns of movement (even in its most subtly restricted patterns) and to re-establish in the body the feeling of light, effortless, normal movement.

In movements we performed for the first time, we experienced the *initial* effort, and that effort was repeated with each subsequent like movement. In time, the effort becomes so habitual and automatic that there is a complete loss of awareness of the effort involved, *as well as of the subsequent restricted movement it causes.*

An example would be to turn the head *slowly* to the right, several times, staying within a comfortable range of motion. While turning the head, become aware the degree of smoothness and ease of movement, and also notice the end point, visually, at the end of motion. Next, repeat the exercise, *slowly* turning the head to the right again several times, while *turning the eyes to the left.* Repeat *slowly,* head right and eyes left, for four to five repetitions. Now, resume turning the head right with eyes following right, and evaluate again the quality of movement and the visual end point of the movement. Are there any changes associated with this break in the habitual pattern of neck movement being influenced by eye movement? Did you notice a slight increase in the range of neck motion; i.e., was the visual end point of the movement slightly beyond what you made note of in the first exercise?

So, what we have talked about here are phenomena that transcend measurable, reproducible, scientific research, because they appear to be—in one way or another—imbued with the individual experiences, both physical and psychological, of the person or persons involved. We have discussed coming full circle in our approach to healing by recognizing, rethinking, the contribution of the laying on of hands despite the intangible, unreproducible results. Further, we have talked about one theory of touch therapy which acknowledges the importance of individual experience in creating behavioral, psychological patterns that influence movement patterns, and *vice versa.* As we have created these patterns because of survival needs in early childhood development, so we can recognize—rethink—these patterns and recreate ourselves, thus "coming full circle" in our own lives.

The Second Enlightenment: Religion and Liberalism

By
Bill Granstaff

A student of The Urantia Book *for 13 years, Granstaff is studying for his doctoral degree in political science. He has worked as a writer, producer, and performer of contemporary music.*

Beginning with Francis Fukuyama's statement that liberalism has won the ideological struggle within the world's economic and political institutions, I argue that the world's religious institutions are on the brink of a similar ideological struggle. This essay holds that The Urantia Book *is therefore the vital mechanism by which liberalism will ultimately be accepted by the world's religious institutions.*

I would be willing to bet that a demon lurks within the consciousness of virtually every Fellowship member. It is not a demon that lifts us up above our beds, scares our mothers or makes our skin change colors. Rather it is a mind demon whose small but undeniable voice calls out for some truly momentous world event that would confirm the truths of *The Urantia Book.* Our souls may tell us that personal religious experience is what truly matters, and it may also remind us how lucky we are to be future Agondonters, but our demon remains unfulfilled by such spiritual goodies. It whispers things like: "Hey, wouldn't it be nice if the new orbital telescope sends back a few shots of Satania?" It titillates us with: "Wouldn't it be far out if some archaeologist discovers Dalamatia, or some Mediterranean diver finds the Garden of Eden?" And it sullies our weak moments with such thoughts as: "Wouldn't it be happenin' if someone actually *translated*—a chariot of fire—on the evening news—complete with reaction shots of Jerry Falwell and perhaps the Pope? Boy, would *that* teach all my skeptical friends a lesson, nyah, nyah, nyah, nyah." Demons are by definition disgusting, and we are not, and should not be, proud of them. Perhaps we should just continue to ignore them as best we can.

But there is, in fact, something afoot in the world—something that this demon might find very interesting. The purpose of this essay is twofold: first, I want to draw attention to a momentous world event; second, and more importantly, I mean to draw attention to this momentous world event's momentous implications—implications which confirm the information in *The Urantia Book.* And, by the way, your demon might find this information very nourishing.

The Event

In the summer of 1989 the deputy director of the State Department's policy planning staff, Francis Fukuyama, published an article in the Washington-based quarterly, *The National Interest.* Fukuyama raised an intellectual tempest by announcing in this article, entitled "The End of History?" the "...unabashed victory of economic and political liberalism" over all "...viable systematic alternatives."(3) He wrote:

> What we may be witnessing is not just the end of the Cold War, or the passing of a particular period of postwar history, but the end of history as such: that is, the end point of mankind's ideological evolution and the universalization of Western liberal democracy as the final form of human government. (4)

Fukuyama characterizes the twentieth century as a period of ideological struggle that pitted two alternative ideologies, fascism and communism, against liberalism. At the beginning of the twentieth century liberalism in Europe and the United States had many acute problems. Fascism and communism saw these problems as resulting from liberalism's inherent contradictions. By fascist and communist lights these problems were the creation, not of inferior people, inferior decisions or non-liberal historical influences, but of the liberal structure and philosophy itself. Therefore, these problems could not be resolved within the context of modern liberalism. Subsequently, fascism and communism arose as alternative systems. Fascism emerged in the early twentieth century in response to liberalism's problems of political weakness, materialism, moral relativism and lack of community spirit. World War II and humanity's rejection of ultranationalism—with its promise of unending conflict—subsequently consigned fascism to history's proverbial dustbin. Unfortunately, political weakness, materialism, moral relativism and lack of community spirit remained. Communism, however, was a more serious challenge. (9)

Marx asserted that "liberalism's inherent contradictions were epitomized by the irreconcilable interests of capital vs. the interests of labor...." (See appendix A.) Lenin and Stalin created one of world history's most profound social disasters—the Soviet Union—in the name of resolving this so-called liberal contradiction. But Fukuyama points out that according to the latest generation of Soviet emigres, Marxism as an ideology has lost all credibility —*especially* among the Soviet elite. Contemporary Soviets are united by a different ideology: cynicism. (12) "There is a virtual consensus

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The world community has, in spirit if not in fact, adopted the liberal economic and political paradigm, and... there appear to be no more credible alternatives.

among the currently dominant school of Soviet economists now that central planning and the command system of allocation are the root cause of economic inefficiency, and that if the Soviet system is ever to heal itself, it must permit free and decentralized decision-making with respect to investment, labor, and prices." (12) Further, Fukuyama describes the replacement of the former economic/political principles by other principles that "...do not amount to liberalism per se but whose only connecting thread is liberalism." (12)

But what of the contradiction Marx referred to—that of capital and labor? Fukuyama holds that it is largely resolved in the contemporary liberal welfare democracy. Though there are rich people and poor people, capital and labor, the root causes of economic inequality have more to do with individuals' premodern cultural and social characteristics than with the underlying legal and social structure of our society, which remains fundamentally egalitarian and moderately redistributionist. (9)

But Fukuyama's hypothesis—that liberalism is the final economic and political ideology—still begs an important question. Given the failure and dissolution of liberalism's alternatives, have the so-called contradictions or problems that spawned them disappeared also? The answer to this question is unfortunately quite obvious. Any two year old can share it with you. No! (Two year olds are rather emphatic.)

Assuming that Fukuyama's hypothesis is correct — and I believe it is — that liberal economics and politics is now the accepted planetary norm, what is it that humankind has finally accepted?

Fukuyama never precisely defines liberalism (there may be no universally accepted definition), but a definition is required for the purposes of this essay. Robert Fowler writes that liberalism consists of three closely related principles: (1) a commitment to skeptical reason, an affirmation of pragmatic intelligence, and an uneasiness about both abstract philosophical thinking and nonrational modes of knowledge; (2) enthusiasm in principle (and increasingly in practice) for tolerance not only in political terms but much more obviously in terms of lifestyle and social norms; and (3) affirmation of the central importance of the individual and individual freedom." (1989, 4)

When Adam Smith wrote *The Wealth of Nations* in 1776, he articulated liberalism as applied to economics:

> The natural effort which every man is continually making to better his own condition is the principle which keeps the economic mechanism in activity. The uniform, constant, and uninterrupted effort of every man to better his condition is the principle from which public and national, as well as private, opulence is originally derived (qtd. in Morrow 65).
>
> Every man, as long as he does not violate the laws of justice, is left perfectly free to pursue his own interest his own way, and to bring both his industry and capital into competition with those of any other man, or order of men. The sovereign is completely discharged from a duty, in the attempt to perform which he must always be exposed to innumerable delusions, and for the proper performance of which no human wisdom or knowledge could ever be sufficient; the duty of superintending the industry of private people, and of directing it towards the employment most suitable to the interest of society (qtd. in Friedman 20).

The United States Constitution and the Bill of Rights among many other Western national systems applied liberalism to politics. John Stuart Mill, in his famous essay, "On Liberty," offered another very succinct canon of liberalism, subsequently known as the "Harm Principle."

> That principle is, that the sole end for which mankind are warranted, individually or collectively, in interfering with the liberty of action of any of their number, is self-protection. That the only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others. His own good, either physical or moral, is not a sufficient warrant. He cannot rightfully be compelled to do or forbear because it will be better for him to do so, because it will make him happier, because, in the opinions of others, to do so would be wise, or even right. These are good reasons for remonstrating with him, or reasoning with him, or persuading him, or entreating him, but not for compelling him, or visiting him with any evil in case he do otherwise. To justify that, the conduct from which it is desired to deter him, must be calculated to produce evil to someone else. The only part of the conduct of any one, for which he is amenable to society, is that which concerns others. In the part which merely concerns himself, his independence is, of right, absolute. Over himself, over his own body and mind, the individual is sovereign (qtd. in Diggs 190).

Put very simply, nations that adopt laissez-faire policy and liberal democracy articulate liberalism as applied to economics and politics.

With liberalism now more or less defined, I can conclude this section by pointing out that the scholarly community by and large agrees with Fukuyama—that the world community has, in spirit if not in fact, adopted the liberal economic and political paradigm, and that there appear to be no more credible alternatives. This is a momentous world event by virtually any standard. But the event's implica-

tions are likewise momentous, especially for those of us in the Fellowship. In the next section I will discuss these implications and the role that *The Urantia Book* may play in the world events that follow. You may inform your demon that it is feeding time.

Feeding Time

Sociologists, anthropologists, political scientists and others have arbitrarily divided humankind's social institutions into three general categories: political institutions, economic institutions, and religious institutions. Fukuyama presents a convincing argument that two out of three of the planet's major social institutions—those of politics and economics—have adopted liberal norms and parameters. The implication and my hypothesis should be obvious: The next phase of planetary social evolution and ideological conflict will concern the adoption of liberal principles by the third and final category of social institutions—the planet's religious establishment. And strangely enough, it is at just this time that *The Urantia Book* conveniently appears. But before dealing with *The Urantia Book's* role in this upcoming struggle, I must answer a very important question concerning the feasibility of my implication/hypothesis. Would it be unusual for the world's three general social institutions to borrow philosophies and norms from each other? Once again we may utilize the communicative abilities of our two year old. The answer, as I shall show, is: No! (I must, perhaps, give this two year old a cookie.)

In order to illustrate the precedent for this brand of institutional osmosis, I will briefly highlight several important aspects of European political/economic and religious evolution. Aristotle (384-322 B.C.) undertook, principally in *Nicomachean Ethics* and the *Politics,* to construct a science of the *polis.* He understood the polis or city/state as an association whose primary purpose was the formation of character—a means of creating quality citizens (Diamond 1976, 79). For him the polis was an instrument by which the statesman could make the citizenry self-sufficient in goods, and fine-tune personality unification; it was as much concerned as any church with the virtue of its citizens (Diggs 11-12). But it is important to emphasize that Aristotle and the Athenians of his time had no true religion worthy of the name. Their system of gods was more an intellectual creation than a standard for normative valuations. Thus Aristotle's concept of the polis naturally included elements that were soon to fall under other jurisdictions. There was absolutely no separation of political, economic or religious institutions.

Christianity radically transformed Aristotle's classic state concept. And it is here that we see an example of how a wholly religious concept modified a political/economic concept. Saint Paul said, "For ye are all one in Christ Jesus" (qtd in Diggs 17), and later the Christian Church became the representative of the Word of God. Thus the Christian could quote Aristotle in arguing that civil law was subject to the judgment of higher authority; but in claiming that the way to salvation and virtue was in the Church, as distinguished from the state, he broke sharply with Aristotle's tradition of the polis. The Christian Church created the impetus for one of Western civilization's most important social norms: the separation of church and state. The function of the state was distinctly limited, and a person's greatest good was to be found outside its jurisdiction—in the Church. Thus a religious concept profoundly changed the political/economic institutions.

Over several hundred years this separation of church and state, the Christian concept of Christians being equal children of God, plus the slow modernization of Europe led to what is today called the Enlightenment. Probably the Enlightenment's most important economic/political/philosophic result is called "liberalism." Liberalism was derived from the philosophies and attitudes of such great thinkers as Thomas Hobbes, John Locke, Adam Smith, Rene Descartes, the Baron de La Montesquieu, and later Jeremy Bentham and John Stuart Mill.

The following point is very important: liberalism is the epitome of political/economic institutions borrowing important concepts from religious institutions. Liberalism articulated in the political and economic sphere the vital Christian axiom that all men are the equal children of God, and expanded it into the sentiments of basic white male equality and the three principles I advanced previously: (1) a commitment to skeptical reason and an uneasiness about both abstract philosophical thinking and nonrational modes of knowledge; (2) tolerance, and (3) affirmation of individual freedom (Fowler 1989, 4).

Except for Locke—and even his case may be argued—none of the great European philosophical contributors to liberalism from the seventeenth through the nineteenth centuries was an orthodox Christian. But the classic liberal thinkers simply did not propose to separate religion from their liberal political and social thought. Indeed, for all of them religion was integral to liberalism, most commonly as a

The implication and my hypothesis should be obvious: The next phase of planetary social evolution and ideological conflict will concern the adoption of liberal principles by the third and final category of social institutions—the planet's religious establishment.

Thus liberalism was designed to work hand in hand with religion to provide life, liberty and the pursuit of happiness.

Assuming for the moment that I am correct, that religion does sooner or later adopt liberal principles, what would this religion look like?

philosophical and/or practical basis that would maintain a cohesive moral standard, a grounding for their social order (Fowler, 10-11). Thus liberalism was designed to work hand in hand with religion to provide life, liberty and the pursuit of happiness. Liberalism by itself was never intended to do more than provide economic and political security and enfranchise the individual to make important political and economic choices.

One of the most important political results of liberal thought was the subsequent overthrow of European monarchies and their replacement by liberal democratic political institutions. But it is at this point in European history that religious institutional influence changed in character. Whereas before, Christian theology drew political and economic progress forward via its axiom that all Christians were equal children of God, now, as a result of the Church's closeness to the European monarchical regimes—especially the Catholic states, it stood *against* the very forces of progressive liberal democracy that its influence had nurtured. When the citizens, especially the intellectuals, overthrew these monarchies, they also rejected the Church and Christianity. In 1835 a troubled Alexis de Tocqueville wrote:

> Christianity, which has declared all men equal in the sight of God, cannot hesitate to acknowledge all citizens equal before the law. But by a strange concatenation of events, religion for the moment has become entangled with those institutions which democracy overthrows, and so it is often brought to rebuff the equality which it loves and to abuse freedom as its adversary, whereas by taking it by the hand it could sanctify its striving (1968, 16).

Thus many Europeans could not separate Christianity's spiritual message from its political and economic message, and with the French Revolution and the Revolutions of 1848 the European Church and Christianity were severely discredited. European intellectuals perceived Christianity and modernity as opposites while many European commoners saw Christianity as the monarchy's prostitute. Instead of responding positively to liberalism's progressive influence, European religious institutions articulated another of their axioms—the axiom that states that "it is more blessed to give than to receive." They therefore refused to accept liberalism's invigorating principles that enfranchised individual choice—the very principles that had grown naturally from Christianity's own theology. The Church elected to become instead and in essence a thing apart. Liberalism, on the other hand, found itself standing naked, as it were, with its individualism and self-interest exposed and unmitigated by the church's spiritual influence. And thus the stage was set for the horrors of the twentieth century.

Shortly after the Revolutions of 1848, due to increasing industrialization, information and mobilization, heretofore unnoticed problems began to bubble to the surface. Karl Marx saw these problems as the result of internal contradictions of capitalism. That the problems might have had a spiritual cause never entered Marx's thoughts. After all, he was an intellectual and an atheist. After WWI the fascists saw European society's political weakness, moral relativism and absence of community spirit. But once again spirituality had been discredited in the eyes of the European intellectuals. The thought that a more salient and efficient spiritual system might be a solution never occurred to them. These societal pathologies' only solution, in the eyes of the fascists and communists, was a radically different political/economic system. Thus, as Fukuyama has written, the twentieth century has experienced the costly trial and rejection of both fascism and communism as alternatives to liberalism. Liberalism has been declared, as of the dissolution of communism and the publication of Fukuyama's article, the winner.

To summarize, I have described how European political and economic institutions have allowed themselves to be transformed by borrowing superior religious concepts. As my two year old's emphatic and previous "No!" indicated, there is indeed precedent for these three institutions to carry on symbiotically—each nurturing the others. I have also shown that since liberalism's birth this symbiosis has largely ceased, and I have speculated as to why the modern world's religions seem irrelevant and unable to stabilize contemporary mores.

Now for the final element of my argument. Assuming for the moment that I am correct, that religion does sooner or later adopt liberal principles, what would this religion look like? I will now take Robert Booth Fowler's three liberal principles and apply them to the spiritual medium.

Liberal Principle #1:

> ...a commitment to skeptical reason, an affirmation of pragmatic intelligence, and an uneasiness about both abstract philosophical thinking and nonrational modes of knowledge (Fowler 4).

Liberal Spiritual Principle #1:

Liberal religion will require a religionist to sincerely evaluate spiritual theories—

theologies—in relation to his/her own experience. It would by no means require rejection of them all. It would require mutable theologies and careful validation of abstract thoughts by observation in the empirical world.

Liberal Principle #2:

...enthusiasm in principle (and increasingly in practice) for tolerance not only in political terms but much more obviously in terms of lifestyle and social norms (Fowler 4).

Liberal Spiritual Principle #2:

Liberal religion will respect other religionists' belief systems. And, with qualification similar to those that liberalism requires of economics and politics will allow virtually complete spiritual freedom.

Liberal Principle #3:

...affirmation of the central importance of the individual and individual freedom (Fowler 4).

Liberal Spiritual Principle #3:

Liberal religion would hold that the individual has the right to have his/her own concept of God. The individual's own concept of God is hereby enfranchised by the world's religious institutions.

The previous example of liberalism applied to the spirit medium should sound familiar. The liberal spiritual principles embody some of the most important spiritual concepts in *The Urantia Book*. I will now cite some specific examples that demonstrate how *The Urantia Book* validates and complements these principles.

Liberal Principle #1:

...a commitment to skeptical reason, an affirmation of pragmatic intelligence, and an uneasiness about both abstract philosophical thinking and nonrational modes of knowledge (Fowler 4).

Liberal Spiritual Principle #1/ Urantia Complement:

The proof that revelation is revelation is this same fact of human experience: the fact that revelation does synthesize the apparently divergent sciences of nature and the theology of religion into a consistent and logical universe philosophy, a co-ordinated and unbroken explanation of both science and religion, thus creating a harmony of mind and satisfaction of spirit which answers in human experience those questionings of the mortal mind which craves to know *how* the Infinite works out his will and plans in matter, with minds, and on spirit (*Urantia Book* 1955, 1106).

Reason is the proof of science, faith the proof of religion, logic the proof of philosophy, but revelation is validated only by human *experience* (*Urantia Book* 1955, 1106).

Liberal Principle #2:

...enthusiasm in principle (and increasingly in practice) for tolerance not only in political terms but much more obviously in terms of lifestyle and social norms (Fowler 4).

Liberal Spiritual Principle #2/ Urantia Complement:

From this day, for the remainder of his natural life, Ganid continued to evolve a religion of his own. He was mightily moved in his own mind by Jesus' broadmindedness, fairness, and *tolerance* [my emphasis]. In all their discussions of philosophy and religion this youth never experienced feelings of resentment or reactions of antagonism (*Urantia Book* 1467).

Nathaniel most revered Jesus for his tolerance. He never grew weary of contemplating the broadmindedness and generous sympathy of the Son of Man (*Urantia Book* 1559).

Liberal Principle #3:

...affirmation of the central importance of the individual and individual freedom (Fowler 4).

Liberal Spiritual Principle #3/ Urantia Complement:

But I have come among you to proclaim a greater truth, one which many of the later prophets also grasped, that God loves *you*—every one of you—as individuals (*Urantia Book* 1629).

The religion of the kingdom is personal, individual; the fruits, the results, are familial, social. Jesus never failed to exalt the sacredness of the individual as contrasted with the community (*Urantia Book* 1862).

James Zebedee had asked, 'Master, how shall we learn to see alike and thereby enjoy more harmony among ourselves?' When Jesus heard this question, he was stirred within his spirit, so much so that he replied: 'James, James, when did I teach you that you should all see alike? I have come into the world to proclaim spiritual liberty to the end that mortals may be empowered to live individual lives of originality and freedom before God. I do not desire that social harmony and fraternal peace shall be purchased by the sacrifice of free personality and spiritual originality. What I require of you, my apostles, is *spirit unity*—and that you can experience in the joy of your united dedication to the wholehearted doing of the will of my Father in heaven (*Urantia Book* 1591).'

The previous examples are merely representative of the overarching liberal spirit of *The Urantia Book*. The book's central concept, that each individual is indwelt by a fragment of the Father, validates liberalism's most profound principle—the importance of the individual—throughout eternity. The teachings of *The Urantia Book* are, in effect and in spirit, liberalism applied to religion.

Liberal religion will respect other religionists' belief systems. And, with qualification similar to those that liberalism requires of economics and politics will allow virtually complete spiritual freedom.

The teachings of The Urantia Book are, in effect and in spirit, liberalism applied to religion.

For the liberal message to successfully and efficiently transform world religious institutions it must be sufficiently focused on the spiritual.

The Urantia Book—representing liberalism—will inspire the transformation of the world's religions into institutions capable of answering the spiritual needs of a liberal world

Conclusion

So the stage has been set. Christ Michael's first visit to Urantia transformed Europe's religious institutions with the message that every woman, man, boy or girl was a child of God. Later this religious concept and the concept of the Christian Church as the Word of God led to a political event that revolutionized European history: the separation of church and state. Still later the world's political and economic institutions borrowed the salient Christian concept of spiritual equality and enfranchised individual political and economic liberty under the banner of liberalism. The results were astounding. As Fukuyama has pointed out, today, with the dissolution of communism, virtually all the nations of the world understand and accept, in their various contexts, political and economic liberalism.

And now is the time for the Spirit of Michael to come full circle—from the religious institutions that taught spiritual equality, to political and economic institutions that supported the primacy of the individual, and now finally back again to the religious institutions which will one day enfranchise individual spiritual choices. This is where *The Urantia Book* answers a critical evolutionary need. Today, high politics and economics define liberalism in as many different ways as there are experts—and there are many experts. It might take centuries for a liberalism so loosely defined in terms of politics and economics to slowly seep into the religious establishment. For the liberal message to successfully and efficiently transform world religious institutions it must be sufficiently focused on the spiritual. *The Urantia Book* systematically defines liberalism in spiritual terms. The time for the struggle approaches.

Robert Booth Fowler writes that current membership in mainline Protestant churches—the churches attended largely by the educated elites in America, is well below their 1950s proportionate strength of the total U.S. population *and* in absolute numbers (1989, 96). Further, these churches are losing a good number of their young adults (20-35 years old) "...because they are simply no longer interested in religion, certainly organized religion, though they normally claim to believe in God and even to have spiritual interests of some sort" (22-23). Andrew Greeley complains that Catholics "...blithely practice a selective (or individualistic and subjective) Catholicism, choosing those parts of the religion they like and ignoring or even denouncing those parts they don't like" (1984, ch. 1). Liberalism is slowly seeping in, like it or not. But the people who Fowler and Greeley describe are political leaders, managers of businesses, lawyers, doctors and educators who are wandering around in a spiritual nether world, making important decisions outside the context of stable mores. The religion that these people are searching for is liberalized religion—the religion of Jesus—the religion described in *The Urantia Book*. Just as the Christian Church provided the inspiration for liberalism's transformation of the political and economic world, *The Urantia Book*—representing liberalism—will inspire the transformation of the world's religions into institutions capable of answering the spiritual needs of a liberal world, and in so doing it will resolve the contradictions that have tormented so many souls in the twentieth century.

APPENDIX A

"Hitherto, every form of society has been based, as we have already seen, on the antagonism of oppressing and oppressed classes. But in order to oppress a class, certain conditions must be assured to it under which it can, at least, continue its slavish existence. The serf, in the period of serfdom, raised himself to membership in the commune, just as the petty bourgeois, under the yoke of feudal absolutism, managed to develop into a bourgeois. The modern laborer, on the contrary, instead of rising with the progress of industry, sinks deeper and deeper below the conditions of existence of his own class. He becomes a pauper, and pauperism develops more rapidly than population and wealth. And here it becomes evident that the bourgeoisie is unfit any longer to be the ruling class in society, and to impose its conditions of existence upon society, as an over-riding law. It is unfit to rule, because it is incompetent to assure an existence to its slave within his slavery, because it cannot help letting him sink into such a state that it has to feed him. Society can no longer live under this bourgeoisie, in other words, its existence is no longer compatible with society. The essential condition for the existence, and for the sway of the bourgeois class, is the formation and augmentation of capital; the condition for capital is wage labor. Wage-labor rests exclusively on competition between the laborers. The advance of industry, whose involuntary promoter is the bourgeoisie, replaces the isolation of the laborers, due to competition, by their involuntary combination, due to association. The development of Modern Industry therefore cuts from under its feet the very foundation on which the bourgeoisie produces and appropriates

products. What the bourgeoisie therefore produces, above all, are its own grave-diggers. Its fall and the victory of the proletariat are equally inevitable" (Marx, Engels 1964, 23-24).

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Engineering—Science and Magick

by
L. Dan Massey, Jr.

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*...The ancients sought a supernatural explanation for all natural phenomena not within the range of their personal comprehension; and many moderns continue to do this. The depersonalization of so-called natural phenomena has required ages, and it is not yet completed. But the frank, honest, and fearless search for true causes gave birth to modern science: It turned astrology into astronomy, alchemy into chemistry, and magic into medicine. (*901)*

The intellectual history of the human race is punctuated by the names of those *scientific* visionaries whose superior grasp of the relationships of reality ever and again enabled them to explain and to expound the associations of cause and effect by which the elements of everyday experience are determined. The physical record of the cultural attainments of humankind is likewise marked by the relics of *engineering* prowess which bear silent witness to an inspired vision of a different, more practical kind. Scientists are remembered for what they help their fellow man to understand. The practical physical works which engineers help their fellow man to create are often the only record of the conceiving mind behind the action.

Though most people tend to conceive of science and engineering as basically the same activity, and although our culture often treats the professions almost interchangeably, the two disciplines, though related, are fundamentally different in their approach and goals. Basically, the scientist seeks to expand *knowledge of* reality, while the engineer seeks to expand *control over* reality. In contemporary technological culture, the scientist pursues his objective by use of the methods of rational analysis and drawing upon a body of understanding established with great effort over many centuries. The modern engineer likewise uses methods of rational analysis and works with theories developed and tested by the scientific method. However, the engineer will also draw on a large body of *practical* information to achieve the desired goal.

To the scientist, practical knowledge is of value when it suggests possible directions for fruitful exploration by experiment and analysis. The scientist then seeks to find an all-encompassing *theoretical* viewpoint which illuminates the underlying process. The engineer, on the other hand, is satisfied to have and to use *practical* knowledge for its own value in furthering the control of reality. The engineer will use practical knowledge effectively even when there is no clear explanation for why it works.

...the span of control over reality which engineering has provided to humankind has usually been somewhat greater than the scope of understanding of the controlled reality provided through established science.

For these and related reasons, the *span of control* over reality which engineering has provided to humankind has usually been somewhat greater than the *scope of understanding* of the controlled reality provided through established science. In the twentieth century, with the increasing effectiveness and breadth of scientific theories, the intrinsic advantage provided by pragmatic engineering appears to have diminished.

As a modern example of this, consider the recent discovery of so-called *high temperature superconductors*. These materials were discovered about five years ago by careful experimentation pursued in spite of a well-established theory seeming to suggest such phenomena were impossible. Although no theory yet satisfactorily explains the high-temperature phenomenon, it is clear that it results from a different physical process than that which accounts for the low-temperature case.

Let me explain this in greater detail. A conductor is any material which will pass an electrical current. All known materials which conduct electricity at room temperature exhibit a characteristic called *resistance*. That is, they appear to resist the flow of an electric current to a greater or lesser degree. This resistance eventually robs the current of its energy, which is converted into heat, the random vibrations of the atoms of the conducting material. A number of years ago, when mechanical refrigeration had become perfected to the point that it was possible to liquefy helium, experimenters immersed samples of conducting material into liquid helium so that they were cooled to the point that the internal vibrations of heat were almost totally suppressed. In these very cold materials a new phenomenon, called *superconductivity*, was observed.

Superconductivity is the passage of an electric current through a material without any resistance. A ring of superconducting copper (or lead or aluminum or iron) will conduct an electric current virtually forever without the application of an external power source. For many years there was no known explanation for this phenomenon, yet experimenters continued to find new materials which could become superconductors at higher temperatures, hoping someday to develop a material which might exhibit the property at room temperature. Eventually a theory was proposed which explained superconductivity in terms of the quantum physics of solid materials.

To understand this theory it is useful to recall the much earlier theory by which Louis de-Broglie explained the physical stability of the hydrogen atom. DeBroglie suggested that the orbiting electron of hydrogen created a wave-like disturbance in the content of space by its passage. According to the classical electromagnetic theory of Maxwell, the radiation of this wave would rob the electron of kinetic energy, causing it to slow down and be drawn into the nucleus. DeBroglie's insight was that, if the electron circled the nucleus rapidly enough, it would encounter the field of its radiated wave (on a subsequent oscillation) and would draw energy from the wave. He suggested that, for electron orbits of certain specific sizes, determined by the wavelength of the radiated wave, the gain of energy from the radiated field would exactly balance the loss to the radiation by the acceleration of the electron in its orbit, producing a stable atom.

I apologize to the members of my audience who are familiar with the more modern interpretations of quantum mechanics for this naïve explanation. I have chosen it because it better supports an intuitive understanding of the accepted explanation of low-temperature superconductivity. Basically, the theory which explains superconductivity asserts that the movement of electrons through a bulk conductor is, at sufficiently low temperature, analogous to the movement of a single electron through an atomic orbit. The passage of an electron through a conducting material disturbs the alignment of the nuclei of atoms within the material. The forces between the atoms try to oppose this motion with the result that a vibratory wave of energy passes through the material. Since the electrical current consists of a vast number of electrons slowly migrating through the material in a common direction, it is very likely that the wave action which retards one electron will accelerate the motion of another in the current so that there is no net loss of energy to the current.

A very low temperature is required for this phenomenon to be observed because the natural thermal vibrations of the atoms of the material tend to disrupt the electron flow in ways which prevent this coupling from occurring. Looked at another way, there is a lot of background noise in the material until it is made very cold. This background noise limits the distance over which the coherent wave induced by the passage of one electron can affect the motion of another. If the distance over which the emitted wave remains coherent does not include a large enough volume of the material to provide a suitably positioned electron to receive the emitted energy, the wave will be dissipated as heat in the material, which will then behave like an ordinary resistive conductor.

This theory seemed to imply that, above a very cold temperature, superconductivity would be impossible. Although the physicists who developed the low-temperature theory won a Nobel prize for their work, some experimenters continued to search for materials that would superconduct at much higher temperatures.

A limited number of applications of low temperature superconductivity were achieved, some on a very grand scale, such as the superconducting magnets for the Tevatron particle accelerator which has recently begun productive work at the Fermi National Accelerator Laboratory in Batavia, Illinois. This mammoth engine for high energy physics research contains hundreds of very large superconducting magnets for the simple reason that it is more cost-effective to refrigerate the magnets than to provide the power to overcome conventional electrical resistance.

About five years ago, a team of experimenters working in Germany discovered a ceramic material of very poor conductivity at room temperature which becomes superconductive when cooled to the temperature of dry ice (much warmer than liquid helium). Immediately large numbers of experimenters worldwide undertook to duplicate and to extend this initial work. Without any clear understanding of the underlying phenomena, these teams achieved a rapid series of successes, so that the application of superconductive material to everyday needs has come several steps closer to reality.

At the moment there is still no generally accepted theoretical explanation for this new class of superconductive phenomena, yet work continues unabated to achieve practical commercial application. It remains to be seen whether theory will precede application; however, it seems clear that the first practical applications will emerge from painstaking practical experiments guided by only a rudimentary understanding of the underlying processes and not from any grand synthesis of theory which explains everything with a few equations. Of course, eventually theory will catch up and, probably, open doors to applications undreamed of in the present crude experimental stage.

This single case fairly represents the nature of humankind's scientific and technological progress. Although we generally reach

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towards a deeper understanding of the natural world, the most successful and powerful motivator is usually the desire to attain *control*. Initially we achieve control by practical methods, that is, by doing what has been found to work, even when we do not fully understand the reasons for it working. The extension of practical control usually occurs from a foundation of fully understood, less complex phenomena. Eventually, the discordance between practice and theory becomes so extensive that a reformulation occurs in the way the real phenomena of experience are understood. This reformulation, called a *paradigm shift*, leads to new theories which provide deeper, more comprehensive understanding of the real world.

The achievements of engineering that is not based on a deep theoretical foundation have been eclipsed by recent successful applications of theory.

The practical, pre-scientific applications of experience have, in recent years, been rather undramatic. The achievements of engineering that is not based on a deep theoretical foundation have been eclipsed by recent successful applications of theory. For example, neither nuclear weapons nor nuclear power were achieved until *after* the theory of relativity and the principles of quantum mechanics were available to provide a basic understanding of the processes involved. In an earlier era, radio transmission and electrical illumination were developed almost entirely upon the predictions of electromagnetic theory, yet the practical reception of radio waves and the practical production of electric light depended, at first, on pre-scientific applications of practical knowledge.

Pre-scientific growth of technological control mechanisms is excruciatingly slow, by modern standards.

The most famous modern story of pre-scientific invention is surely the legend of Thomas Edison's search for a material suitable to be the filament of an electric lamp. The theoretical science which underlay Edison's invention was the knowledge that a current passed through a resistive conductor could produce enough heat to make the conductor emit light. A second, equally important piece of knowledge was that highly heated things tend to melt or vaporize; therefore, the desired material would be something which did not melt or evaporate at white heat. A third point was that many things which do not melt or evaporate will burn, so that oxygen must be excluded from the hot filament.

This much had been well understood for many years before Edison began his search. In fact, the principles had all been fully tested and proven in numerous laboratory experiments. It remained to find a material which would meet the *practical* requirements of a lamp filament (which must also have included mechanical durability and low cost). For this Edison undertook systematic research using the only known method, *trial and error*. Having eliminated a vast number of possibilities for various well-understood theoretical reasons, he then systematically tested every remaining candidate until he found something acceptable. The major problem with such searches is that the theoretical reasons used to exclude a possibility may not be valid for the exact situation in which a solution is sought, so that many good possibilities are never really evaluated.

As we look back through the centuries, the quality of human technical invention becomes increasingly dominated by the pre-scientific. The earliest steam engines, used to pump water from mines, operated with extremely low efficiency because they were built on the practical observation that expanding steam can do useful work. Later, as a deeper, theoretical understanding of thermodynamics developed, it became clear that greater power could be obtained from smaller machines with less use of heat. The early steam engines were not magical to anyone who troubled to understand the simple mechanical principles involved, yet they represented an unfamiliar synthesis of everyday knowledge to achieve practical control over important phenomena. The records of the time show that, to many thoughtless people, they appeared to border on the supernatural.

Pre-scientific growth of technological control mechanisms is excruciatingly slow, by modern standards. The further we look back, the smaller the theoretical base on which innovations are founded and the more painstaking the search to find efficient solutions. In addition, the record grows more shadowy, since only a few of the artifacts of pre-scientific engineering have been preserved. We can still examine the architecture of major buildings, the properties of household artifacts, the fabrication of weapons, and the layout of irrigation, drainage and aqueduct systems. In addition, there are written or visual records of the design and appearance of mills, clocks, building and dockyard machines, ships, wagons, and military engines, as well as chemical and medical recipes.

Fragments of pre-scientific technology have survived from almost all major planetary cultures. Within any cultural stream we know the most where written records survive. Only the greatest artifacts survive across thousands of years because of size and durability. A few others have been preserved because of great cultural significance or on account of accident. Against this backdrop, we see that the general human attitude towards technology has only recently (on a historical time scale) become

relatively rational. In past ages the practical knowledge of how the world worked (and even the fact that the world worked systematically at all) was held by the few and applied by the few, sometimes to benefit and other times to exploit or mystify the ignorant.

In the final analysis, the human approach to control over reality begins with the observation of a desired result in nature and progresses to attempts to recreate the conditions under which the result occurred. Unfortunately, there is no obvious way for the pre-scientific mind, initially lacking any method for systematic discovery, to detect among the multitude of apparent conditions the few which effect the desired result. As a result, early human attempts to establish reality control rapidly become engulfed in large numbers of irrelevant beliefs, or *superstitions.*

An interesting example of this is described in *The Urantia Book,* in connection with Andon's discovery of a way to make fire:

...Andon signified to his mate that he thought he could make fire with the flint. ... Finally, one evening about the time of the setting of the sun, the secret of the technique was unraveled when it occurred to Fonta to climb a near-by tree to secure an abandoned bird's nest. The nest was dry and highly inflammable and consequently flared right up into a full blaze the moment the spark fell upon it....

...But it was a long time before the twins learned that dry moss and other materials would kindle fire just as well as birds' nests. (*712)

These pre-rational confusions can only be eliminated by systematic collection and analysis of experiential observations and by faith that such results are meaningful for achieving enhanced reality control, and this is the beginning of the emergence of the scientific attitude. In many ways, the practically tested conclusions of rational analysis are the scientific theories of the past; however, they are so far separated in their world view from our present-day understanding as to merit the designation pre-scientific.

The fascination of early superstition was the mother of the later scientific curiosity. There was progressive dynamic emotion—fear plus curiosity —in these primitive superstitions; there was progressive driving power in the olden magic. These superstitions represented the emergence of the human desire to know and to control planetary environment. (*970)

So, in earlier times the linkage between engineering and science was less clear than it is today. Many things were known to work, even though no one understood why they did. I will use the term *magick* to characterize these pre-scientific approaches of engineering to achieving control over reality. I have chosen the older spelling of the word, as is common in the Western esoteric tradition, to distinguish it from consciously planned deception, such as prestidigitation, and from the supernatural delusions of superstition, of which *The Urantia Book* warns:

...if modern methods of education should fail, there would be an almost immediate reversion to the primitive beliefs in magic. These superstitions still linger in the minds of many so-called civilized people. ... And intelligent human beings still believe in good luck, evil eye, and astrology. (*972)

The pre-scientific, or *magickal* phase of humankind's expanding control over reality is simply that type of engineering in which results are achieved without recourse to a fully rational analysis of causes and effects in terms of well-understood fundamental principles. The penetration of human understanding into a phenomenal domain begins with the observation and application of magick. Magick which has become systematized to the point that it can be executed successfully from a purely mindal viewpoint comes to be considered common sense or practical knowledge. Once an explanation has been provided, reducing the knowledge to a systematic combination of thoroughly reliable principles, the phenomenon is considered to be a part of practical science and is ready for full engineering application.

These considerations bring me to the second, and altogether stranger part of this presentation, for I desire to discover with you those elements of contemporary thought and experience from which control of new types of reality may someday emerge. I will show you where some magick is now. Let me clarify my terms:

The term *magick* denotes a relationship between human intention and reality extension. The magickal relationship is hidden from understanding; it is *occult.* Yet the cumulative experience of the individual and the community progressively shows the relationship to be reproducible, implying that it must have a *causal* foundation. Once this causal foundation has been illuminated, the relationship is no longer occult and is no longer considered magickal. It has become *scientific.*

We know that the finite reality of everyday experience exists in four domains—literal, mindal, spiritual, and personal. We also have certain indications from *The Urantia Book* concerning relationships of human intentional control in these different domains of reality. For example, in the spiritual domain we believe and often perceive that the intentional

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remembrance of the mortal life of the Creator Son enables the extension of his real presence into our conscious here and now. The recognition of the remembrance supper as a magickal relationship between human intention and spiritual extension exists in some form in almost all sects of present-day Christianity.

On the other hand, *The Urantia Book* tells us that the human control relationship is quite limited with respect to at least some literal realities:

The spirit can dominate mind; so mind can control energy. But mind can control energy only through its own intelligent manipulation of the metamorphic potentials inherent in the mathematical level of the causes and effects of the physical domains. Creature mind does not inherently control energy; that is a Deity prerogative. But creature mind can and does manipulate energy just in so far as it has become master of the energy secrets of the physical universe. (*1222)

When man wishes to modify physical reality, be it himself or his environment, he succeeds to the extent that he has discovered the ways and means of controlling matter and directing energy. Unaided mind is impotent to influence anything material save its own physical mechanism, with which it is inescapably linked. But through the intelligent use of the body mechanism, mind can create other mechanisms, even energy relationships and living relationships, by the utilization of which this mind can increasingly control and even dominate its physical level in the universe. (*1222)

Between these two extremes, there is much room for exploration and speculation. In the few minutes that remain to this presentation, I would like especially to focus your attention on the relationship between the intention of will and its extension to mindal realities. Is it not reasonable to expect that there exist ways in which human mindal intention relates directly to human mindal extension? *The Urantia Book* has much to say about such relationships within the individual personality, but what of the relationship between the mindal levels of several personalities? Exactly what is meant by *mind gravity*? What does it mean to *exchange your mind* for that of Jesus? In a few instances, *The Urantia Book* provides some suggestive or insightful comments. One of the more remarkable is this:

Always respect the personality of man. Never should a righteous cause be promoted by force; spiritual victories can be won only by spiritual power. This injunction against the employment of material influences refers to psychic force as well as to physical force. Overpowering arguments and mental superiority are not to be employed to coerce men and women into the kingdom. Man's mind is not to be crushed by the mere weight of logic or overawed by shrewd eloquence. While emotion as a factor in human decisions cannot be wholly eliminated, it should not be directly appealed to in the teachings of those who would advance the cause of the kingdom. Make your appeals directly to the divine spirit that dwells within the minds of men. Do not appeal to fear, pity, or mere sentiment. In appealing to men, be fair; exercise self-control and exhibit due restraint; show proper respect for the personalities of your pupils. Remember that I have said: "Behold, I stand at the door and knock, and if any man will open, I will come in." (*1765)

Consider the things which this statement seems to characterize as "psychic force." They are: overpowering arguments; mental superiority; weight of logic; shrewd eloquence; and emotion, including fear, pity, and sentiment. The idea that such phenomena of influence exist between minds is not remarkable. These are obvious extensions of a person's mental function influencing that of another. The intentional basis of these mindal extensions is unspecified, but it is clear that the intention to change another's mind extends in these cases through the observable information-patterning of the physical environment. The only occult process is the personal mechanism of will by which the intending individual takes extensible action.

Is it possible, however, that there is more to this whole thing than the obvious act of deciding what to say and of saying it? Is there some quality of mind which mediates the exchange of viewpoint beyond the information content of the observable utterances? Let us examine a series of remarkable statements.

...Mind Planners. These seraphim are devoted to the effective grouping of morontia beings and to organizing their teamwork on the mansion worlds. They are the psychologists of the first heaven....

Even on Urantia, these seraphim teach the everlasting truth: If your own mind does not serve you well, you can exchange it for the mind of Jesus of Nazareth, who always serves you well. (*553)

Because of the presence in your minds of the Thought Adjuster, it is no more of a mystery for you to know the mind of God than for you to be sure of the consciousness of knowing any other mind, human or superhuman. Religion and social consciousness have this in common: They are predicated on the consciousness of other-mindness. The technique whereby you can accept another's idea as yours is the same whereby you may "let the mind which was in Christ be also in you." (*1123)

Spirit-gravity pull and response thereto operate not only on the universe as a whole but also even

between individuals and groups of individuals. There is a spiritual cohesiveness among the spiritual and spiritized personalities of any world, race, nation, or believing group of individuals. There is a direct attractiveness of a spirit nature between spiritually minded persons of like tastes and longings. The term kindred spirits *is not wholly a figure of speech.* (*82)

The fact of the cosmic mind explains the kinship of various types of human and superhuman minds. Not only are kindred spirits attracted to each other, but kindred minds are also very fraternal and inclined towards co-operation the one with the other. Human minds are sometimes observed to be running in channels of astonishing similarity and inexplicable agreement. (*191)

...Adam and Eve, like their fellows on Jerusem, maintained immortal status through intellectual association with the mind-gravity circuit of the Spirit. When this vital sustenance is broken by mental disjunction, then, regardless of the spiritual level of creature existence, immortality status is lost. Mortal status followed by physical dissolution was the inevitable consequence of the intellectual default of Adam and Eve. (*845)

Adam and Eve could communicate with each other and with their immediate children over a distance of about fifty miles. This thought exchange was effected by means of the delicate gas chambers located in close proximity to their brain structures. By this mechanism they could send and receive thought oscillations. But this power was instantly suspended upon the mind's surrender to the discord and disruption of evil. (*834)

I believe that, if you will reflect on these and related statements from *The Urantia Book,* you will find that there is an underlying thread of an idea, which is that there is a finite space of mindal realities. In this space, mental state is defined by a positional metaphor and mental function (state transition) is defined by motion in response to the influences of mind circuits, mind gravity, and individual volition. Let me underscore this view of mind function with an additional quotation, which summarizes and applies the thought.

Likewise does the Infinite Spirit draw all intellectual values Paradiseward. Throughout the central universe the mind gravity of the Infinite Spirit functions in liaison with the spirit gravity of the Eternal Son, and these together constitute the combined urge of the ascendant souls to find God, to attain Deity, to achieve Paradise, and to know the Father. (*155)

I suggest to you that, within the universe view propounded by *The Urantia Book,* intermindal communication occurs without the mediation of observable physical energy streams modulated by information patterns. I further suggest that, where the transmission of physically detectable information structures (such as speech) appears to enable intermindal communication, the total observed effect also involves the action of *occult* (hidden or unobserved) mind phenomena. The communication of ideas which occurs when we read *The Urantia Book* is not simply the decoding of the letters and words on the printed page. Rather, the text serves as a material information carrier which, through the decoding process, affects the state of the electrochemical mind to strengthen the mind gravity grasp of the Spirit.

The communication of ideas which occurs when we read The Urantia Book is not simply the decoding of the letters and words on the printed page.

At the present stage in planetary development our understanding of mind phenomena is decidedly pre-scientific. In spite of the sincere efforts of generations of diligent students, neither psychology nor psychiatry have advanced towards effective, scientific understanding, much less control, of mental phenomena. In fact, neither discipline has succeeded in clearly defining the object of its study. Such epistemological issues as the distinction between the organic brain and the rational mind, to say nothing of the meaning of spirit and personality, continue to be matters of heated philosophical debate. Alchemy was more scientific than this by the time its practitioners had generally agreed to talk about earth, air, fire, and water.

Notwithstanding this paucity of rational analysis, practitioners of psychology and psychiatry often manage to accomplish useful results. In fact, they do this by *magick,* clothed in a semi-scientific rationale. If their magick appears to be more effective than some other magicks, it is surely because much honest critical effort has been expended to try to discover what magick works and what circumstances allow a magick to work. There are plenty of magicks that work much better than psychology, while still being magickal. Computer program design is, surprisingly, a largely magickal discipline that has worked quite effectively for many years, but is only recently starting to become scientific. To say something is magickal we do not mean that it is imaginary or ineffective. Rather, we mean that it works by an occult process. One does not get something for nothing. It often takes a great deal of effort to make one of these magicks work.

To say something is magickal we do not mean that it is imaginary or ineffective. Rather, we mean that it works by an occult process.

Of course, some magick is ineffective for its intended purpose. The results achieved are uncorrelated with the effort expended, either because the basic principle is false (superstitious) or because the antecedent requirements are poorly understood. I will call magick which

works *effective* magick. There are undoubtedly many magicks which are effective. Most magicks are only partially effective because of the problem of poorly understood antecedent requirements, and this, together with the extensive prevalence of outright superstition, brings down much modern skeptical criticism on all magickal endeavors.

We could infer from The Urantia Book that very strong emotions might be communicable directly from one mind to another by physically occult psychic means.

An examination of human beliefs, as well as the material I have quoted from *The Urantia Book*, suggests that of all the widely reported magickal phenomena, direct mind-to-mind communication, *telepathy*, might work (occasionally) because of a real, but occult, process. During this century a relatively large amount of investigative effort has been focused on demonstrating the reality of telepathy and other *parapsychological* phenomena such as clairvoyance, precognition, and psychokinesis. The fact that these experiences, particularly the appearance of precognition, are familiar to many people in their everyday life has done much to bolster popular belief in the reality of these things. Unfortunately, the relatively large amount of effort expended in parapsychological investigations has not yielded any clearly demonstrated, reproducible evidence of the reality of any of the claimed effects. The tendency of many self-proclaimed "psychics" to try to deceive naïve researchers, together with the occasional unscrupulous or self-deceived researcher, has given the field of parapsychological research an unsavory air in skeptical circles.

As always, there is a real problem in discerning the genuinely magickal from the fruits of fraud or self-deception

We could infer from *The Urantia Book* that very strong emotions might be communicable directly from one mind to another by physically occult psychic means. I will call this limited form of inherent, direct mind-to-mind communication *telempathy*. If I were to seek to demonstrate the reality of this phenomenon, I would want to work with subjects whose minds and value systems were as similar as possible to (perhaps) enhance whatever mental resonance would occur and to control the confounding effects of interpersonal variation in nature and nurture. Young homozygotic twins, never separated since birth and sharing an intensely spiritual contemplative nature would probably be ideal experimental subjects.

I am inclined to believe, for various reasons, that such experiments would be relatively encouraging. I think the problem of modern parapsychological research has been an unremitting desire for the premature attainment of statistically significant physical results. Such results are desired because they would give the subject "scientific" status and might lead to direct applications. *The Urantia Book* does not encourage much hope that "hard" phenomena like telepathy, psychokinesis, or precognition can occur without the mediation of volitional spiritual forces. If only "soft" phenomena like telempathy have an independent basis in reality (and it is by no means certain that they do), then the objective evidence will be difficult to develop and relatively unpersuasive to the dedicated skeptic.

It is clear that not all universe phenomena have, at the present stage of human scientific development, a rationally scientific explanation. Not all universe phenomena have even been observed or characterized. The skeptic who seeks to limit the range of things that may be designated *real phenomena* to those things which are rationally explained defines a phenomenally impoverished universe. The naïve believer who considers every magickal statement to be true turns the universe into an undifferentiated and incoherent morass of causeless effect and inevitable contradiction. The task of the rational pre-scientist (the *magician-engineer*, usually called a *wizard*) is to balance belief and skepticism in perfecting the practice of a magick, discovering something that really works.

There are many magickal beliefs of humankind that are at least a little true. Even the abomination of astrology contains a tiny fleck of fact (in an ocean of superstition) in its recognition of the twelve-fold classification of human personalities. From this viewpoint we can examine additional areas of partial truth in which future expansion of human intentional control may be expected. As always, there is a real problem in discerning the genuinely magickal from the fruits of fraud or self-deception. The desire for the extraordinary combined with the will to believe provide ample incentive to self-deception. When the subject of such inquiry is the psychic mind itself, the focus of both love and will, we should not be surprised if self-deception sometimes escalates into outright delusion. It is no accident that so many explorers of this frontier have relied on spiritual realities to stabilize and to guide their work.

The twentieth century has witnessed an extraordinary blossoming of the exoteric, as opposed to the esoteric, side of human intentional control through the products of scientific and engineering endeavor. This visible success has held the stage, front and center, while material-minded charlatans have foolishly aped the scientific process, diverting attention from remarkable esoteric disclosures. I would like briefly to probe this esoteric side of the modern age.

From time immemorial there have been isolated groups within the larger human society who have possessed (and usually concealed their possession of) a greater knowledge of planetary realities and cosmic circumstances than the human norm. *The Urantia Book* confirms the existence of such groups at various stages in planetary history. Machiventa Melchizedek taught truths of Havona and Paradise to Nordan the Kenite and his associates. While in Egypt, Jesus was seen by spiritual descendants of Ikhnaton from Memphis, who understood certain phases of his divine mission. On Urantia today, there exists a cosmic reserve corps of universe-conscious citizens.

Over the centuries many other groups of people have, for various reasons, concealed the true nature of their beliefs and practices from a larger, unsympathetic community in which they functioned. In modern Western society during the last hundred years many of these groups have felt relatively secure in making their unorthodox world view public. With the vast increase of international travel and communication our understanding of the variety of human psychic expression has been greatly broadened. As one example, a remarkable Englishwoman, Alexandra David-Neel, traveled to Tibet and returned with a first hand account of and experience in tantric yoga. Her reports greatly influenced a number of imaginatively inclined individuals who perceived and elaborated the relationships between surviving pagan shamanic traditions and the new revelations of Tibetan esoteric practices.

By 1900 it was no longer fashionable to burn witches, and the early years of the century witnessed a virtual explosion of interest in the esoteric, with the formation of public Secret Societies dedicated to promulgating a syncretic occult viewpoint assembled from esoteric and pagan sources with a large dash of florid imagination, sometimes amplified by recourse to psychotropic substances. Eventually the subject passed from fashion, if not interest, resurfacing again in the sixties and seventies and settling down into a preoccupation with self-transformation during the eighties.

An important thread in this development has been the exteriorization of a body of extraordinary material purporting to disclose the Hermetic Tradition, the Secrets of the Ages, the Meaning of the Qabalah, the Philosopher's Stone, the Awakening of Kundalini, the True Masonic Rituals, the Mystery of Hasan al-Sabah, the Knowledge of the Rosy Cross, the Wisdom of the Sufis, and so on and so forth. Some of these materials may have actually come from private specialists and may have carried a flake of arcane and ancient truth. Whatever the source and truth content, the esoteric tide has also produced a large number of promoters, ranging from Aleister Crowley to Timothy Leary and Ram Dass and beyond.

This overall body of expression contains many themes, of which self-transformation is probably the most orthodox and conspicuous. Among the conspicuous heterodox themes is a preoccupation with the use of sexual "energy" (*kundalini*) either to transform the self or to effect the individual will. While different commentators have different ethical views of these practices, reflecting individual and cultural preconceptions, there is general agreement that, when properly controlled, this energy can be used to reprogram the unconscious reactions of one's mind or to affect the unconscious reactions of another's.

The fact that such beliefs have been so widely held and protected against ages of persecution by great secrecy does not, of course, make them true. The idea that strong sexual fantasies can affect individual behavior does not seem particularly remarkable to a generation raised on Freud and television. On the other hand, the idea that one person's single-minded fantasies can directly affect another person's perceptions and behavior is quite another matter. If we sought a word to express this idea in unsensational terms, I think we might choose the word I have already introduced to describe the hypothetical direct communication of emotional states from one mind to another, *telempathy*.

To accommodate those among my audience who are totally put off by this entire line of discussion, I will conclude this talk with a true, historical story, which is also a parable about prophecy, magick, and shamanism. I leave its interpretation as an exercise for the reader.

Ever and anon, true prophets and teachers arose to denounce and expose shamanism. Even the vanishing red man had such a prophet within the past hundred years, the Shawnee Tenskwatawa, who predicted the eclipse of the sun in 1808 [sic] *and denounced the vices of the white man. Many true teachers have appeared among the various tribes and races all through the long ages of evolutionary history. And they will ever continue to appear to challenge the shamans or priests of any age who oppose general education and attempt to thwart scientific progress.* (*988)

By 1806, Indiana Governor William Henry Harrison had become disturbed by the actions of Tenskwatawa and his followers in conducting witch hunts and burnings among the Shawnee, Wyandot, and Delaware tribes. He

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made the following speech to the Delawares concerning Tenskwatawa:

Who is this pretended prophet who dares to speak in the name of the Great Creator? Examine him. Is he more wise or virtuous that you are yourselves, that he should be selected to convey to you the orders of your God? Demand of him some proofs at least of his being the messenger of Deity. If God has employed him, he has doubtless authorized him to perform some miracles, that he may be known and received as a prophet. If he is really a prophet, ask of him to cause the sun to stand still—the moon to alter its course—or the dead to rise from their graves. If he does these things, you may then believe that he has been sent by God."[1]

...During the spring of 1806 several astronomers had visited the Ohio Valley in preparation for a total eclipse of the sun scheduled to occur on June 16. ...Somehow (through either divine or secular sources) the Prophet had learned of the eclipse....[2]

...Delaware messengers brought copies of Harrison's speech to Greenville, where the Prophet considered the governor's challenge....

...In early June Tenskwatawa assembled his followers at Greenville and astonished even his most devout disciples by declaring that he would use his power to darken the sun at midday. Instructing his audience to spread word of the upcoming miracle, the Shawnee directed them to reassemble at Greenville on June 16, when the Master of Life would send a Black Sun as mute testimony of the Prophet's authority.

...Realizing that the upcoming event would undoubtedly increase his influence, Tenskwatawa enhanced the drama by remaining in his lodge throughout the morning of June 16. Then, as the noon sun faded into an eerie twilight, the Shawnee holy man appeared among his frightened followers, shouting, "Did I not speak the truth? See, the sun is dark!" The Prophet then assured his frightened audience that just as he had darkened the sun, so he also would restore its former radiance, and as the eclipse ended, the Indians were much relieved....[3]

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1 Quoted in Edmunds, R. David, *Tecumseh and the Quest for Indian Leadership*, p. 86.
2 Quotation from *ibid.*
3 Quotation from Edmunds, R. David, *The Shawnee Prophet*, pp. 48-49.

The Life Pattern

by
John Lange, M.D.

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Introduction

The quest for self-knowledge has been a central theme of discovery in the field of medicine. Over the past two years this quest has defined itself as the Human Genome Initiative. Researchers have taken on the challenge to sequence all the genetic material contained in the 48 chromosomes collectively known as the human genome. Since the time of Vesalius in the 1500s, scientists have been charting human anatomy with ever-increasing precision and finer detail. The delineations of the human genome will be the "last frontier" of human anatomy. We shall one day know the secrets of human nature as well as we know the topography of the human skeleton today.

Today I should like to discuss the human genome project from several viewpoints. You will meet the person whose genome is being sequenced. We will go on a journey through the laboratory of a molecular biologist where a gene is being cloned. Some time will be devoted to how all this applies to "the man on the street." And then we will moralize a little about our knowledge and its effect on human destiny. Finally, we will end with some "Urantia talk" about God as the connecting pattern.

I Am Joe's Genome

Imagine yourself in the year 2005; you are browsing through the newsstand, and you pick up *Reader's Digest*. The lead article is entitled, "I Am Joe's Genome," and it reads something like this.

Let me introduce myself to you. My story begins nearly two decades ago at the end of the 1980s when scientists under the leadership of Dr. James Watson set about to sequence or spell out the genes (sentences) in all the human chromosomes (paragraphs). Taken together, all these chromosomes are known as the human genome (the story of life). So you can know me better, I need to acquaint you with some definitions. I am composed of long molecules arranged in a double helical configuration known as DNA (deoxyribonucleic acid). The two strands are composed of deoxyribose sugars, and they are linked together by four nitrogen bases adenine (A), thymidine (T), cytosine (C), and guanine (G) bridging the two strands together at regular intervals. At the bridgepoint, an A always opposes a T and a C opposes a G. An A-T together or a C-G together are known as base pairs. The four bases A-T-C-G are the code words into which proteins are translated.

I am inside the nucleus of the cell and do not leave. I send messengers out into the cytoplasm to order the production of proteins that are engaged in biologic activity. I can self-replicate and move through time from one generation to the next using each individual as a culture medium, because the messages in my tape are immortal. Nearly 100,000 genes and 3 billion bases were sequenced in this project. Printing this in sequence would have filled fifteen volumes in the old Encyclopaedia Britannica. After the first two years of work, nearly 4,600 genes had been sequenced.

I am the pattern of biologic life, and now humankind, through application and endeavor, is gaining apparent control of this pattern. It is fortunate I gave up my secrets slowly, for the experts had the time to gain ethical maturity as this power was placed in their hands.

Cloning a Gene

We now travel to Dallas, Texas, to the laboratory of Drs. Brown and Goldstein where they have recently cloned the gene responsible for familial hypercholesterolemia. This body of work took fifteen years, and for their efforts and the prospects for health worldwide, they were awarded the Nobel Prize in medicine in 1985. In essence, there is a receptor on the surface of liver cells and other cells throughout the body which serve to remove cholesterol-carrying lipoproteins from the circulation. Thus plasma cholesterol is kept at a low level. There are certain people who have a mutation in the gene that codes for the receptor. Their cells cannot make these protein receptors, and they cannot remove lipoproteins from the plasma. Their cholesterol builds up to very high levels and they subsequently get atherosclerosis and heart attacks. The fact of a mutation in that gene was something they reasoned based on abstract thinking. They subsequently cloned the gene and isolated the gene from both normal people and patients with this mutation. They have been able to show that, indeed, there is a part of the gene missing in the patients.

Cloning genes these days involves somehow fishing out the messenger-RNA which encodes for the protein. Then it is treated with purified reverse transcriptase (an enzyme having the power to convert RNA back to DNA) and a DNA copy of the RNA is made. The DNA copy is taken and introduced into bacteria. The discovery of certain enzymes recently has made

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all this possible.

To clone the LDL receptor, the first thing is to isolate tissue making LDL receptor. The adrenal turned out to be the most abundant source. Human fetal adrenals from late abortions were used for this purpose. These adrenal glands were then ground up and the RNA taken out. The tissue contains millions of different kinds of RNA, and only one in 10,000 codes for our protein. The other 9,999 are coding for all the other proteins in the cell. Then DNA copies were made of the whole RNA by adding this enzyme reverse transcriptase. What you then have are single-strand copies with a special name, c-DNA, or, complementary DNA.

Now you do what is called recombinant DNA. To clone a gene, you take advantage of the fact that bacteria have plasmids. They are autonomous pieces of genes in bacteria. (They were originally discovered by a microbiologist studying the development of antibiotic resistance.) Then, through a series of enzymatic steps known as restriction fragment polymorphism, the circular DNA in the plasmid is opened up, the gene inserted, closed or circularized again, and then reintroduced into the bacterial cell.

This process can be used not only to clone genes but to produce proteins. These special bacteria have been used to produce human growth hormone, human insulin, and tissue plasminogen activator, to mention a few. The potential in the field is limited by human imagination.

Fortunately, a bacteria takes up only one of these plasmids, so you have ten million bacteria, each taking up a different c-DNA. The challenge is to find the one that encodes for the LDL receptor. To accomplish this they worked with the microbiology department and, using the adrenal glands from cows, purified a small amount of receptor protein to homogeneity. Next they sequenced a small segment of this protein and then assembled a piece of DNA with the corresponding genetic code. This oligonucleotide probe produced in the test tube was then made very radioactive. It was placed on nitrocellulose paper which was in turn placed on a petri dish where these millions of bacteria were growing. The bacterial colonies grew up onto the filter and the small piece of DNA found its complementary plasmid containing our gene. The filter was washed carefully to eliminate unbound DNA and an X-ray was taken. A dark spot on the film represents your colony due to the radioactivity produced.

This specific colony is isolated and grown up in large quantities. The gene is cut out of the plasmid with another special restriction enzyme. The rest of the plasmid is thrown away. The gene is now sequenced and the proper reading frame determined. This is all done today by computer. Finally, having started out with only eight amino acids, they discovered the entire protein structure of over 6,000 amino acids. They also know the conformational status, how it is oriented in the cell membrane, and how it binds LDL.

Towards a Healthy World

Molecular biology and genetic research have given rise to a variety of clinical applications; i.e., things that help patients. The most debated topic in this area is gene therapy. One in 100 children is born with a serious genetic defect. Of the more than 4,000 known inherited disorders, most lack full effective therapies. Since the advances in gene cloning, scientists are imagining ways to introduce healthy genes into patients to cure the inherited illness. Genes can be transferred into germ cells (sperm, eggs, or early embryos) or somatic cells (those not destined to become sperm or eggs). Germ-line therapy is not an option for the foreseeable future, because the new genes would be passed from generation to generation, a prospect raising profound ethical concerns.

The most promising are diseases caused by single genes that have been isolated, cloned, and are available for transplant. This is accomplished by using retroviruses that have incorporated the gene, maintained their ability to infest somatic cells, but lost the power of replication. Efforts have focused on replacing the defective gene or supporting the work of the sick gene. It has been difficult to find ways to insure that therapeutic genes are expressed well and persistently in the body. Familial hypercholesterolemia, hemophilia, cystic fibrosis, and inherited emphysema are single-gene diseases under investigation at present.

This technology can also be used to delineate the origin of cancer, for the molecular targeting of drugs, and in the diagnosis of diseases. Great progress has been made with Huntington's chorea by using restriction enzymes in a process previously mentioned, known as restriction fragment polymorphism. Restriction enzymes are used to cut the DNA of affected individuals. This gives DNA fragments of many different lengths. All affected individuals will have an identical inherited fragment of the same length where the gene is located. In this manner the disease will soon be completely understood.

God as a Connecting Pattern

As humans unlock the secrets of nature, with each profound discovery we voluntarily assume a larger responsibility. With the delineation of the human genome, we are challenged to a higher identity of "created co-creator." This new knowledge subordinated to spirit direction provides the opportunity for attaining an unprecedented level of human health. A reasonable course is to foster the health resulting from random genetic recombination within the constraints of a reformulated commitment to human dignity.

The question is then posed: If the future is open, who is responsible for human transformation? Searching for an answer, we attempt to redefine the relationship between divine and human agency. Greater understanding is possible by viewing the life pattern as it encompasses the domains of finite reality. It includes not only the material (DNA), but also the mindal (archetype) and the spiritual (personality) domains. As described by Jung, the archetype per se is prepsychic in that it precedes and preforms human mind functions. It serves to focus the ministries of the adjutant and cosmic minds to develop psychologic integrity during a lifetime. Personality is that manifestation of the Father unifying the spiritual life and focusing the ministry of the Thought Adjuster culminating in morontia progression.

The life mechanism is the product of supermortal creative design, and as such mortals can never hope to totally control it. We have only partial vision and must depend on God as the pattern that connects. As we seek philosophic coordination between scientific knowledge and spiritual existence, we should first realize we live in a connected relationship of pattern between ancestral Deity and evolving Supremacy.

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Paradise and the Topology of Space: A Theory of Ultimate Matter

by
Philip G. Calabrese, Ph.D.

Calabrese, a student of The Urantia Book *for 20 years, has a masters and Ph.D. in mathematics and physics and works in related areas. Calabrese's paper entitled, "Algebraic Synthesis, Foundation of Logic and Probability," was published in* Information Sciences.

In the final analysis, **INFINITY IS,** *and that is all there is to say about it.*

First of all, does anyone here have a problem with the printed title of my talk: "The Ultimaton as the Nucleus of Paradise"? ... I hope so, because that title is reversed. It should be "Paradise as the Nucleus of the Ultimaton." That title was phoned in by my good friend Dr. Dick Prince, who also volunteered me to do this presentation with the promise to be here with me today. For ten years now, Dick has been working long hours on the Spanish translation of *The Urantia Book,* which hopefully will be done by the end of this year. Anyway, as you can see, he's not here today. So I'm going to volunteer him right now, as soon as he's finished with the Spanish translation, to begin the *Italian* translation of *The Urantia Book.*

To start off today, some of you may remember the last Scientific Symposium in Nashville when I concluded that there is no way for human resurrection to occur on Jerusem "on the third day after natural death" because the guardian seraphim, who carries the human soul, cannot travel there in less than twenty years. *The Urantia Book* insists that there is no way for a seraphim to traverse space any faster than three times the speed of light (*260). Since the nearest star is 4.3 light *years* away and Jerusem must be many stars away, the angel can't get there in days at her speed. The distance from earth to Jerusem can't be nine light days; it is more like sixty light years away.

Now at the first Scientific Symposium in Nashville I went so far as to suggest that some nameless Melchizedek might have been called on the carpet for using the expression "on the third day after natural death," which we would take literally. Well, today I am going to recant my *Urantia Book* apostasy; I've thought of a way for the guardian angel to get to Jerusem in less than three days: The angel simply doesn't travel there under her own power! She must be translated to Jerusem by some unrevealed universe or Paradise technique. A careful reading of *The Urantia Book* will reveal that in every case where this trip by the seraphim from Urantia to Jerusem is described, the author never says that the angel gets there by normal seraphic travel or transport. Instead, some vague expression like "proceeds to Jerusem" is used to denote the mode of transportation of the angel. I hope this explanation resolves the anomaly and points to an unrevealed seraphic phenomenon associated with human death. On, then, to the main part of my presentation today.

So now let us reflect on the cosmos—the Totality of Reality. Each one of us, no matter what our status in life, has been afforded a personal view of the cosmos, not only introspectively in the attempted contemplation of the indwelling spirit of the Universal Father, but also externally as we each gaze up at the stars in the night sky. This continuous view of the cosmos stretches trillions of miles in all directions, and spans millions of years into the past, and allows projections millions of years into the future. That the universe should afford each one of us a personal view of the whole cosmos, no matter how supposedly small our doings here on earth, demonstrates how God is concerned with each of us as individuals—not just in the aggregate.

In the final analysis, **INFINITY IS,** and that is all there is to say about it. ... But, of course, we're going to try to say something else about it, anyway! But before we do, let us pause in awe for a moment to experience in our personality consciousness, the infinite ONENESS that we call God, perhaps to feel the loving smile of the one that we may call Father.

Total Reality is Unqualified Infinity. Total reality embraces unbounded infinity as well as the Infinitude, and also these two unified as the whole, the Infinite One. Before attempts at understanding, the human mind must divide Reality Totality into an infinitude (as contrasted from a single unity), and an unlimited infinity (as contrasted from the bounded finite), and then somehow synthesize these two conceptions into a unified whole.

In the first absolute transaction, the Infinite One becomes the personal Father of the Eternal Mother-Son (the original spirit person) and also the eternal source of Paradise (the original nonspirit, nonpersonal manifestation). All conjoint action by the Father and the Mother-Son is consummated by the Mind-God, the Conjoint Actor, the Third Person of the Infinite Trinity. From Paradise emerges space, which, like the concept of the master universe, is a transcendental reality existing somehow *between* the infinite and the finite. The fifth absolute is the Unqualified Absolute, which pervades all space but is not limited by space. The Deity Absolute and Universal Absolute complete the seven absolutes of infinity. These seven absolutes are functionally unified in the fourteen

triunities, each a functional association of the Father with two of the other six absolutes.

It is suggested that we may helpfully conceive the total cosmos as an almost limitless ellipse with one absolute focus located in Paradise. What does *The Urantia Book* say about these matters?

On Paradise:

- A flat ellipsoid, having upper, nether, and peripheral regions
- The most gigantic organized structure in the whole Cosmos
- The dwelling place of the existential Trinity of three divine persons and (probably) the focal center of all three of the nonpersonal Absolutes (*15)
- The geographic center of infinity (*126)
- Has no time or space (except by volition) but has absolute *surfaces and areas* and absolutely significant *distances and directions*—north, south, east, west, up and down
- Universally present as the physical grasp of Paradise gravity, an instantaneous attraction (*125,482)
- Is the nucleus of *each* ultimaton (the smallest material particle)
- Located at the center of all things
- No position *in* space but located at the *focus* of space (*1156)
- Peripheral Paradise touches the relatively motionless midspace zones of space existing between the moving zones of space (*124).

On the Unqualified Absolute:

- Pervades all space but is not limited to space presence
- Gives rise to primordial force, emergent energy, and all finite matter
- Reveals all that originates in Paradise (*126)
- The central focalization of its space presence is in the outer zone of nether Paradise (*123).

On Space:

- Needs seven dimensions, one for each absolute of infinity (*1439)
- Is eternal but not absolute; is absolutely ultimate (*1297)
- A transcendental reality before all beginnings and after all endings; not the "final" frontier, but the "ultimate" frontier
- Partially transcended in human experience only by mind (*1439)
- Pervaded by the Unqualified Absolute (*124)
- The totality of space has a definite geometrical shape (*124)
- Seemingly originates just below nether Paradise while time originates just above upper Paradise
- All matter contains space and moves in space, but not all space is inside matter (*1297)
- The midspace zones encapsulate all of pervaded space and the space reservoirs and the potential infinity of all outer space.

On Ultimate Matter and Motion:

- Ultimatons are minute spheres—particles, not waves (*475)
- 100 ultimatons make up a typical electron but do not whirl around within the electron like electrons whirl around the atomic nucleus nor as planets whirl around the sun (*476)
- Ultimatons have axial rotations around their Paradise nucleus
- Ultimatons may "huddle" together within the electron (*478)
- When a particle moves in space it takes its interior space with it (*1297)
- Ultimatons and electrons shift positions and emit mass according to $\Delta m = \Delta E/c^2$. (*474)
- There is a plane perpendicular to any given mass (*126)
- Sunlight is composed of highly heated and agitated electrons (*460-61)
- The wave length associated with the emission of a particle is 860 times the diameter of the emitting particle (*474, 476).

Now a number of questions arise:

- How can Paradise be the nucleus of each ultimaton without being in space?
- How can Paradise have a universe location (at the focus of the midspace zones) but have no position in space?
- How can Paradise be the geographic center of infinity?
- How can Havona and the superuniverses (in space) whirl around Paradise?
- What is an ultimaton made of?
- What does an ultimaton look like? what is its geometric shape?
- How are the 100 ultimatons arranged in an electron?
- What does it mean for ultimatons to "huddle"?
- How can ultimatons and electrons shift positions and emit mass?
- How does the positive or negative charge

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The nuclear region of each ultimaton must be located in nether Paradise, where there is the "central focalization of the space presence of the Unqualified Absolute."

of an electron arise and why don't light particles have charge?

- How do the wave properties of matter arise?
- How can an electron emit an electron (a light particle) when it drops to a lower energy state?
- How does an electron absorb a particle of light (an electron) and shift position?

[By the way, the last two provocative questions and the above observation about sunlight were contributed by Dick Bain in a personal letter.]

Here's how far I've gotten on these problems.

Topology is that branch of mathematics that deals with those aspects of geometry that are invariant under stretching or contracting. For instance, a doughnut and a cup with a handle are topologically equivalent because one can be transformed into the other by a continuous mapping. But a sphere and a doughnut are not so equivalent. Topology also attempts to model the "closeness" concept. Formally, a topological space (a topology) consists of a universe U of points together with a special collection of subsets of U called *open sets*. The collection of open sets has the property that the intersection of any two open sets is also an open set, and the union of *any* subcollection of open sets, whatever, is also an open set. A *neighborhood* of a point is any subset of the universe that includes an open set that contains the given point. For example, the universe of points in the euclidean plane together with the collection of the interiors of all circles (and their unions) form a topological space. Another interesting example of a topology is called the co-finite topology.

Suppose we start out with a euclidean plane of points and adjoin to it certain points at infinity. We can imagine each straight line extending out to infinity in both directions ending in two points at infinity. A line parallel to the first line ends in two different points at infinity; and a line intersecting the first two lines ends in still another pair of points at infinity. The set P of all points at infinity for all the lines in the plane can be considered to be a "circle" at infinity. In euclidean solid geometry we would get a "surface" P of points at infinity. A topological neighborhood of infinity (i.e., a neighborhood of the surface of infinite points) is any subset of the universe whose complement is bounded, i.e., contained, in some finite circle. Thus a neighborhood of infinity is any subset of the universe that includes everything outside some finite circle.

Since Paradise is the geographic center of infinity, Paradise must be a neighborhood of infinity. It somehow must contain infinity. After all, the zone of infinity does exist at the center of nether Paradise. The co-finite topology, applied to solid euclidean space rather than the plane, seems just right for modeling a cosmos whose origin is at infinity instead of at some finite point in space. Paradise must be the center of what we commonly imagine as what's "out there" in the infinite reaches of outer space, and even beyond, out to the very edge of our mental concept of the master universe.

Now Paradise is not only "out there"; Paradise is also at the focus of space, the focus of those midspace quiescent zones of space intervening between the relatively moving zones, as for example, in the atom, electron, and ultimaton. Thus somehow Paradise is also located at the center of each ultimaton. Finally, Paradise is also located at the center of the grand universe, at the center of the superuniverses as they whirl around. How can all this be? The answer is that the topology of space must allow Paradise proximity in all these ways at once. Note, for instance, that peripheral Paradise can be approached by a sequence of midspace points.

Space must have a non-spatial hole at the center of each ultimaton where nether Paradise acts to hold the ultimaton together as an individual particle. The nuclear region of each ultimaton must be located in nether Paradise, where there is the "central focalization of the space presence of the Unqualified Absolute." That must be why space seems to originate just below nether Paradise. In addition, the macroscopic grand universe must have a unique space intrusion where, again, Paradise is located. Space topology must allow this proximity of Paradise to the central universe, which exists in space, while Paradise itself is not in space. The construction of ultimatons is the work of the Paradise primary and secondary Transcendental Force Organizers, and the design of the master universe is the work of the Transcendental Architects of the Master Universe.

All this leads me to discard our contemporary notion of space as a uniform void. Space is neither uniform nor empty. Uniformity of space is not really necessary for our physical theories. All we need is the revolutionary motions of matter in space about a center. But the center itself need not be conceived as being in space. Space must be very "holey," spelled with an "e." It must have a big hole in the macroscopic center of the grand universe, little holes at the center of each ultimaton, and finally an

inconceivable hole at the outer infinity center of the master universe. Matter has a spirit nucleus!

Now, what is an ultimaton made of, and what does it look like? An ultimaton must be a relatively thin, rotating, spherical shell of space with a non-spatial nucleus. The Paradise nucleus binds the shell together preventing it from flying apart on tangents toward outer infinity. An electron must consist of one hundred concentrically arranged ultimatons with a common non-spatial nucleus.

These concentric spherical shells of space may rotate with different speeds and axes of rotation, thus giving rise to angular momenta with as many as 100 different axes. The result is an angular momentum vector with components in all three conventional spatial dimensions, just as appears in contemporary quantum mechanics (although contemporary science hardly gives physical interpretation to this momentum vector). Huddling of ultimatons means that the rotating shells of space cluster by shrinking or expanding toward one another.

An ultimaton may drop into a lower rotational energy state by emitting some rotating space (mass) in the form of another ultimaton. In this case the change in the mass of rotating space of the ultimaton equals the change in its energy divided by the square of the speed of light. On the other hand, capture of one rotating particle (ultimaton) of moving space by another ultimaton would increase its energy and its rotational radius or speed and so its mass. Similar transactions can be envisioned when 100 ultimatons are concentrically arranged in an electron. When a particle is formed and emitted by another particle, vibrations are initiated in the pre-ultimatonic content of space, and these secondary waves are apparently interpreted by contemporary quantum physicists as the particle itself. Hence we have the confusing contemporary notion of a "wavicle"—a hypothetical hybrid particle-wave duality. However, according to *The Urantia Book*, these waves have a wave length 860 times the diameter of the emitting particle.

The generation of so-called positive and negative electronic charge might also be explained in terms of the spin of the 100 intraelectronic ultimatons. For instance, if most or all of the 100 ultimatonic shells are rotating in the same direction, then two such electrons might repulse one another. On the other hand, two electrons (one a positron) with opposite revolutionary directions might attract each other and cancel some of each other's rotational mass, emitting some energy in the process. The construction of electrons, protons and atoms from the ultimatons is the work of the power centers (*473).

Although these explanations are still qualitative, it does seem to me that most of the strange phenomena of present-day quantum mechanics are potentially explainable in terms of this model of sub-electron matter as rotating spherical shells of space. I am just now working out some of the quantitative implications of this theory, and the preliminary results are very encouraging, but time doesn't permit me to get very far into that here today. In the near future, I plan to submit a more technical paper for publication that will deal with these quantitative aspects of the theory. This paper will redefine mass as rotating space and will consider the conservation of the kinetic and potential energy and angular momentum of an ultimaton; it will attempt to deal with energy mass transformations and wave generation.

One last comment: Albert Einstein's theory of relativity predicted (and it has many times been experimentally verified) that the mass of a particle increases without limit as the speed of that particle approaches the speed of light. This has always seemed to be a very mysterious phenomenon. But this theory of ultimatons and electrons at least offers an appealing way to conceive of the situation without abandoning common sense—by imagining that as the speed of the particle increases, more and more of the energy applied to the particle is transformed into rotational energy (mass) rather than into straightforward motion. Thus the mass of the particle increases more than its speed as its speed approaches the speed of light.

That completes my prepared remarks for today. I will now try to answer some questions....

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These concentric spherical shells of space may rotate with different speeds and axes of rotation, thus giving rise to angular momenta with as many as 100 different axes.

Manned Flight: From Fandors to FANDORS

(Flapping Aerial Navigation Designed Ornithological Replicas)

by
Paul W. Herrick, P.E.

A student of The Urantia Book *for 28 years, Herrick holds engineering degrees. He works in Jupiter, Florida as an aeronautical engineer and has authored numerous technical papers.*

Abstract

The first human aviators flew on enormous birds (fandors) trained by Bon some 500,000 years ago. Man continued aerial navigation aboard birds until some 30,000 years ago when fandors became extinct. Several mythological and archaeological sources include references to very large and/or man-carrying birds. The first part of this paper will summarize these *Urantia Book* and historical references and, through modern aeronautical engineering and ornithological knowledge, attempt to depict and describe what a fandor must have been like.

The remainder of the paper will document man's technological progress in developing machines to replace the fandor. His first abortive attempts were wing-flapping ornithopters, but these were abandoned in favor of simpler, though less versatile, concepts. The paper will conclude by illustrating the recent aeronautical technological discoveries which birds have been taking advantage of for millions of years. A "replica" of the fandor will be shown to be the logical end product of this technological evolution.

Introduction

The Urantia Book mentions man-carrying and/or transport birds on six different pages. Page 521, in discussing our system capital, Jerusem, states, "The transport birds fly at about one hundred miles per hour." Page 590 indicates that many inhabited planets enjoy the services of "enormous" passenger birds capable of carrying "one or two average sized men for a non-stop flight of over five hundred miles." Page 694 describes an ostrichlike ancestor of the "gigantic" passenger birds. This bird lived on Urantia forty-five million years ago.

The first mention of "fandors" is on page 746 where Bon (one of the planetary prince's corporeal staff) was successful in training them for manned flight some half million years ago. This reference also states that "they became extinct more than thirty thousand years ago." Lastly, the references to Adam and Eve flying on fandors occur on pages 831 and 832. This was about 37,000 years ago.

Historical Perspective

It is not the intent of this paper to debate the possibility of man-carrying birds. Their existence in our distant past will be assumed. As their extinction predated recorded history, only three areas of human endeavor are available to shed some non-revelatory light on the subject. These are paleontology (the study of fossils), archaeology (the study of man's ancient artifacts), and mythology (a collection of stories about the origin and history of man).

As we observe the physical world, it is obvious that there are no existing birds that even approach the size required to carry humans in flight. The andean condor, with its ten-foot wing span, is typical of the largest living birds. Until the 1970s the largest flying animal that ever existed was thought to be the pteranadon (a pterosaur with a 24-foot wing span), and the largest flying bird ever was thought to be a 12-foot span teratorn. Many scientists thought that these were the upper limits of possibility for flying animals.

In addition to the ostrich, at least two other very large flightless birds were known to have existed. They are the moa of New Zealand (12 feet tall, 660 pounds) and the elephant bird of Madagascar (10 feet tall, 1,460 pounds).

In the 1970s two paleontological discoveries dramatically increased the upper limits of known flying animal size. The bones of a 36-foot wing span pterosaur (Quetzalcoatlus Northropi) were discovered in Texas, and, more relevant to fandors, the bones of a 25-foot span flying bird (Argentavis Magnificens) were unearthed in Argentina. Although both of these animals probably were extinct by the time man appeared, and neither was likely capable of carrying a man anyway, the fact remains that scientists had severely underestimated the upper limits of size of a flying animal

Archaeologists have recovered several man-made artifacts which depict very large and/or man-carrying birds. A hammered copper depiction of a lion-headed bird was found at the temple at Al-Ubaid (near Ur) from the early second millennium B.C. The bird dwarfs the two stags it is depicted with. At least two bird-related Akkadian seal impressions from about 2300 B.C. were found. One purportedly shows

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a large "Zu" bird from Mesopotamian mythology, while the other clearly depicts a human form riding on the back of a bird in flight. The famous huge drawings on the Plain of Nazca in South America may also be related to man/bird flight rather than "ancient astronauts," a la Von Daniken.

Mythology from all over the world shares stories of man-carrying birds. Garuda, the king of birds from Indian mythology, is often portrayed carrying two Indian god-man deities. A wood carving of a human figure riding a peacock was found in southern India. According to Maori legend, the god, Pourangahua, flew from his legendary dwelling Hawaike to New Zealand seated on a magic bird.

Fandor Description

The "specifications" for a fandor, as given by *The Urantia Book*, are:

- Type: bird (i.e., not pterosaur, bat, or insect)
- Range: 500 miles
- Speed: 100 mph
- Payload: one or two average-sized men (or one eight-foot Material Son)
- Size: "large," "great," "enormous," "gigantic"
- Other characteristics: "intelligent," "obedient," "affectionate"

To convert the qualitative size descriptors to quantitative values such as weight, wing area, wing span, etc., we are forced to use judgment based on known relationships of these parameters for existing, though much smaller, birds. For example, birds of prey, such as ospreys, are known to be able to carry prey weighing up to one-half their own weight. Since the fandor can fly a long distance with men aboard (500 miles), a payload of one-third their weight will be assumed to be more realistic. Using two "average-sized" men or one eight-foot pro-basketball player as a typical payload, 300 pounds seems like a reasonable payload weight. As 300 is a third of 900, our hypothetical fandor will be assumed to weigh 900 pounds (1,200 with the full payload aboard).

Wing loading (weight divided by wing area) for birds varies with take-off requirements. Birds that normally take off vertically from level ground have low wing loadings (relatively large wings), birds that normally run along the ground (or water) to take off have higher wing loadings, while birds that normally jump off limbs or cliffs to take off have the highest wing loadings. For the sake of this discussion (and because "fandor" may be related to "condor"), the fandor will be assumed to be at the high end of the range of wing loadings for large land birds (like condors and vultures), which normally take off vertically from level ground. This gives a wing loading of about 1.78 pounds per square foot (8.7 kilograms per square meter). This translates to a wing area of 505 square feet for a 900-pound bird.

Aspect ratio for a wing is defined as span squared, divided by area. Large land birds have aspect ratios ranging from about 6 to about 11 (the albatross, a sea bird, has an aspect ratio of 17). The corresponding wing spans (distance from one wingtip to the other) for a 505-square-foot wing are 55 feet (aspect ratio equals 6) to 75 feet (aspect ratio equals 11). Wings of this size would require nearly 6 seconds to complete one flapping cycle. A sketch of what a fandor may have looked like is shown in the figure. (*As an aside, the author hereby suggests the scientific name "Ornithopteryx Fandori" for this bird in the event that paleontological evidence of its existence is someday found.*)

The power required for a bird to take off and fly is generated by its large pectoral (flight) muscle. Typically, this muscle makes up about a quarter of the weight of a bird. A 900-pound bird would therefore have a 225-pound flight muscle. At a typical value of 0.156 horsepower per pound of flight muscle, the fandor could generate 35 hp for short periods of time. As early light planes in the same weight, speed, payload, and range category used engines in the 85- to 90-hp class, we can see that our fandor must have some special technologies to allow it to get by on less than half that amount of power. The fact that light, two-place helicopters (which can also take off and land vertically) require about 180 hp makes a bird's capability even more remarkable. This will be addressed in the section entitled "Bird Technology."

Mythology from all over the world shares stories of man-carrying birds.

Wings of this size would require nearly 6 seconds to complete one flapping cycle.

Aircraft Development

The first sketches of heaver-than-air flying machines were of man-powered ornithopters (wing-flapping airplanes) by Leonardo da Vinci in the late 1400s. However, the first successful flying machine had to await the development of the controllable, fixed-wing glider, the gasoline engine, and the airscrew (air propeller). The flapping-wing concept had to give way to the simpler, more understandable, and more predictable flight schemes of a fixed wing for lift and control and a rotating propeller for propulsion. The integration of lift, propulsion, stability, and control into a flapping-wing aircraft was, and still may be, too complex for practical manned flight.

Bird Technology

"My observations of the flight of buzzards leads me to believe that they regain their lateral balance, when partly overturned by a gust of wind, by a torsion of the tips of the wings...." So said Wilbur Wright in a letter to Octave Chanute on 13 May 1900. This idea of twisting a wing around its spanwise axis to provide lateral control was probably the singlemost significant technology contribution to the Wright brothers' success where so many others had failed. Numerous other aeronautical secrets have since been discovered through the study of birds, and with almost 9,000 species, there is surely much more to be learned.

This idea of twisting a wing around its spanwise axis to provide lateral control was probably the singlemost significant technology contribution to the Wright brothers' success where so many others had failed.

Some of the early lessons learned include: dihedral for stability, camber for lift, ailerons for roll control, and slots and flaps for higher lift. Hollow bones with internal trusses is the same concept used to allow monoplane, instead of biplane, design. Birds also originated the retractable landing gear. These two innovations were the major causes of a fourfold reduction in aircraft drag. Variable wing sweep angle is a concept that birds use which allows the aerodynamic efficiency (lift/drag) to be optimized over a range of flight speeds. This is used on several modern fighter planes. Variable camber is used by birds to optimize efficiency over a range of life requirements. NASA just recently flight-tested this idea (called a Mission Adaptive Wing) with excellent results.

The fact that birds use inflight thrust vectoring and reversing (of their wing-flapping generated thrust) during evasive maneuvers was recently determined by the author during the course of a bird air combat agility flight research program. Advanced fighter designs are just now beginning to incorporate thrust vectoring and reversing for air combat agility.

Free flight efficiency measurements of a black vulture indicate that the bird does indeed keep the airflow over its body and wings laminar. The mechanisms for doing this are just now being understood.

The tips of bird wings are either pointed and swept back (sheared) or composed of several pinion feathers curved upward and separated. Until very recently the ideal wing-tip shape for low-speed (subsonic) airplanes was thought to be rounded. Again, recent tests done by NASA have shown significant drag reductions by both of the concepts that are used by birds. Also, airplane wings have always used smooth, trailing edges, while many birds have trailing edges that are both rippled and serrated. Yet again, NASA has just recently demonstrated the drag reductions possible by both rippling and serrating the trailing edges of airplane wings.

Friction drag on both airplane and bird wings and bodies is a major component of the total drag of both flyers. If the airflow over these surfaces can be kept laminar instead of turbulent, the drag can be reduced significantly. NASA has shown that forcing the airflow to remain laminar could result in large reductions in aircraft fuel requirements. Free flight efficiency measurements of a black vulture indicate that the bird does indeed keep the airflow over its body and wings laminar. The mechanisms for doing this are just now being understood.

There appear to be at least six different phenomena at work (over and above those already mentioned) to help a bird reduce its wing and body friction and form drag. The beak of a bird (and the bill of a swordfish) provides a low surface area for the extremely high initial friction shear stress to act upon. Wind tunnel tests have shown that a body with a pointed protrusion can experience a 5- to 10-percent reduction in drag. The covert feathers of a bird (and the scales of a fish) can both reduce the friction drag and prevent flow separation (to reduce pressure drag) to yield an overall drag reduction of about 30 percent. The riblets formed by the individual barbs of the feathers (and the ridges in a shark's skin) can reduce friction drag by 5 to 10 percent. The compliant surface created by a bird's down (and a porpoise's skin) can also dampen turbulence and, thereby, reduce drag. The coverts and down also form a "turbulent streak cancellation surface" to further reduce drag. Lastly, the body temperature of a bird runs as high as 113 degrees F. Recent tests have shown that when the temperature of a body is higher than the air, the friction drag is reduced. This can amount to more than a 10-percent drag reduction for a high-flying (where the air is colder) bird like a goose.

The full benefits of wing flapping relative to drag reduction and increased propulsive efficiency are just now being explored. Birds with high aspect ratio wings (like sea birds) "cruise" by only flapping the outer portion of their wings. NASA has recently run tests which show that propellers mounted on wingtips can reduce wing drag during cruise by 10 to 20 percent. In addition, some engineers think that the flapping motion itself has a favorable effect on both friction and pressure drag. Obviously, we have much more to learn from nature's flying machines.

Concluding Remarks

Mankind would really benefit from having a "fandor in every garage [hangar; barn]." It would be somewhat like having a horse, only infinitely better. (Interestingly, horses also weigh about 900 pounds.) It would not only fly

but fly fast (100 mph) for long distances nonstop (500 miles) carrying one to two people. It wouldn't require petroleum products, runways, mechanics, or air traffic control. Inflight fires and structural failures would be nonexistent, while midair collisions would be rare and often survivable (bird's bones and feathers are so flexible that birds sometimes collide in flight without even losing control). "Engine" failure would be both rare and—except in the case of a fandor heart attack—with sufficient warning to be able to land. The rider wouldn't have to be a licensed pilot. He would just have to indicate to these intelligent, obedient, affectionate birds when he wants to take off, where he wants to go, and where he wants to land. The bird would do the rest. He could even have the bird come to get him (a la page 832 in *The Urantia Book*).

All of this is pleasant to dream about, but since fandors have been extinct for over 30,000 years, that's all it is—a dream. OR IS IT? There are two remote possibilities for fandors again to appear on earth in the distant future. *The UB* tells us that they exist on many inhabited planets —maybe they could be brought here. Slightly more feasible: maybe we could genetically engineer one and reverse the extinction process.

In all likelihood we'll have to settle for a FANDOR (Flapping Aerial Navigation Designed Ornithological Replica)—a man-made, highly sophisticated ornithopter. But even this will be no small feat. Tremendous breakthroughs will be required in the areas of wing-flapping propulsion, unsteady aerodynamics, laminar flow control, active flight structures, totally integrated flight/propulsion control, artificial intelligence, non-intrusive instrumentation, near-infinitely variable geometry, exotic materials, and cost-effective manufacturing techniques.

FANDOR or fandor...either way it is the author's belief that one of these two options will eventually serve the personal transportation needs of man.

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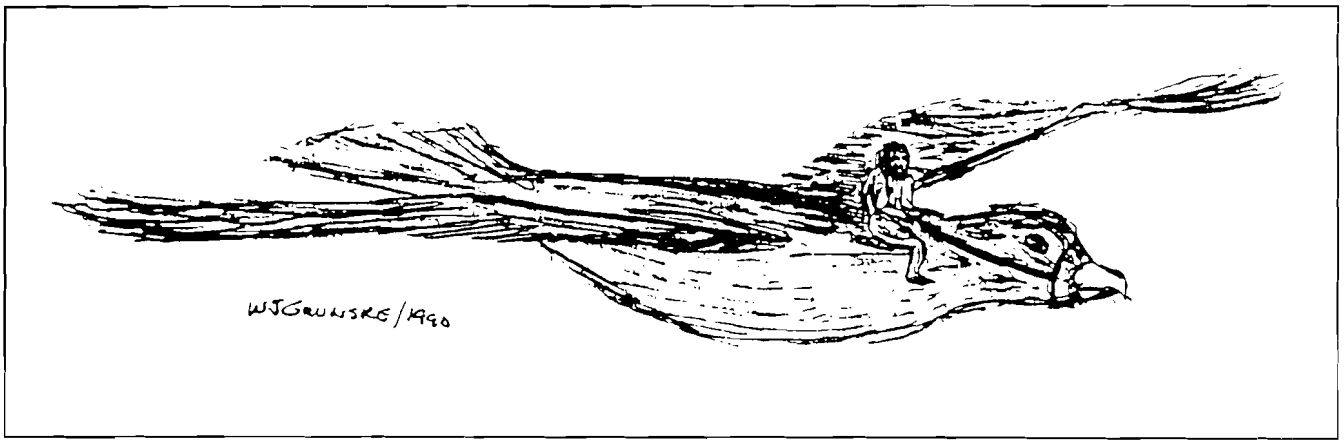

Scientific Predictions of *The Urantia Book*

coauthored by
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Ginsburgh has B.S. and Ph.D. degrees in physics and mathematics. He was an engineering physicist for a major oil company and is now semiretired, consulting on explosions and new technology. He has 50 U.S. patents, has received five R&D 100 awards, and has authored a book published by Simon & Schuster which reconciles science's version of creation and the Bible's version.

Taylor has a background in aeronautical engineering and 20 years experience in the turbine engine industry. He has 7 patents, is a co-winner of the Design News *1988 Design of the Year Award and has received one R&D 100 award for an outstanding technical development. He currently operates a consulting engineering company in Winnipeg, Canada, where he is working with the National Research Council to develop a remote, precision measuring system.*

The Urantia Book contains much scientific information that was revealed between 1925 and 1935 to an individual who cared little about the material. Some of this information disagreed with science's version. Half a century later, some of this originally conflicting information now agrees with science, and some still does not. The information deals primarily with creation of the universe, the Earth and man, as well as the fundamentals of matter and energy. Theories about these kinds of subjects evolve as science matures, and some of science's ideas change. These changes have brought about the new agreement between science and *The Urantia Book*, and the now agreeing Urantia information can be considered to have been predictions.

The authors consider about thirty predictions that are in their areas of expertise or interest, but there are many others in the book. Science does not now know some of the information in the book. There is a distinct possibility that some of this Urantia information may also turn out to be scientific predictions in the future. If more of these predictions ultimately agree with science, it will give the scientific part of *The Urantia Book* an authenticity that will enhance the believability of the rest of the book. The authors examine about thirty scientific predictions in *The Urantia Book*, compare them with science's versions, see how much agreement we can find, and how much more we can anticipate. Those predictions that now agree with science and that partly agree constitute about one-third of all the predictions considered. This can be considered remarkable. Most predictions have yet to agree, but this is to be expected of a book with a very long life. More prediction analysis is warranted in the future, as is more detailed study of individual predictions.

Introduction

After studying *The Urantia Book*, one comes to grips with a personal question: Is the book completely correct or only partially so? Of course, one could take it all on faith and believe it completely. To help make this choice, we will examine the book's scientific information. The scientific information in the book that we will consider was either unknown to science in 1935 or differed from information generally accepted by science in 1935. Some of this information now agrees with science and can be considered predictions of what science would discover after 1935. We will examine some of these predictions and see how many now agree with science. If enough of them do, they can enhance the believability of the rest of *The Urantia Book*. However, we must remember that, presently, science only deals with the physical world, while the book deals with physical, spiritual and other matters.

Much of the scientific information in the book agreed with science, but some differed. Where they differed, the subjects cover matters such as creation of the universe, creation of our world, creation of life, fundamentals of energy, etc. Many of these subjects cannot be tested in a laboratory. Science's theories about such matters are designed to fit the available evidence. Historically, some theories change with time as science matures and new data become available. Those 1935 disagreements which now agree with science provide a unique way of testing the validity of the scientific part of *The Urantia Book*. The remaining disagreements may agree in the future, and these could provide additional confirmation of the scientific part of the book.

Limitations of Disclosure

The Urantia Book warns of the limitation of the English language (*469) for transmitting some ideas, and these ideas may not get through clearly or correctly. This is a problem with all telepathically received books which discuss matters that are unknown to the receiver. The understanding of the receiver can be a limitation. In addition, there are a number of presenters, and some may be more skillful at revelation than others—especially in dealing with information that is unknown to the receiver. Furthermore, much of the material was originally recorded by stenography, and translation from stenographic notes is not always perfect, especially if the stenographer is unfamiliar with the material. (The first edition of *Mind at Mischief* by Dr. William S. Sadler, Funk & Wagnalls 1929, has a note about the use of stenography in the transmission of the Urantia Papers.)

In dealing with future events, the names that will be used in the future are not known, and this may hinder identification. For example, the book discusses "continental drift" on the

Earth's surface, while science talks of "plate tectonics"; but there is no problem with identification in this case.

The book clearly states there is a time limitation on the information that can be presented, and information can only be provided if we will soon discover it ourselves. This is an understandable restriction on revelation, because there are many cases on Earth where an advanced culture introduced advanced technology to a less developed culture, and this usually harmed or destroyed the less developed culture.

Analysis of Predictions

With revelation, a fully developed theory is presented to a human receiver. If science finds a need for a new theory or improvements to an existing theory, the new theory starts out as an idea in someone's mind. The idea is changed, expanded, modified, etc., until it appears to fill the necessary data requirements. When the theory is completed, it is publicly announced to other scientists in the field, and the publication date is usually considered as the discovery date. Then it has to pass the acid test of experimental verification and reverification by other scientists. Other workers in the field compare the old and the new theories and informally decide which best explains the phenomenon. There may be several years between conception and verification. During this time period, the idea may be discussed with other experts in the field, and the new information is known to this small group of experts. We will use the announcement date as the discovery date, even though the concept was known to a small group before this. Members of this group might have been an inadvertent source of information for the presenters. We will also present major criticism of some predictions, since it exists in the real world and makes a more balanced presentation. Science allows for improvements in its theories, and these changes have given rise to the scientific predictions in *The Urantia Book*.

Much of our material is science that has been developed after 1935. There are two major categories for the predictions—those that disagreed with science in 1935, and those that were unknown to science in 1935—and one minor one. There are several classes in each major category. Much of the material in the first category involves science that has been developed within the authors' lifetimes. The categories and the classes are:

I Predictions that disagreed with science in 1935
  - A Predictions that now agree with science
  - B Predictions that partially agree with science
  - C Predictions that still disagree with science

II Predictions unknown to science in 1935
  - D Predictions that are actively being researched
  - E Predictions that can be tested by science today
  - F Predictions still unknown to science

III Predictions that seriously disagree with science
  - G Predictions with very strong disagreement with science.

* * *

The A, B, and C categories cover a wide range of subjects. The seven predictions of category A can be considered remarkable. These predictions clearly disagreed with science in 1935. Since then, science has improved its theories and created the agreement. Critics will say that some developments were underway in 1935, and a few experts in each field were aware of some of the development work in 1935. But the information was not generally known at that time, and there was no assurance that the work would succeed. However, this information matches the book's limitation on revealing information that we will develop shortly. The two predictions of category B partially agree now, and agreement could improve with time. Category D is even more remarkable, since these items were unknown to science in 1935.

Category C, with five predictions, disagrees with science, but that does not mean the predictions are wrong. They just disagree with science's ideas on the subject. But the nature of the information is such that science's theories could change in the future. The history of a subject in science is often a series of theories that improve with time.

Categories D, E, and F are mostly unknown to science even today and could be the most intriguing, since future scientific discoveries could verify some of these far-out predictions. In fact, four of these predictions are being researched today (category D), because science now needs this kind of information. Five more predictions can be tested with modern technology (category E). Eight predictions are still unknown to science (category F). This type of information is important for a book with a very long life. Verification of some of these predictions in the future could make it easier to believe other parts of *The Urantia Book*.

The thirty-odd predictions to be briefly discussed can be categorized as follows:

Science allows for improvements in its theories, and these changes have given rise to the scientific predictions in The Urantia Book.

The seven predictions of category A can be considered remarkable. These predictions clearly disagreed with science in 1935. Since then, science has improved its theories and created the agreement.

There is much material in The Urantia Book which agrees with science. These cannot be used for predictions.

The Urantia Book claims that healing chemicals for wounds will be discovered... and this is a prediction that has partially come true.

AA Information known to science and *The Urantia Book:* Speed of light.

I Predictions that disagreed with Science in 1935:

A. Predictions that now agree with science:
1. Healing chemicals for wounds.
2. Plate tectonics or continental drift.
3. Source of the sun's energy.
4. Temperature at center of sun (35 million degrees F.).
5. Chemical element with atomic number 101.
6. Discovery of neutrino particle.
7. Mass of the meson particle.

B. Predictions that partially agree with science:
1. Creation of the sun.
2. Creation of the Earth and the moon.

C. Predictions that still disagree with science:
1. Continuous creation of matter and energy.
2. Creation of our solar system.
3. Life implanted on Earth 550 million years ago.
4. End of Cretaceous age.
5. Breakup of fifth planet from the sun (asteroids).

II Predictions unknown to science in 1935:

D. Predictions actively being researched:
1. Dark matter in the universe.
2. Organization of matter in a superuniverse.
3. Arrangement of seven superuniverses in the grand universe.
4. Use of DNA for human evolution.

E. Predictions that can be tested today:
1. Reduced gravity effect on calcium ion.
2. No gravity effect on free neutron particles.
3. Origin of sunspot cycle.
4. Twelve planets in our solar system.
5. Two unknown types of energy.

F. Predictions unknown at present:
1. Cause of wave action of light.
2. Speed greater than speed of light.
3. Two kinds of gravity.
4. Anti-gravity.
5. Major energy of space.
6. Ultimaton particle.
7. Neanderthal to Cro-magnon transition.
8. Life span of a star.

III Predictions that seriously disagree with science:

G. Predictions with very strong disagreement with Science:
1. Periodicity of similar chemical elements—seven elements spacing.
2. Surface temperature of the sun.

Brief Discussion of Individual Predictions

***AA—Information known to science and* The Urantia Book**

There is much material in *The Urantia Book* which agrees with science. These cannot be used for predictions. However, it is useful to discuss one of these subjects. The book says that the speed of light is 186,280 miles per second (*260). This figure has six known numbers in it. The speed of light measured by science in 1931 was 186,270 miles per second—10 miles per second difference. By 1949, the value increased to 186,282 miles per second, and it has remained close to this ever since—2 miles per second difference. This shows the degree of accuracy of some of the information in the book, about one part in 100,000. However, there are other places where the information is vague or incomplete.

Category I—Predictions that disagreed with science in 1935

*I.A.1.—Healing Chemicals for Wounds (Medicine, *735)*

[Parentheses show the field of science and *The Urantia Book* page number. Scientific information is available in any good modern encyclopedia.]

The Urantia Book claims that healing chemicals for wounds will be discovered. In 1928, penicillin was discovered, but serious work did not start until ten years later. Sulfa drugs were discovered in 1935 but came into use five years later. Both of these chemicals fight infection and speed up the healing process. Both discoveries were essentially unknown in 1935, and this is a prediction that has partially come true. The book also speaks of healing chemicals that involve the cells themselves, and the book hints at other discoveries of this type which will be made in the future.

*I.A.2.—Plate Tectonics or Continental Drift (Geology, *663,668)*

The book says that the continents drift slowly over the surface of the Earth, and the drift started about 700 million years ago. This was proposed in the early years of the twentieth century and had not been proved by 1935. However, a look at the east coast of South

America and the west coast of Africa readily shows the ancient fit. But science requires proof, and proof came in 1969 by matching subsurface earth layers on the two continents and finding an ocean floor crack between the continents. However, the start of the drift was recently computed by science as starting 200 million years ago, based on the oldest ocean bottom rocks in the Atlantic Ocean. Another prediction essentially came true even if science calls this plate tectonics.

*I.A.3.—Source of the Sun's Energy (Physics, Astrophysics, *464)*

The book says the sun generates energy by combining four hydrogen atoms to form one helium atom, using carbon as a catalyst. This is a mass-to-energy conversion. Science worked out this technology in 1939. This prediction also came true.

*I.A.4.—Temperature at the Center of the Sun (Physics, Astrophysics, *463)*

The book claims that the temperature at the center of the sun is 35 million degrees F. In the mid '30s, science only guessed at a temperature of millions of degrees. An estimate of 29 million degrees was made in the late '30s. This is good agreement.

*I.A.5.—Chemical Element with Atomic Number 101 (Nuclear Physics, *478)*

The book says that the very heavy element, number 101 (the number relates to the structure and electric charge of the atomic nucleus) would be so unstable that it would disintegrate radioactively almost instantaneously. In 1935, the heaviest naturally occurring element known was Uranium, number 92, and it disintegrated slowly. Experiments to make heavier elements were done in the late '30s, but with little success—certainly not up to number 101. This was finally done years later, was labeled Mendelevium, and it turned out to be stable for about an hour. This is not a bad fit for the prediction, but critics will say that a competent scientist could have made a good guess.

*I.A.6.—Discovery of the Neutrino Particle (Nuclear Physics, *464,479)*

The book mentions a small, unnamed, chargeless particle which could be the particle that science calls the neutrino. The particle was theoretically predicted in 1931 and was labeled the neutrino; but because it was so difficult to detect, it was not found until 1938. Here again critics might argue about an educated guess, but the prediction did come true.

*I.A.7.—Mass of the Meson Particle (Nuclear Physics, *479)*

The book uses the term "mesotron" instead of the presently used word "meson." The mesotron term was used in the 1930s when the early theoretical work was done on this particle. The presenters were familiar with the mesotron work. The book claims the mesotron has a mass that is 180 times the mass of the electron. Science has found that the mass is 207 times the electron mass. This is a small discrepancy. However, the presenter was aware of the term mesotron, and this shows knowledge of human thought. This prediction does agree with science, but it was made at a time coincident with the discovery.

Score: Seven predictions agree with science.

*I.B.1.—Creation of the Sun (Cosmology, Stellar Physics, *651)*

Science says that the sun was created when an enormous cloud of gas contracted by gravity and heated itself by gas compression until it was hot enough to become a solar furnace. The book says the same thing except that there were about one million other suns that were also created from the same enormous Andronover Nebula. Their creation took about two billion years, and they were ejected from the nebula after formation. Science does not know about the other million suns or the nebula or the ejection from the nebula, but there is good overlap in this case.

*I.B.2.—Creation of the Earth and Moon (Cosmology, Astronomy, *659)*

Science says that the Earth condensed when the sun did and picked up some material by accretion of meteors and planetesimals. The moon was created when a planetesimal hit the Earth and ejected enough material that coalesced to form the moon. Interestingly, an old, discredited theory said that the moon was torn away from the Earth, leaving the pacific basin, but did not specify the cause. The book says that the Earth and the moon coalesced as a pair of twin planets after the giant Angona Nebula came close to the sun and pulled away enough material to form all the planets. The sun and the moon both grew by accretion—the Earth enormously so, compared to the moon. Again, there is some overlap, but differences in details.

Score: Two predictions partially agree with science. In time, this number could increase.

*I.C.1.—Creation of Matter and Energy (Cosmology, Physics, *49,55,468)*

The book says that matter and energy are continuously being created in many places in

The book says the sun generates energy by combining four hydrogen atoms to form one helium atom, using carbon as a catalyst... This prediction also came true.

The book mentions a small, unnamed, chargeless particle which could be the particle that science calls the neutrino.... Here again critics might argue about an educated guess, but the prediction did come true.

The Urantia Book does speak of an enormous disturbance in our part of the universe eight to ten billion years ago, which could have been a local big bang.

Science has produced the building blocks of life, but has never combined them to produce any lifelike structure that can reproduce itself. Science has never created life from scratch and does not know how to do it.

the universe, especially beyond the seven superuniverses. Science has a discredited theory about continuous creation, but the accepted theory today is that all the energy in our universe was created ten to fifteen billion years ago in an instant and in one place. This is called the Big Bang theory. This energy has been spreading out ever since and has resulted in the entire universe. Interestingly, some of the newest experimental results are raising questions about the Big Bang. *The Urantia Book* does speak of an enormous disturbance in our part of the universe eight to ten billion years ago, which could have been a local big bang. While there is disagreement, perhaps there is a glimmer of agreement. Remember that science's measurements are all made here on Earth and are used to explain events that happened fifteen billion years ago and very far away. The extreme extrapolations in time and distance could lead to erroneous results. I remember that in the twentieth century, science's universe kept getting older and older. Has science found the right age now?

*I.C.2.—Creation of Our Solar System (Cosmology, *655)*

In the 1930s, one of science's proposed theories was that a massive body came close to the sun and tore out huge amounts of matter which later coalesced to form the planets. This theory is no longer accepted, and the best theory now says that the planets were created by the coalescence of matter adjacent to the sun at the same time the sun coalesced. The book says that the giant Angona Nebula came close to the sun and tore away lots of matter which coalesced to form the planets. This particular theory explains the additional seven-degree tilt of the sun's axis to the plane of the planets. The best science theory, above, does not explain this tilt. In this case, the book and science originally agreed, but science has changed its mind. However, agreement may return in the future. Remember that there are several hundred astronomer/cosmologists in the world, and they reach a consensus about which theory best fits all the available scientific data; changes in this theory can occur.

*I.C.3.—Life Implanted on Earth 550 Million Years Ago (Paleontology, *667)*

The book says that life was implanted on the Earth 550 million years ago, but it does not specify exactly what was implanted. Science says that life started over 3 billion years ago, as single-cell life. This is based on circumstantial evidence of ancient cellular structures that resemble living single-cell structures. Science also says that multi-cell life with significant DNA—structures in a cell that control all phases of cell life—appeared 600 million years ago. The differences here may ultimately be resolved. Science has produced the building blocks of life, but has never combined them to produce any lifelike structure that can reproduce itself. Science has never created life from scratch and does not know how to do it.

*I.C.4.—End of the Cretaceous Age: 65 Million Years Ago (Geology, *690)*

Science knows that the dinosaurs and many other classes of life disappeared about 65 million years ago in what is called the end of the Cretaceous age. Science's newest theory is that a 10-mile-diameter meteor struck the Earth; this created a long-lasting dust and cloud cover that blocked sunlight and adversely affected plant growth and, thus, many other living species. The crucial clue is the presence of a high concentration of the heavy element, iridium, in the boundary layer of deposits at the end of the Cretaceous. Iridium is not plentiful at the Earth's surface; it is found deep in the Earth or on certain meteors. The book says that the greatest lava flow of all time occurred at the end of the Cretaceous—it covered parts of several continents. It could have come from deep in the Earth, thus providing a source of iridium.

*I.C.5.—Breakup of the Fifth Planet from the Sun (Astronomy, Cosmology, *658)*

The book says that the fifth planet from the sun was slowly attracted by the gravity of the giant sixth planet, Jupiter. When it was close enough, Jupiter's gravity pulled the fifth planet apart. Science now says there never was a fifth planet, and that the asteroids are pieces of space matter (planetesimals) that never formed a planet.

Score: Five presently unfilled predictions.

[The following category is even more interesting than category A, because this material was not known to science in 1935 and is now being actively investigated.]

Category II—Predictions Unknown to Science in 1935

*II.D.1.—Dark Matter in the Universe (Astronomy, *173)*

The book discusses dark matter and dark islands of space and says that we will discover dark matter soon. Because dark matter cannot be seen (it emits no light), science knows little about it. Science thinks that some dark matter

is different from normal matter, such as a dense, cooled star. Recently, science has found several good theoretical reasons for the existence of such matter. Serious efforts are being made to find such matter, and positive results can be expected in the future. This has a very good chance of coming true.

*II.D.2.—Organization of Matter in a Superuniverse (Astronomy, *167,168)*

The book describes the organization of matter in a superuniverse. Science knows about some of this information, but does not know it all. In fact, science does not know about superuniverses. The book says that science will discover some of this information soon. The table below compares the equivalent information from science and *The Urantia Book*. The first column lists the Urantia criteria for the number of inhabited worlds in parts of a superuniverse. The other columns are self-explanatory. There is a question as to whether the Milky Way galaxy is a local universe or a minor sector of a superuniverse.

*II.D.3.—Location of Seven Superuniverses in the Grand Universe (Astronomy, *164,165)*

The book describes the seven superuniverses circling around Havona in a planar elliptical course. It also says that science has almost found superuniverse number seven and will find the rest soon. In 1935, science thought that all the galaxies were uniformly distributed throughout space. The existence of large voids between galaxies and the clustering of galaxies have only recently been discovered. This also has a chance of coming true.

*II.D.4.—Use of DNA to Evolve Human Species (Genetics, *734)*

The book says that the human species will no longer evolve by natural means. Scientific knowledge of DNA will be used in the future to improve the human species. Science is just getting started to map the entire human DNA genome. After this is completed, we may be able to start to understand how the DNA functions. Even now we are just starting to attack some genetic diseases which are apparently caused by errors in the DNA. This will probably come true in the future.

Score: Four predictions with good chances of coming true.

*II.E.1.—Reduced Gravity Effect on Calcium Ion (Physics, *462)*

Calcium atoms usually have two outermost electrons and are electrically balanced. At very high temperatures, one of the negatively charged electrons can be removed, and the resulting ion is positively charged. The book claims that such ions are slightly less affected by gravity than normal calcium atoms (beyond the mere loss of an electron's mass), and this accounts for the higher concentration of calcium atoms on the sun's surface rather than inside. This reduced gravity is quite unexpected, and might even be worth a Nobel prize to the scientist who discovers it. A test of this would require generating a beam of calcium atoms and a beam of high-temperature calcium ions, and comparing the effect of gravity on the two beams.

*II.E.2.—No Gravity Effect on Free Neutrons (Physics, *476)*

The book says there is no gravity pull on free, uncharged, unattached electronic energy particles. We take this to include free neutrons. This is also quite unexpected, and might likewise be worth a Nobel prize. It might be checked by generating a very weak beam of neutrons and measuring the effect of gravity on the beam.

*II.E.3.—The Origin of the Sunspot Cycle (Astronomy, *459,656)*

The book says that our 11-year sunspot cycle is a slow remnant of the short-term (3.5 day) Cepheid Variable phase of the sun. The Cepheid phase of a star is a cyclic variation of the brightness of a star, and the frequency of the variation and the brightness are related. Al-

In 1935, science thought that all the galaxies were uniformly distributed throughout space. The existence of large voids between galaxies and the clustering of galaxies have only recently been discovered.

Number of Inhabited Worlds	*Urantia Book* Name	Scientific Name
our world	Urantia	Earth
1,000	system	constellation
100,000	constellation	
10 million	local universe	Milky Way galaxy
1 billion	minor sector	local group
100 billion	major sector	cluster of galaxies
10 trillion	superuniverse	supercluster
100 trillion	grand universe	universe

though science does not make this claim, it is plausible. A study would require accurate brightness measurements of very long-term Cepheid Variable stars and precise, space-based, long-term measurements of the variations in the sun's brightness.

*II.E.4.—Twelve Planets in Our Solar System (Astronomy, *656)*

While science knows of nine planets and the remnants or pre-planetesimals of a tenth, the book says there are twelve planets in the sun's family. Astronomers are presently looking for other planets by watching for very small changes in motions of the outer planets, which could be caused by the gravity of two faraway planets. The two space probes that are traveling beyond Pluto, Pioneer 10 and 11, are also being watched for small changes that might be caused by the gravity of another planet or two.

Astronomers are presently looking for other planets by watching for very small changes in motions of the outer planets, which could be caused by the gravity of two faraway planets.

*II.E.5.—Two Unknown Types of Energy (Physics, *474)*

The book discusses all the types of electromagnetic radiation known to science. It also discusses two other types of radiation that science does not know. One is called infra-ultimatonic rays and is involved in the first stage of created energy. The other is called ultimatonic rays and involves the conversion of energy to ultimaton particles (see sixth prediction of next section). Some of the experimental work with high-energy machines may lead to discovery of these rays.

Score: Five predictions awaiting further work.

*II.F.1.—Cause of Wave Action of Light (Physics, *461)*

The book says that light consists of particles, but another energy, unknown on Earth, acting on the light causes the particles to bunch together in a wavelike fashion. Science knows that light has wave and particle properties, but does not know why both properties exist.

The book discusses anti-gravity and some particles that are affected by it. Science speculates that anti-gravity may exist, but has few ideas about it.

*II.F.2.—Speed Greater than the Speed of Light (Physics, Theology, *260)*

Science maintains that a physical body cannot move faster than the speed of light. The book discusses speeds faster than the speed of light, but it is talking about spiritual matter rather than physical.

*II.F.3.—Two Kinds of Gravity (Physics, *125)*

Science is familiar with the gravitational attraction between two physical bodies, but it does not understand the fundamentals. The book calls this linear gravity. It also talks about radial gravity, which apparently works between the central universe and certain other bodies—free ultimatons—and between the central universe and energy. Science has conducted very difficult experiments to see if linear gravity affects light energy. It does, but there may be enough of a discrepancy to account for another type of gravity.

*II.F.4.—Anti-gravity (Physics, *101)*

The book discusses anti-gravity and some particles that are affected by it. Science speculates that anti-gravity may exist, but has few ideas about it.

*II.F.5.—Major Energy of Space (Physics, *467)*

The book says that light and electricity are not the major energy of space. Apparently neither is gravity. The book said that science did not know about it in 1935. This energy apparently flows through space in circuits. One wonders if the book is referring to the strong nuclear force which science now knows about, and which is involved in the conversion of mass to energy in the stars. However, this energy does not flow through space.

*II.F.6.—The Ultimaton Particle (Physics, *465,467, 472,473,476)*

The book discusses the fundamental particle, the ultimaton. This is the first mass particle that energy is converted to. One hundred ultimatons make up an electron, but they do not use orbits of motion as electrons do; perhaps some kind of structure is involved. Science has no idea that electrons are made up of smaller particles.

*II.F.7.—Neanderthal to Cro-magnon Transition (Anthropology, *890)*

Science is aware that there was a rapid change from neanderthal types of humans to cro-magnon or modern man about 35,000 years ago. Science does not know how this happened so quickly, since evolution will not account for such a quick transformation. The book says that the descendants of superior extraterrestrials – namely, Adam and Eve—crossbred with indigenous Earth people to create modern man, who wiped out the neanderthals.

*II.F.8.—Life of an Ordinary Star (Stellar Physics, *172,465)*

The book says that an ordinary star, like the sun, can shine for billions of years (*465). Science also calculates that stars can generate enough energy to shine for billions of years. But

the book says (*464) stars that are in the mainstream of space energy flow can acquire more energy and shine indefinitely. On page 172, the book claims star life of trillions of years. The existence of a special space energy flow is unknown to science, as is the existence of flow channels for this energy.

Score: 8 predictions science does not know about.

Category III—Predictions That Are in Complete Disagreement with Science

*III.G.1.—Periodicity of Similar Chemical Elements (Chemistry, *480,10)*

The book says that if the chemical elements are listed by increasing atomic weight (relates to atomic structure), the lighter ones repeat their chemical properties every seventh active element. However, there are inactive elements in the sequence (the noble gases, such as helium and neon), and this stretches the actual sequence to eight elements. This is the number that science uses, and has known this for over 100 years. Some recently completed work has shown that some of the noble gases are slightly reactive, and this is now complicating the problem. The book talks about a repetition every seven elements, because seven is an important spiritual number.

*III.G.2.—Surface Temperature of the Sun (Astronomy, *463)*

The book says that the surface temperature of the sun is 6,000 degrees Fahrenheit. Science measures the temperature of the sun as 6,000 degrees Centigrade, or 10,000 degrees Fahrenheit. This could be due to any of a number of errors. There is another solar temperature mentioned in the same paragraph, and this one agrees with science's value.

[These errors mostly involve numbers or values—and errors could be expected. It is interesting that there are such a small number of serious errors in the book—less than ten percent of the predictions we considered.]

Score: 2 disagreements which could be explainable or accidental errors.

Conclusions

The thirty-three discussed predictions involve subjects that science developed or discovered around 1935 or sometime afterward. Most of these predictions come from these Urantia papers: 57, Origin of Urantia; 58, Life Establishment on Urantia; and 41, Physical Aspects of the Local Universe. A tabulation of results follows:

Category I—Predictions that disagreed with science in 1935.

- A. Seven predictions now agree with science (50% of category I).
- B. Two predictions partly agree with science (almost 15% of category I).
- C. Five predictions still disagree with science (about 35% of category I).

Category II—Predictions that were unknown to science in 1935:

- D. Four are actively being researched and could agree with science in the near future (25% of category II).
- E. Five more can now be investigated with science's technology. There is a chance that some of these will agree with science in the future.
- F. Eight more are still unknown to science.

Category III—Predictions that seriously disagreed with science in 1935:

- G. Two such predictions are discussed, and there is a good possibility that the errors are all accidental. They usually involve numbers or values of things. This is less than 10% of all the predictions considered and is a small percentage.

There are many other predictions in the book. Those that have been analyzed are the easiest for the authors to judge. They cover the subjects of physics, cosmology, energy, etc. There are more analyses that can be done by experts in other fields and in later years when more predictions may have come true.

There are more analyses that can be done by experts in other fields and in later years when more predictions may have come true.

Class A can be considered remarkable for 1935. This information disagreed with science in 1935, but 50 years later there is agreement. However, since the book was published in 1955, critics could claim that the 1955 date is applicable. For the 1955 date, the predictions are not exceptional. They are obviously in accord with *The Urantia Book* requirement that revelation be limited to information we will discover in the near future. Category B predictions have reached partial agreement with science and may agree more in the future. Together, A and B are about two thirds of category I. This indicates that some of the advanced technical information in *The Urantia Book* is correct. The presenters had access to information that was unknown to the human mind. In addition, the information comes from a number of presenters and covers a number of fields of science. The remarkable predictions of this information make it easier to believe some of the other material in the book. Category C

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still disagrees with science, but these are quite fundamental subjects, and scientific data are often quite sparse. This does not mean that category C predictions are wrong. They disagree with science's present theories. Science's theories on some of these matters could change, and there could be more agreement in the future.

Categories D, E, and F are even more intriguing, because they were unknown to science in 1935 and even 1955. Category D has four predictions that are well on their way to reaching agreement with science. Categories E and F involve some far-out subjects, and, if some of these agree with science in the future, this could enhance the believability of the rest of the book. The possibility of predictions coming true in the future is very important for a book with a very long life. The book says that knowledge of God comes through the spirit, and science now cannot help with that.

There are other subjects that are discussed in the book that may be amenable to prediction analysis. These include material such as spirit, mind, the Thought Adjuster, social science, etc. These should be combed to try to find objective material that could be new or predictive. Most likely, such information will be subjective, and this kind of material is very difficult to substantiate. However, it might be interesting to develop a survey questionnaire that could be used to compare experienced readers with new readers of the book. The results could be of great interest to other readers. However, even if such predictions are found, they would just make the book easier to believe. They would not necessarily prove the correctness of other parts of the book.

Revelation is matched to the needs of those who receive it. It may not completely cover a subject, and could even omit major parts of a subject. It will not provide information that will become useful far in the future. In this century, some readers' scientific needs are more stringent than those of other readers. This could be helpful to all readers, since it adds a factor of revelatory truth to some of the scientific material in the book, and implies that the rest of the book is more believable. One final piece of advice. Some of the secrets of understanding *The Urantia Book* are repetition, thinking, and not reading the book sequentially. Start and read what you can understand; then go back and study the other parts.

Love and Science

By
Charles E. Hansen

A student of The Urantia Book *for 13 years, Hansen holds a B.S. in business engineering and an M.B.A. He is a professional economist in Silver Spring, Maryland, and has served on the President's Commission on Cost Control.*

(Speech text and references are based on excerpts from a forthcoming book entitled, The Technology of Love, *written with the assistance of Wesley L. Tennant, to whom the speech is dedicated.)*

If Love and Science were to get together, most of us would expect Science to move in on Love —and then probably kick Love out in the end.

Then again, this might not be the actual result. When Freud went looking for scientific principles at work in the human psyche, he concluded that love was one of the foremost factors operating within us humans. He found love to be closely tied to the initial principle of all life forms; what he called the "pleasure principle." Freud even went so far as to suggest that love might be a basic force of nature. And Jesus hints at a most fundamental role for Love when he suggests that even the rocks can express their affection toward him if the people do not.

Modern physicists will not likely be impressed with such words, but it is such hints of love being related to fundamental operations of Nature that catches our scientific eye. As, for example, when Freud writes that all of our "life's instincts...are best comprised under the name *love;* their purpose would be to form living substance into ever greater unities, so that life may be prolonged and brought to higher development."[1]

This human tendency toward "higher development" caught the scientific eye of Abraham Maslow. He suspected some fundamental principle at work which could account for it. Maslow found that we humans have certain basic needs such as air, water, food, shelter, sleep and sex. But he also found that safety and security, love and belongingness, and self-esteem by others were basic needs—humans actually become mentally ill and even physically ill without them. After these basic or "survival" needs are satisfied, he found that a more developmental thrust emerges in humans, a human tendency to pursue more expressive or growth needs.[2] These Maslow defined as the need for Meaningfulness or Purposefulness in our lives, the need for Self-sufficiency or Self-organization, for a bit of Spontaneity or playful amusements which frequently involve elements of Chance, the need for Effortlessness or Efficiency, the need for Richness or Complexity. Yet we also have needs for Simplicity, Order, Organization, Nonpartiality, and Completeness. He found the need for Necessity; that is, we have to be able to consistently depend on some things. Maslow found the need to pursue Perfection, even if we never reach it; the need for Individuality or Uniqueness, Aliveness, and a Wholeness to include what one of his subjects, Einstein, labeled "the ideals that had lighted his way": Beauty, Goodness and Truth.[3]

Maslow found this pyramid of "needs" to include those which, as Einstein's words reflect, guide us toward our highest development, our fullest self-actualization as individuals. Maslow found these needs to be irreducible innate tendencies; our need for Simplicity cannot be met by our need for Order any more than we can meet our need for sleep by eating more food. The problem is that Maslow's work has long lacked an integrating factor, a fundamental principle, which ties all these needs together. Actually, Maslow suspected and wrote, much like Freud, that Love may be just such an integrator.[4]

And we are now ready to do what Maslow left undone. If we consider our actual experience, we do find something of Freud's "pleasure principle" at work within us. But we seem to base our needs-fulfilling judgments not on just *immediate* satisfaction or pleasure; rather it seems the more appropriate broker of our needs is that subtle, more encompassing calculation of *being pleased.* This broader calculation may even accommodate pain; and frequently this calculation involves *pleasing others.*

And we humans are not alone in figuring out this calculus, nor were we first to have it. Trainers of dogs and other advanced species tell us that these animals do not perform just in order to be fed, but *to please* their masters; praise is the trainer's greatest tool. Many would, in fact, consider evidence in dogs and dolphins a surer sign of a scientific principle at work than that found in man, woman, and child.

And just what is this scientific principle that seems to be at work at the core of Maslow's pyramid of needs? If we follow Freud and Maslow's clues, and a few others, we will find that it is the invariant element at the core of Love, the *intent-to-please.* Our entire human endeavor can, in fact, be summarized as an *intention to please* our internal needs-structure, or that of others. We see that *to please* always means meeting this pyramid of needs; whether in the form of food or shelter, or in the form of meeting needs for Efficiency, Order, Individuality, Wholeness, or any of the other

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needs up through Beauty, Goodness and Truth.

But meeting needs in the most *pleasing* manner also involves an *integration*, however subtle: we enjoy our food more if it is beautifully colored and arranged; we try to keep both Simplicity and some Order in our lives at the same time, and so on. So if we stack up all the needs in Maslow's pyramid form (putting the basic survival needs on the bottom, and the expressive or growth needs on top, peaking with Beauty, Goodness and Truth), and then run our intent-to-please right down the core of it, we find our solution, a solution spanning all our human needs. Maslow's missing integrator is the intent-to-please.

Whatever Love is, being pleased is how we ultimately experience it; much as Jesus himself defined it in his words, "I do always *those things that* please *the Father."*

This is, of course, the same invariant at the core of all of our energy expressions of Love. Whatever Love is, being pleased is how we ultimately experience it; much as Jesus himself defined it in his words, "I do *always* those things that *please* the Father." For Love's actions must always please the object or intend to do so. So we seem to encounter a case of perfect symmetry. Our intention to please ourselves and the intent to please others is essentially the same invariant principle at work as Jesus suggests with the Golden Rule. And it can operate *only in relationship.* We get nowhere, our development stops cold, by attempting to shortcut this symmetry and please ourselves without pleasing others in the process. In fact, modern ecology informs us that we had best consider even what pleases the trees; that is, what satisfies their needs.

[Einstein] compared the requisite state of mind for doing his physics to "that of the religious worshiper or the lover"—"closely akin to that which has possessed the religious geniuses of all ages."

We begin to see why the language of Love and its invariant, the intent-to-please, infiltrates *all* of our seeking and finding—whether we are seeking our most fundamental survival needs for food, safety and esteem, or our higher, more expressive needs for Beauty, Goodness and Truth—the peak of which to many of us is actually finding relationship with God himself and partaking of His thoughts.

Now this talk about Love and about "being pleased" is a long, long way from the cold halls of hard science. However, if we listen to perhaps the greatest scientist of our era, Einstein, we find something rather strange. Einstein expressed his entire scientific endeavor as not only one of being guided by Beauty, Goodness and Truth, but more so as wanting to "know God's thoughts." Said Einstein, "The rest are details."[5] And how is this to be done? Einstein gives his formulae: he recommends "the compassion to embrace all living creatures and the whole of nature in its beauty."[6] He even defined this "embrace" as one of "cosmic religious feeling" which embodies the highest states of being pleased. Einstein called it "joy," "wonder," "awe," and "rapturous amazement." To be more specific he compared the requisite state of mind for doing his *physics* to "that of the religious worshiper or the lover"[7]—"closely akin to that which has possessed the religious geniuses of all ages."[8]

Of course Einstein's views are not held in particularly high regard by most scientists today. Einstein believed there are objectively real foundations in the universe, fundamental, unchanging or invariant principles that we do not invent in our heads, but have to pry out of Nature by *using* our heads. In this process Einstein held that we had to rely upon a "pre-established harmony" between ourselves and the universe. Such talk finds little favor with the prevailing scientific views that there *are* no foundations in the universe, no objective reality, but only one (or more) that we create in our minds for our minds to satisfy our local cultural and linguistic conventions. Any suggestion that we are dealing with the *real* Mind of God, and in even approximate harmony or relationship therewith, as Einstein held, is hopelessly outdated in most halls of Science.

Einstein's demise is usually credited to the loss of his famous arguments about quantum physics with Niels Bohr and Werner Heisenberg. Quantum theory had reached a point, with much help from Einstein, where only statistical methods could be used to make predictions at the atomic and subatomic levels. The mathematics and methods of quantum theory, by their own definition, act as kind of a blanket beneath which we cannot peek. Quantum events add up to give nice, smooth curves in the blanket, but no individual event can be precisely predicted. The vast majority of physicists and other scientists considered this a sign that, at its foundations, reality operates only by randomness or Chance. Einstein, and a few others, objected. We cannot logically say *what* was happening beneath the quantum blanket, argued Einstein, and surely it could not be pure Chance because God would not play dice with the universe.

Obviously, such arguments did not carry much weight in physics. Einstein left the discussions muttering to himself and went off to work alone for the next thirty years on a better solution. Meanwhile, most of us were told that the solution was already found. However the actual case among *physicists* is still much as Einstein expressed it in 1940: "For the time being, we have to admit that we do not possess any general theoretical basis for physics, which can be regarded as its logical foundation."[9]

Today we actually have about six or seven "acceptable" versions of reality, or nonreality, among practicing physicists, and no agreeable logical foundation. As many others have pointed out, Chance holds its current position as prime contender as a matter of default, and a somewhat faulty one at that: physicists cannot actually find any *pure* Chance operating even in quantum physics. Chance always manages to behave within certain limits. Furthermore, by using it to explain *anything*, Chance actually explains nothing. It has huge support, however, from those who hold that there are no explanations. You get some idea of why Einstein referred to the new "religion" that had overtaken physics, and retired from the debate.

Although stalled in his pursuit of a solution, Einstein tells us that in order to make any progress in establishing more logically coherent foundations for physics we would have to search out some new fundamental principle of Nature.[10] It would, in fact, have to encompass the totality of our experience, up to and including humanity itself. Its general features would have to be quite easily grasped: it could not be called a "logical foundation" if only a few experts could understand it.

Now we normally think that breakthroughs in physics require crucially complex mathematics, supercomputers, and billion-dollar particle smashers. On the other hand, many of the crucial breakthroughs in modern physics have been the result of attempting to explain the most obvious. Modern quantum theory arose from a discrepancy in physics that had hot metals glowing the wrong color—something the average iron-monger could observe. And Einstein's monumental achievement of General Relativity he credited to the simple thought of a man falling off a roof!

I bring these examples to attention not to suggest that we should avoid penetrating into nature's hidden realms, but that by simply observing "what is before our sight," as Jesus suggests, we might understand "that which is hidden."[11] From this perspective, it seems that, while we spend vast resources interrogating everything from quarks and electrons to the far distant stars and galaxies, the most profound unification of physics, chemistry, and biology—Humanity itself—exists right before our eyes. And similar to the "ultraviolet catastrophe" which marked the end of the old physics, humanity does more than glow the wrong color. According to our most advanced physics, we humans should not exist at all—except perhaps as a "fortuitous accident" that logically cannot be distinguished from the impossible.

There is no question that Science has accomplished great things while keeping humanity in a "separate department of accidents." However, it is highly unlikely that any ultimate unification of scientific knowledge—including physics—can occur with such segregation in effect. There are sound reasons, therefore, why top physicists, such as Roger Penrose, author of *The Emperor's New Mind*, are now looking at the peak of humanity, the human mind, as the possible key to the future understanding of the laws of physics.

Penrose suggests that the most fundamental laws of nature are somehow displayed in the operations of our consciousness and its intentional creativity, essentially the way our mind operates—surely one of the least likely places for traditional physics to look. In his book's Foreword we are told that "Penrose is one of an increasingly large band of physicists who think that Einstein was not being stubborn or muddle-headed when he said his 'little finger' told him that quantum mechanics is incomplete." Penrose asks, "Is there a level beyond quantum mechanics..., perhaps even deeper laws, essential for the operation of a mind?"[12]

If we spelled that mind with a capital "M," we would, of course, be heading back toward "God's thoughts" where Einstein held physics to begin. If the universe itself does proceed from God's Loving thoughts, Nature itself should, one would think, bear some indelible mark of this in its most fundamental sense and dynamic. Indeed it probably does: recall that the invariant at the core of Love is not derived from any considerations of God or theology. That is not, for example, how Freud encountered it, nor why he granted Love cosmological status. Love's invariant is derived directly and solely from the most general features of how our minds operate in our everyday needs-fulfilling experience. As some of you will recall from "The Mathematics of Love," it appears to be an invariant that penetrates all of Reality on much the same order as any other scientifically founded invariant principle. *The Urantia Book* takes much the same approach. On page 137 we find what appears to be the invariant at the core of Love described: "There is operative throughout all time and space and with regard to all reality of whatever nature an inexorable and impersonal law [invariant principle] which is equivalent to the function of a cosmic providence."

This sure sounds like something Science is bound to encounter sooner or later—and will

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...a beauty of mathematics is this tendency to almost organize itself.

...the integrator of all of the pre-logical criteria upon which mathematics stands, seems to be the intent-to-please... *and a certain "joy" that mathematicians acclaim when they find a solution or grasp some major "truth."*

have to learn to live with.

So let's take a closer look at physicist Penrose's work. Here we find some common ground to investigate regardless of whether we create reality in our heads or use our heads to *relate* to a Reality that is really "out there."

Whichever view we take, we find the most fundamental language used by Science to describe reality is mathematics. Although mathematics is an invented language, "created" in our minds we might say, the first mathematics were probably not developed to solve "mathematical" problems in just our heads. Mathematics was more likely developed because someone needed a simpler or more efficient method of ordering everyday, real-world experience—keeping track of fish, sticks, stones and loans. This suggests that the human strivings for Simplicity, Efficiency, and Order predate or "underlie" the first mathematics.

In fact, even the most advanced mathematics, which we usually consider as depending solely on deductive Necessity, actually depend on many other equally valid, pre-logical, "judgment-forming criteria," as Penrose labels them. They are almost innate tendencies of the human mind, long predating mathematics itself.

If we begin at Mathematics' foundations, we find Meaningfulness first on a long list of notions that are themselves more fundamental than mathematics. As Penrose reminds us, "It is indeed 'meaning'—not blind algorithmic computation—that gives mathematics its substance."[13] In addition, we of course find Simplicity, Efficiency, and Order vital to mathematics, followed closely by "pre-logical" criteria of Completeness, Perfection, Complexity, Nonpartiality, and, of course, deductive Necessity. Then there is Self-sufficiency or Self-organization: a beauty of mathematics is this tendency to almost organize itself. Other notions such as Chance or randomness are vital to many mathematical undertakings. We find that even Individuality enters in at the foundations of mathematics in terms of the discreetness and uniqueness of each natural number. Mathematics also uses the more inclusive criteria of Wholeness. And Penrose points out how vital the "pre-logical" notion of Beauty is to mathematics, not as an extraneous frivolity, but as one of its core guides. Plato even equated mathematics with Goodness, and modern mathematician Whitehead noted a similar affinity. Finally, we find mathematicians must employ some notion of "truth" which exists before and goes beyond mere mathematical equations.

Now we have quite a laundry list here, with a bit more to add. What is missing is a means of integrating all of these notions. We need an integrator or we should, for example, end up pursuing Simplicity without regard to Completeness, or Order without regard to Efficiency, and so on. I think here we find our most likely suspect; and it, too, predates formal mathematics. Mathematicians will recognize it as that constant wrangling *to be pleased* with the endeavor at hand.

Indeed, the integrator of all of the pre-logical criteria upon which mathematics stands, seems to be the *intent-to-please* which actually begins as the arbitrator of the most fundamental judgment-forming notions of Simplicity, Efficiency, and Order—and peaks as those aesthetic experiences of elegance and Beauty, and a certain "joy" that mathematicians acclaim when they find a solution or grasp some major "truth."

It is not surprising that Penrose concludes that the *non-algorithmic* "judgment-forming criteria" which underlie mathematics are closely related to the operations of our mind as a whole. They might even require the notion of Aliveness which, so far, we can't quite get on a silicon chip. That mathematics must reach outside of itself for its own foundations has been acknowledged since Kurt Gödel's famous proof on the question; but we are now able to describe such foundations more accurately and more objectively. These are not subjectively imagined foundations. Mathematical Simplicity, Efficiency, Order, Completeness, Perfection, Beauty or even "Truth" cannot be just in the eye of the beholder; indeed, Penrose finds that we must appeal to *"one* universally employed" non-algorithmic system by which judgment of mathematical truth occurs and can be communicated among mathematicians themselves.[14]

Now we cannot help but notice that this "one universally employed system" of pre-logical judgment-forming criteria upon which mathematics depends and from which it has emerged is identical with the expressive attributes of Maslow's Pyramid of Needs. And we cannot help but notice that they are all brokered or arbitrated by the same invariant principle, the *intent-to-please.* Should this surprise us? Not really. Physicist Bohr explained that "...much as all living organisms are constructed in accordance with the same laws of nature, and...from approximately the same chemical compounds, so the various possibilities of logic are probably based on fundamental forms that are neither man-made nor even dependent on man."[15]

In other words, Bohr is suggesting that the pre-logical operations of our minds and Nature's operations have the same objective

foundations. Einstein went a bit farther and termed this natural relationship one of "pre-established harmony," wherein the logic of our minds tends to find a match in the underlying logic of the universe around us. And Heisenberg makes it plainer: "If nature leads us to mathematical forms of great simplicity and beauty...we cannot help thinking that they are 'true,' that they reveal a genuine feature of reality."[16] Heisenberg specifically agrees with Einstein when he says: "I believe, just like you, that the simplicity of natural law has an objective character, that it is not just the result of thought economy."[17]

Of course we are now ready to suggest that there are many more attributes involved in this relationship between mathematics and Reality besides just Simplicity and Beauty. We know on the mathematical side at least that mathematics must necessarily haul a lot more than Simplicity or Beauty along within it. This we have just demonstrated, as does Penrose. We need Maslow's entire expressive pyramid, and the invariant at its core.

And here we find a solution to the most fundamental problem facing modern physics: Why does mathematics work at all in physics? Why do mathematics and physical reality "match up" even if approximately? This problem is a logical catastrophe of the highest order—about like hot iron glowing the wrong color, only worse. Current answers to this enigma actually include terms like "miracle," "good fortune," and "unanswerable."

Could it be that the pre-logical structure underlying mathematics is the same as the structure underlying objective reality...rocks and all? And I do not mean just for "Simplicity." I mean for the entire pre-logical structure and the invariant at its core.

By the late 1960s, Maslow was already thinking along this very line, boldly claiming that orthodox science was due for "a critique (*a la* Gödel)...of the ground on which it rests, of its unproved articles of faith, and of its taken-for-granted definitions, axioms, and concepts."[18] Maslow then proceeded, in his terms, "to raise the radical question: can *all* the sciences, *all* knowledge be conceptualized as a resultant of a loving or caring interrelationship between knower and known?"[19]

Maslow said that it "looks probable" that scientific "truth" itself, the way Reality is, "is finally definable, only and altogether, by all the judgment-forming attributes we have just described." In Maslow's own words, "...truth is ultimately beautiful, good, simple, comprehensive, perfect, unifying, alive, unique, necessary, final, just [or non-partial], orderly, effortless, self-sufficient, and amusing."[20] Finally, he suggested that "knowledge through love" should be scientifically investigated in the "strictest sense."[21]

There is little room for escaping the conclusion that the way Reality is, the way Nature itself operates, is based on the same "fundamental pre-logical form" which underlies our logic and our mathematics. Maslow was only filling out what Bohr, Einstein, and Heisenberg suggested; and what several others such as physicist Charles Peirce have envisioned. As Penrose informs us, there is no way to get these pre-logical attributes *out* of our mathematics; and there appears, then, that there is no way to get them out of Reality itself. The only thing missing in Maslow's offering is the integrator of these attributes, the same invariant at the core of Love—which he indirectly proposed and which can now be officially added.

This would, of course, explain why mathematics works as a predictive representation, however approximate, of our real world. As Penrose observes: "There must...be some deep underlying reason for the accord between mathematics and physics."[22] He suggests that the answer will be extremely subtle, and that it will involve not only consciousness but some "non-algorithmic action" with a "role [in] the physical world of very considerable importance."[23] He then concludes that the answer must be "intimately bound up with the very concept of mind."[24] Obviously we would expect it to center about the invariant principle at our mind's core—the intent-to-please.

Thus Love subtly makes its appearance at the foundations upon which the whole of Science stands. The reason mathematics works is that it must somehow align with Nature's fundamental operations, what Science calls Nature's *causality*. Both must play off the same invariant principle; and that principle is now coming into clearer view: It must be the invariant principle at the core of Love that is the heart of Nature's causality.

Causality takes us deeper than any identifiable force or particle of Reality; it takes us into how such fundamental processes of nature *operate*. And there is nothing more fundamental to Science. As Einstein observed, the concept of causation is "the ultimate basic postulate of all natural science."[25] And this remains true even if we invent all of Science in our heads, or claim there is no causality. This is as close to logical foundations as we can get.

Einstein in fact felt that the answer he was seeking might be found in a new "*Super-*

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Causality takes us deeper than any identifiable force or particle of Reality; it takes us into how such fundamental processes of nature operate. *And there is nothing more fundamental to Science.*

Nature's causality seems to be best described as a kind of synergetic superposition of these attributes integrated by the same invariant we find at the core of Love.

Persuasion offers itself to more than individual forces such as gravity; it seems to apply to how such forces operate in the Universe as a whole. It suggests a general direction, a guiding, without dictatorial control. Yet, nothing can escape its influence.

causality."[26] It would have to *accommodate* those features of Reality's operations which could not quite fit into the old mold of Newtonian mechanical Necessity, or entirely into the new mold which attempted to credit everything to Chance...and modern thinkers have found it will have to accommodate a lot more.

It is indeed startling to find that even for our most advanced physics, the concept of causality is wide open for an infusion of the attributes and the integrating invariant I have been describing—essentially the non-algorithmic foundations that Penrose's work touches so clearly. Nature's fundamental operations cannot be viewed as a couple of simplistic notions like Chance and Necessity any more than the foundations of our mathematics can be. Many other physicists, as far back as Peirce, have argued that something more subtle is needed to integrate Chance and Necessity; and which can also account for the Complexity, the Order, the Efficiency, the Simplicity, the Wholeness, the Individuality, the Aliveness, and so on...that we actually find in experience, peaking with the need to accommodate the creative developmental thrust we experience with the operations of life and, most notably, the human mind and its seeking after Beauty, Goodness and Truth. Peirce even proposed the solution: the Supercausality of "evolutionary love."[27]

Indeed our modern study of causality takes us straight to the same answer. We find both philosophers and modern physicists informing us that a "wider and richer" scheme of causality is needed—a "synthesis or integration of causal factors" which "can be analyzed with the help of logic; but cannot be *reduced* to logical terms."[28] In a word, they are *pre-logical;* and it seems they are the same set of irreducible attributes we find at the foundation of our mathematics and the needs-fulfilling operations of our minds. Nature's causality seems to be best described as a kind of synergetic superposition of these attributes integrated by the same invariant we find at the core of Love.

And what would be the hallmark of this causality that even a physicist could not miss? Our answer is that Love operates only by *Persuasion.* In fact, here we encounter the one word which completely encapsules the new Supercausality in language that the most advanced physicist—as well as the child—can grasp: Persuasion.

There is mounting evidence that Nature does indeed operate by just such Persuasion. Our foremost clue is that Persuasion can only operate by interactive communication of information. Physics now recognizes that all the known forces are "mediated" by "messenger particles." We can call it force, but it is essentially interactive communications at work—just as Persuasion requires. And it is not coincidence that Einstein redefined our understanding of gravity as exerting "its authority not with force but with persuasion"—the persuasion of the most efficient paths laid out by communicative fields in space and time.[29]

Persuasion offers itself to more than individual forces such as gravity; it seems to apply to how such forces operate in the Universe as a whole. It suggests a general direction, a guiding, without dictatorial control. Yet, nothing can escape its influence. Thus Persuasion explains why one or more of the matrix of causal factors must somehow embody an *"irreversible* productivity"; a "generative order," a "creative predisposition" or developmental thrust in Reality's operations.*30*

But scientists also have a valid point about regression and reversibility. Any scientific logical foundation must not only account for Nature's creative advances but also allow for both regression and for the reversibility we find in our current mathematical laws of physics. Technically these equations work going forward or backward in time—although most of Reality seems to go in only one direction.

Again, the accommodation offered by a persuasive causality is remarkable. But rather than label it persuasive causality, let us give it a more scientific footing that gives some indication of its superimposed elements and the invariant at its core. I offer the new term *delective causality—delective* taken from the Latin words for "highly pleasing" and "to allure." You will get the idea every time you go past a delicatessen when you are hungry. Delective causality even sounds better than "deterministic causality," "indeterministic causality" or "no causality" at all. It allows all the "alluring" irreducible attributes we have been discussing to be accommodated under one concept whose central thesis is Persuasion.

Persuasion is actually an old idea whose time has come, even to the halls of Science where it should be welcome. It is intriguing to find physicists themselves acknowledging the mild error in the long-standing tradition of holding causation to be a one-way concept, which tends to ignore the interaction of the effect back toward the cause. This interactive, interrelated feature of Nature's processes is a fact of physics that we must recognize. Viewing causality as a one-way process is only an *approximation* of a much more subtly interconnected, two-way, or actually all-way operation by which Reality is

in constant interactive communication.

Our old concepts of causation typically considered cause to be a matter of exerting external forces on substance that was internally inert; composed of tiny dead billiard balls. Prevailing definitions of causality still retain much of this internal deadness of the Newtonian era. But it is only a useful approximation, one which runs out in both quantum theory and in life. A more "adequate picture is provided," as one physicist explains, "by a *synthesis of self-determination and [external] determination*, in which external causes are conceived as unchainers of inner processes rather than as agents molding a passive lump of clay...."[31] In order for such "unchaining" communication to occur, information must appeal to common elements of internal structure, common "inbuilt patterns of response"[32]—the "needs" or "attribute" structure of the participants, whether humans, dogs, trees, rocks, or electrons.

We also find something else occurring in Reality's two-way, interactive, more "participatory" causality. As physicist Mario Bunge explains: "Room is made for the *may* at the expense of the *must;* novelty is seen to be possible."[33] The language of *may* is, of course, the language of Persuasion. And as to novelty, there is a certain intrinsic freedom of response, an inherent self-determination, in a "dipolar" causality that relies upon communication of information. Indeed we have a freedom beginning at physics' foundation that seems strangely reflective of a truth that will set us free in the most fundamental manner suggested by Jesus. Freedom is no longer tacked on at the end. Yet this Freedom is not without guidance. Although delective causality offers a freedom which allows novelty, diversity, reversibility, error, pain, and regression, the persuasive invariant at its core is always present.

This is a causality that can accommodate mind as well as matter, essentially linking the two. The causal nexus of the mind can only be termed one that operates by a kind of interactive influencing of energy-matter by Persuasion. Thus mind is no longer separated from matter; nor from physics, but intimately linked to both, as Penrose suggests.

Surely the evidence mounts that we have found the Supercausality that modern Science is missing. Delective causality offers us a *relational* Reality in which there are probably no transactions of Nature on any scale which do not have their interactive information components. This means that even the remotest ultimate entities of energy-matter must somehow retain an "internal" capability of handling the attributes of delective causality, however subtly, with the invariant at its core. Many physicists have already concluded that Reality essentially has an informational basis; and not a few have suggested a "mental component" therein.[34] We are simply giving such thinking a firmer shape, yet not so firm as Einstein might have wished. Persuasion is not veiled determinism.

Persuasion must always retain at least an *element* of Spontaneity-Chance. But an *element* is not the same as a *foundation*. We see that communication of information must always embody such an element of Spontaneity-Chance in the response if not in the information itself. This alone would account for the statistical nature of all the laws of physics in general; but this is not *pure* Chance operating any more than it can be a matter of *pure* Necessity. It is possible that current quantum theory has already reached this threshold where Spontaneity-Chance of self-determination cannot be further penetrated, where Nature's freedom of choice, as physicist Bohr once referred to it, is protected. It is also possible that more subtle information interactions are going on beneath the quantum blanket, and may eventually be made known. Either way, delective causality is the more explanatory solution. And either way, Einstein ends up being more right than wrong; that is, "Chance" cannot be the logical foundation of physics, but only an element thereof.

Delective causality also explains why, in quantum physics, the individual observer seems to play such a vital role, so vital that many physicists suggest Reality is observer-created and nothing but ethereal waves of potential until we look at it. Delective causality tells us, on the other hand, that it is not so much an observer-created Reality as an observer-*related* Reality we are involved with. It is extremely provocative in this regard that Einstein's principle of Relativity is not a law of physics, it is a law *about* the laws of physics. Einstein's fundamental breakthrough holds that the laws of nature will appear the same to each individual observer. He held that this was the result of the inherent *rationality* of the universe and our harmony within it; and for physicists it remains among the most fundamental tests for "truthfulness" of any proposed "laws." But Einstein's Relativity is kind of passive; all it does is ask the observer for the time and space, so to speak; whereas quantum theory holds that reality itself becomes actively malleable to the individual observer. We can now see, I suggest, that the rationality of Nature which relates to "truthfulness" and the malleability of Nature

Indeed we have a freedom beginning at physics' foundation that seems strangely reflective of a truth that will set us free in the most fundamental manner suggested by Jesus.

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This problem of emergent order... seems destined to require delective causality, a causal process with a developmental thrust toward not only the more complex... but toward that which is capable of being most pleased in the process.

We simply take survival of the fittest and augment it with "flourishing of the pleasingest"—thus spanning all our needs from biological survival to the highest cultural expressions with the same invariant: the core of Love.

which relates to "usefulness" are inextricably linked. "Usefulness" has no meaning except being "serviceable to our needs." Thus the malleability of Reality that we seem to encounter in quantum theory is only a further excavation of the "user-friendly" universe which Einstein's Relativity first detected—an excavation no wise complete, for we have only clipped the peak of the Intent To Please the individual which apparently pervades even the physics of the universe.

Science is, of course, more than physics. Our solution must account for the inherent *Becoming* in Reality, its incessant self-organization which the current laws of physics do not address.

This problem of emergent order, running all the way up through evolution of life and humanity, seems destined to require delective causality, a causal process with a developmental thrust toward not only the more complex, which allows richer autonomous relationships, but toward that which is capable of being most pleased in the process. Humanity thus becomes the emergent product of Reality's delective causal equation, and is no longer quite so "accidental." As Einstein's fundamental principle would require, our solution must be capable of such massive accommodation, including humanity and our mind itself as part of Universe, and all that we do, are, and can become. A scientific logical foundation could do no less.

We can also close the long-standing gap between biological and cultural evolution. We simply take survival of the fittest and augment it with "flourishing of the pleasingest"—thus spanning all our needs from biological survival to the highest cultural expressions with the same invariant: the core of Love. Natural selection itself needs just such an interactive, persuasive broker, one that can accommodate not only survival, but the purposeful, judgment-forming operations of our minds—evolution's true missing link. Evolution theory needs this motivational integrator, a striving that involves a little more than raw survival of our selfish, little genes for a few seconds of universe time. And there is no greater motivator bridging reproduction, survival, and the creative social-cultural order, than the striving to be pleased; "to be loved." Surely, we cannot much longer ignore our actual experience and attribute the progressive nature of biological and cultural evolution to some blind interplay of Chance and Necessity which just accidentally happens to evade entropy's law of decay and waste.

While even Jesus tells us the Earth *will* pass away, the ultimate "New Story of Science" will have to do with something more than the waste products generated.[35] It will have to do with what generates them. As many others have concluded, we need a logical foundation of growth to which entropy's death, decay and waste are secondary rather than primary. This would be the growth process of what Peirce termed "evolutionary love," the main business of the universe with which we humans are intimately and eternally related— "at one and the same impulse projecting creations into independency and drawing them into harmony."[36] It should not surprise us that the fundamental language of this business of Becoming bears the hallmark of the Intent-To-Please. What else would a Father have in mind for His children? Is not "all the rest"...just details?

When Peirce sketched this solution a century ago, he said: "If thinkers will only be persuaded to lay aside their prejudices and apply themselves to studying the evidences of this doctrine, I shall be fully content to await the final decision."[37]

As that time draws near, we are finding that all of Science, from the physical to the political, is, at its foundations, the Science of Love.

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PERSONALITY AND WILL: Increasing Mastery of the Inner and Outer Worlds

By
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God looks from an infinite distance into a Grand Universe mirror which is framed by time and space. In it he sees a reflection of himself, a reflection though not infinite and absolute, yet still reflective of the essence of his existence.

At some unimaginable level of reality, God is alone in the universe. There is none other beside him. But inherent IN God is the potential for the manifestation of differential forms of his existence. By the simple choosing of his unfettered and absolutely free will, God gives life to an infinity of unified, yet diverse, expressions of his being: potential and actual, personal and nonpersonal, finite and infinite, material, mindal, and spiritual. This is not a linear occurrence. This process is an inherent part of God and simply is...always.

One consequence of this eternal process of God's self-existence is the qualification of a segment of God's infinity into an expression bounded by time and space, limited to the experience of his material, mindal, and spiritual realities, and unified by personality...a four-dimensional expression of God in the finite, that is, "in finity." Called by some, "Supreme," it all takes place in a space called the Grand Universe.

What is this place called the Grand Universe? What is its purpose? Who knows that they live here? In whom does its value reside? Which thoughts are thought here? What matters here? These are some of the questions of the four dimensions.

God looks from an infinite distance into a Grand Universe mirror which is framed by time and space. In it he sees a reflection of himself, a reflection though not infinite and absolute, yet still reflective of the essence of his existence. As he moves closer to the mirror, he knows in it the fullness of those aspects of his being which can be expressed in such a mirror. Closer yet, he chooses to experience those aspects of his being which have been selected to interact for a time in such a space. Closer still to the mirror God sees himself as many sons, per-sons...a reflection of himself through each of whom he is expressed uniquely and from each of whose unique perspective he is known as God. At the end of time and throughout this space, each son recognizes his Father and once again, as always, God is alone...and yet... accompanied by an infinite number of sons who are a part of his personal presence and who share his will, the very same will which gives these sons their lives.

* * *

God is personality." (*28) "Personality is the exclusive gift of [NOT FROM] the Universal Father." (*77) Could it be that even though each one of us is not God, that God is—LITERALLY—each one of us? I AM Dave; I AM Steve; I AM Berkeley; I AM Melissa; I AM Marta.

"Mortal man is more than figuratively made in the image of God. From a physical standpoint this statement is hardly true, but with reference to certain universe potentialities it is an actual fact. In the human race, something of the same drama of evolutionary attainment is being unfolded as takes place, on a vastly larger scale, in the universe of universes. Man, a volitional personality, becomes creative in liaison with an Adjuster, an impersonal entity, in the presence of the finite potentialities of the Supreme, and the result is the flowering of an immortal soul. In the universes the Creator personalities of time and space function in liaison with the impersonal spirit of the Paradise Trinity and become thereby creative of a new power potential of Deity reality." (*1281) Is the willful choice we make to do God's will a literal part of that same will which separated the evolutionary finite from God's infinity and will cause the final actualization of its potentials?

"Man attains divine union by progressive reciprocal spiritual communion, by personality intercourse with the personal God, by increasingly attaining the divine nature through wholehearted and intelligent conformity to the divine will. Such a sublime relationship can only exist between personalities." (*31) Does not divine union with God imply the final mastery of those aspects of the divine nature which we experience in time and space?

"The progressing personality leaves a trail of actualized reality as it passes through the ascending levels of the universes. Be they mind, spirit, or energy, the growing creations of time and space are modified by the progression of personality through their domains. When man acts, the Supreme reacts, and this transaction constitutes the fact of progression." (*1286) Does not true mastery of the inner and outer worlds take place as each per-son-ality allows the gifts of God to be realized in self-conscious-

ness, that is, as the growth of the soul?

"The Supreme is God-in-time; his is the secret of creature growth in time; his also is the conquest of the incomplete present and the consummation of the perfecting future. And the final fruits of all finite growth are: power controlled through mind by spirit by virtue of the unifying and creative presence of personality. The culminating consequence of all this growth is the Supreme Being." (*1280) When God looks in his mirror, does he actually see evolution in time, or is the self he sees reflected in the already-complete Supreme?

"Man, the civilized, will someday achieve the relative mastery of the physical forces of his planet; the love of God in his heart will be effectively outpoured as love for his fellow men, while the values of human existence will be nearing the limits of mortal capacity." (*1306) Is it not through the choosing of a relatively free-will personality that this mastery takes place and the true potentials gifted by the Father have therefore and thereby been fully actualized in human experience?

* * *

One day in time a birth takes place. A new child is born to finite, material parents. Soon the child, vaguely aware that she's **not** the creatures around her, sees her reflection in a mirror. Her immature vision stops at the mirror's edge and she sees her body and believes that's who she is. As she grows tall and strong, she moves closer to the mirror to see herself more deeply. Though her eyes see the image reflected, her thoughts and feelings tell her more about her self, and she comes to believe that what she thinks and feels is who she is. But a quiet voice within her **adjusts** her vision so that she can look deeper still into the mirror of her mind. She doesn't know it yet, but she seeks the Father in whose image she is made. She seeks the existence of her source and the source of her existence. She seeks God. And as her knowing sharpens and her inward sight focuses, she moves closer still to the mirror and in finality finds God's face looking at her and she recognizes it as her own. She is one of the sons God sees reflected in his Grand Universe mirror in finity.

Even now, as always, in response to existential choice the vaults of God's reality, though not asleep, awaken to mirror God's reflection. The Supreme, the living mirror which reflects the selves of God in finity, the universal grand in which is shown the strains of conscious self and sonship, begins its soul-filled symphony of light. Toward God, Supremacy reflects the finished fusion of a multiplicity of sons. Toward sons, Supremacy reflects a single face, the personality of God. Each son can see this fact of God as a reflection of her own; and God can see each face he sees as a reflection of his own. Supremacy is the looking glass in which potential actuals are fused into an infinite visage by the unity of will—the will of God above and the wills of God below.

And the existential unified diversity of God's eternal self-existence is, as always, one. At some unimaginable level of reality, God is alone in the universe...and yet....

When God looks in his mirror, does he actually see evolution in time, or is the self he sees reflected in the already-complete Supreme?

New Models of Mind, Order, & Chaos

by
Brendan O'Regan

O'Regan's work with the Institute of Noetic Sciences has involved him for over 12 years in the evaluation of brain/mind function and extraordinary human capacities.

[Editor's Note: Brendan O'Regan died of cancer at age 47 during the summer of 1992. The organizers of Scientific Symposium II are grateful to share this view of his life's work.]

The science that we have at any given time tends to edit reality for us and say this is real, or that's not real....

Good morning, everyone!

Well, this is a special moment. One of the goals in preparing the symposium was to find a scientist who wasn't necessarily a reader of the The Urantia Book *who would come speak to our group about his field. We've been very fortunate to actually meet this goal.*

Brendan O'Regan, from the Institute of Noetic Sciences, is here with us this morning. The Institute was formed in 1973, by Astronaut Edgar Mitchell, who was the sixth man on the moon. Brendan is the vice president for research at the Institute and he has been with them since 1975. He's been on the leading edge of science for 20 years. We are very fortunate that he's here with us today.

Right now he works with granting funds for research programs in mechanisms of healing, altruism and exceptional human abilities and causality. He previously worked at the Stanford Research Institute on a project called the Changing Images of Man, in which they were looking at how science drives the type of person in society. Previous to that, he worked with Buckminster Fuller. He was involved with a project on Fuller's book: Synergetics: Geometry of Thinking, *in which he was in charge of keeping track of new developments in science and how that would affect the contents of the book.*

Right now, he's involved in a Survey of Remission Research and an eight-part series on the healing mind that will be televised on PBS and BBC, and this is an international program. It's going to have information from, I think seven to ten different countries. Maybe he will go into that a little.

In his presentation this morning, Brendan will focus on ideas that suggest new ways of thinking about mind and the physical world and the correlation of the two. He will be showing us new concepts of how order and physics change our own concept of reality. So it is indeed my pleasure to introduce to you, from San Francisco, Brendan O'Regan.

* * *

Thank you. Let me just get a few things in order here. I'm not going to cover all of this, but it's a very interesting experience for me to be invited to talk to a group such as you. In essence, what I have been doing under the guise of working for different organizations and people for the last 20 years is really asking those sort of simple questions: Who are we? Why are we here? and, What is reality anyway? In attempting to do that, of course, we always want to try and avoid the pitfall of what I call the curmudgeon's definition of theology, which in theology is the effort to explain the unknowable in terms of the not-worth-knowing. We want to avoid the not-worth-knowing, but it's a curious thing that a society driven by a particular view of science, a particular view of reality, has very often tried to strip the meaning out of things. We end up with a view of things in terms of the not-worth-knowing sometimes.

The science that we have at any given time tends to edit reality for us and say this is real, or that's not real, as though they have some kind of inner track. The fact is that, in every society and in every culture, there have always been groups of people operating with an expanded view of the human being. I first encountered *The Urantia Book* over 20 years ago, and if ever I saw an expanded point of view about the human being, it certainly is in there. The question is, can we expand to take it all in? I couldn't, but I can only take it in small doses. Yet, you know, if you have a wide-angle lens and you are forced to work with something a little less wide angle, you can refer back quietly in the dark of night sometimes to what the wider angle view says and ask, "Well, is there any confirmation of this?"

Now you have among you people who have, in a much more detailed way, looked at that question. I haven't been consciously doing that, shall we say, but what I have been doing sometimes is referring back to this wider view. It's a curious process. If you begin to ask about an expanded view of the human being, or you begin to ask questions about who we are, you find that society is selling us short on a certain level of who we are. Then very curious things start developing in the society.

I'll give you an example: Melissa mentioned about the project, "Changing Images of Man," at Stanford Research Institute which I was working on during 1971-72. We were asked to look at *how did we get this view of the person* that says the National Science Foundation should fund *this* kind of research and not *that* kind of research, or that NIMH views health *this* way, not *that* way. Of course, at that time, the dominant view of the person was behaviorism, the whole idea that the mind was irrelevant, it's a black box. There was input, there was output. You concentrated on fixing the environment and everything else would magically rearrange

itself, which, of course, it didn't do. At that time we began to look at what would happen if an *expanded view of the person* came into science, if the mind re-entered, and consciousness re-entered? What would we have happening both in science and in the culture? We proposed that kind of view 20 years ago, with a lot of people saying you can't be serious, you know, is this really there? The argument then still remains part of the argument today, about the reality of paranormal powers, the reality of telepathy, the reality of psychic kinesis and these kinds of things.

I happened to be at Stanford Research Institute at the very time when the notorious, or nefarious, Uri Geller showed up there. It's interesting. If you talk to a group of scientists almost anywhere in the world today, they will say, "Oh, he was discredited, wasn't he?" It's pretty sure that a certain editing of that story took place, through a very aggressive campaign by skeptics who perceive themselves as the keepers of the truth and protectors of reality. They say, "Well, oh, that was all dismissed." Well, not really. It wasn't. It was driven underground.

The big irony for me is that, while I was at Stanford Research Institute, I was on one side of the equation. A few years later, I was working at Noetic Sciences, which funded the work on Uri at Stanford Research Institute, so I was on the other side of the equation. The great irony for us was that here was a program at a major research institute which we began with private money, but which rapidly became inaccessible to us because it was taken over by the military and became a classified program. The reason that you don't know what went on there, and the reason why the skeptics could successfully edit reality for you, was because the real information was kept classified. That remains the case, though we may be at a kind of an interesting time now, because initial classification of information is for 20 years. Well, it's 20 years now. Maybe some of this stuff will start to trickle out, or maybe adventurous people will file Freedom of Information Act suits in the right way, and start to pull out some of that information.

But, let's have a look at some of it that one *can* say. One of the reasons it's one of the great ironies, I suppose, is that the evidence and data for the best experiments suggesting an expanded capacity for the human being has to remain classified, because the verification of it really comes from surveillance satellites. Well, at that time, the cold war was in full swing. The Soviet Union was the great enemy, and of course, the great need was to know where their missile bases were, what they did in them, and so forth. A primary effort of the remote viewing work at Stanford at that time (remote viewing is a nice term for clairvoyance—you are seeing at a distance beyond shielded perception) was to describe missile bases in the Soviet Union. Where were they, and could that be done by remote viewing? I remember participating in the documentation of one of these experiments. (I had not signed anything about being in a classified domain so I am not violating anyone's agreements here by saying this.) I was not really an official participant. I was an excessively interested kind of nuisance who kept showing up and saying, "What's happening? How do I find out more about it?" I didn't really understand why, I didn't really know the whole military base behind it that was emerging at the time.

One of the things that happened was very interesting. We did an experiment where one of the subjects who was *not* Uri Geller would randomly pick coordinates on the map. Virtually, somebody would sort of stick a pin in the globe, and you would come up with certain degrees of longitude and latitude, down to minutes and seconds of arc. On this particular occasion, the subject was to describe the location that happened to be in the Bay Area and it happened to be an area that I thought I knew. He proceeded to describe the section of the bay between the Golden Gate Bridge, between the city and Marin County. I thought, "Oh well, this isn't going to count as an experiment, because we all know this area." Then he proceeded to describe some features, and I said, "Well that's not there. There is no runway by the Golden Gate Bridge. That's crazy. This is not there, and that is not there." I'd been driving past this thing for years and had never actually gone down into the Navy base area. And there *is* a runway next to the Golden Gate Bridge.

So I began to think, "Well, maybe there is something to this." Then another curious thing happened at a later experiment that I was not present for. He described a Soviet missile facility and produced a map—a little drawing of, well, the silos are here, and the buildings are here, and so forth. This was, in due course, sent off to Washington. They came back and confirmed that "this part's right and that part's right, but this part's wrong. There are no buildings in this part of the site." He said, "Oh yes, there are. Wait till you get your next satellite pictures." The following week, the next fly-by took place, and there were the buildings. They had been put up rather quickly. That kind of

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thing went on for a number of years and did suggest that there were expanded capacities that people could use. It still goes on, but nobody admits it.

So we have this very interesting problem. When reality is being edited by the power structure in an interesting way, you have to wonder about it.

Another version of this happened when I left Stanford after that project. I moved to England where I lectured for a year. I don't know if many of you know of the physicist, David Bohm, who is really one of the people proposing the idea that there is a certain kind of order, a nucleic order in reality, which is sort of a holographic concept that space and time are folded together in a way where properties of the whole system are contained in even the tiniest part. That's really an extrapolation metaphorically in physics from the idea of a hologram.

You are probably all pretty familiar at this point, that you can take a hologram, and let's say it's a 2 x 2 square photograph which contains these interference patterns on it. When you put a laser light through it, the image pops out. You can cut out a tiny little piece of the hologram, put the laser light through that tiny piece and the whole image comes back out. I thought if anybody could make sense of all this stuff with Uri Geller, surely David Bohm could.

I arranged for the two of them to meet each other in London. Part of it, I suppose, was that I was thinking maybe I imagined all this back at Stanford. Maybe we should just get a whole other group in another part of the world to start over, do it again, and see if it would still happen. (You do what you can to set up experiments and take the most rigorous approach that you can.)

There is a period of time in which the substance of the material is interfered with in some way, so that it no longer has the rigidity that it had....

So we set up a situation where John Halstead, who was then head of the Physics Department of Birkback College, one of the divisions of the University of London, would arrange for this experiment. David Bohm designed it, and Arthur Koestler came in to watch. Arthur Clarke happened to be in town, the man who wrote *2001*, and he came by. We tried to keep it from becoming a sort of celebrity dog-and-pony show.

The following sequence of events occurred and ought to have been in a journal, but thereby hangs the story I'm going to tell you. One of the interesting problems, of course, with someone like Uri Geller, is everyone was determined that he was faking it—that with sleight of hand when you weren't looking, he was taking the object, bending it, and bringing it back out. That's what the James Randi's of the world will insist takes place. They all refer to it as "metal bending." Well, of course, anyone who has seen the phenomenon first hand—up close, where it's happening in your own hand—knows that it's not metal bending at all. It's metal *softening*.

There is a period of time in which the substance of the material is interfered with in some way, so that it no longer has the rigidity that it had, and during that time either the weight of the end of a spoon, or residual stresses and strains in the object, can cause it to appear to move by itself. It's soft for about 30 seconds. I have held this kind of material. During that period, it's not hot; it's very slippery. It feels sort of spongy. You almost feel like you are putting your fingers through it in a strange kind of way.

So David Bohm thought, well, if we are really interfering at the core arrangement of matter in some way by this, maybe something will change that we don't normally observe. Normally the inertial mass and the gravitational mass of an object are the same. He decided to see if, under the conditions of this bizarre interference, the two were different.

He handed Uri a key, which was a master key to Birkback College, and he asked him to work on it. It was not the kind of thing Uri was likely to have in his pocket. This key had been weighed by the head of the physics department (whom you'd think could weigh a key) to 4 or 5 decimal places on a very fancy pan balance. Let's say, for description, that it weighed 12 grams; not very heavy. Uri got the key and did his thing, and was, I think, puzzled that Bohm wasn't really paying attention to how he did it. If Uri was doing something really paranormal, mass and gravitational mass of the object would diverge; but if he was just faking it, it would be the same. So there was a control built in that didn't depend on us observing how Uri did it. (That was a built-in thing I don't think you find skeptics thinking of.) But anyway, so the key in due course was now like this [indicating its modified shape], and was put back on the balance and it weighed 11 grams. (I'm rounding off the numbers.) There was this kind of puzzlement—you know, was there a piece of it missing? No, it was all there, but it didn't *weigh* the same. They said, "Oh," and they weighed it again every 10 minutes. I tell you that we weighed that thing for 2 hours, every 10 minutes, and put it back, put it back. They said, "Well, this is impossible. It must have been a mistake...it was probably 11 grams all along." You know...it just *couldn't be*. So everyone went home.

The key remained in the lab, locked up in a box. Many phone calls flying back and forth.

What do you think? What do I think? You know, everybody was talking on this business. They all came back in the next morning and—12 grams! Oh, probably was never 11 grams, you know.

Now we tried to write this up and we wrote down the detailed description of the experiment. The head of the physics department at Birkback normally would have entry to the better journals and certainly to *Nature* and *Science* and so forth. He knew John Maddox, the editor of *Nature*, personally. There was a physicist from Cambridge, Bowman Housted, and myself as the co-authors. The paper was sent in and we got a phone call saying we can't print this, this didn't happen! You can't say that this happened. You can only say that you had a difficulty observing these phenomena. You can write a piece about the difficulties of doing work in the area of paranormal research, but you cannot publish this data. So that's what got published in *Nature*. Nature, you know?

Now there are far worse things than this that happened. For example, John Halstead had the Cavendish Labs in Cambridge make a disk, a little flat disk of silicon carbide—a very tough substance. It's about the same toughness as a diamond. This was sealed in a glass tube. You could hold it in your hand, but you couldn't get at it without breaking the glass. Again, this is one of these situations where Geller was brought in without preparation. He didn't know what he was going to be handed. They worked on it, and he was trying to bend it. Well, that was an interesting idea, because of course, a substance like that wouldn't bend, anyway. I mean, that's not a property that it *has*.

Well, what ended up happening was that it looked like a bite was taken out of it. I mean, that area from the 6 o'clock to the 3 o'clock position of the circle was just *missing*. That piece was not rattling around inside the tube, it was just *gone*. I looked at John, and John looked at me and said, "Well we can't even call John Maddox about this." So at a certain level, then, I began to sort of think, "What am I getting into here? If I do observe more and more things that become more and more outside the realm of what I'm supposed to see...." Well of course, we know what you call people like that—they're crazy! You become the bearer of the unacceptable to a degree where you are considered to have lost it.

I very much rather carefully backpedalled from all this research as a result, because I could see what was going to happen here. Needless to say, it's very interesting. David Bohm has never said a word about this. You won't find any writing about it. John Halstead did write about it. He's written several books and discredited himself in the process. People shake their heads and say, "Well, you know, poor John. Not the same, you know." It's all very subtle, or maybe not so subtle on some occasions, but one wonders what we are doing to ourselves in our culture by this process.

I began to look later, then, at safer things. There were all kinds of other things that we did. I began to look at the phenomena around other kinds of mind—people with multiple personality for example—and this was an area that I really went into because of talking to other doctors. Every couple of years I attend the American Psychiatric Association meetings, just to keep in touch with what's going on.

Around 1984, I attended the meetings and ran into people like Dr. Frank Putnam at the National Institute of Mental Health, Bennett Braun at Rush Presbyterian Hospital in Chicago, and Richard Kluft from the University of Pennsylvania. These were all people who had patients who were multiple personalities. I began to hear some rather wild things that were true of these people: that they were allergic to a drug in one personality and not in another, that they had diabetes in one personality and not in another, that they needed eyeglass prescriptions in one personality and not in another. (Here is another entry point into the study of what we call the plasticity of the mind. There is an ability to modulate and control. It was a big rage at the beginning of the 1970's when biofeedback happened and we found we could alter brain waves and could alter blood pressure mentally by giving people feedback. We thought a whole new era had arrived which would develop an expanded human being, but that's been edited out, too. In fact, in many generations it's forgotten, but it's still sort of big news. I have people coming in to me at Noetics, not knowing how long I have been around this stuff, and saying, "Have you heard about this extraordinary thing? We can all modify our own brain waves." And I say, "Yes, I did it 20 years ago.")

In these cases of multiples, some other things go on that pose even more difficult problems. I thought I was making it simpler by keeping away from this other stuff. Little did I realize I was actually going to make it more difficult. What began to happen was that I had to take a completely different view of the human mind. It was a *completely different situation*. Unfortunately, there was a deeply sad part to this. Multiples by and large are all a phenomenon as a result of extreme physical abuse. They have

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all been abused physically and sexually over many years. These are people who have developed the mental resources to escape an appalling reality. That's really what's going on. They can't be there. Most of the time this is happening because of aberrations by parents with children. How do you process this reality wherein a parent, who is supposed to be the loving one, turns into a monster and starts doing these kinds of things?

I made a very deliberate choice in the reports that I wrote about this for the Institute, which are available from us. I decided that I would not write about that at all, because I did not want to even bring out into the culture an awareness of that sort of thing. Some of these people were really quite amazing, because they would have abilities in one personality that they didn't have in the others. One very famous case which you can read about is in a book called *The Minds of Billy Milligan*. I don't know if any of you have seen that book, but it's available in paperback. I spent time interviewing Cornelia Wilbur, who is one of the therapists called in. She also was the therapist for the woman described in the book, *Sybil*, which was a movie that Sally Field was in. I also interviewed David Cowl, who was a therapist for Billy Milligan.

Billy was a very interesting man. He is still an interesting man, though I think he's back in jail. The curious thing is that male multiples frequently are criminals in one form or another. I believe many of the serial killers in our prisons are multiples who become other people, do not know what they are doing, carry no memory of it, and have an activity that they carry out in a covert way. The female multiples, by the way, tend not to be involved in the criminal activity. It's a very interesting difference.

The interesting thing is that you say: "Well, what are we dealing with? Are we dealing with a mind breaking into pieces of itself, or are we dealing with a mind that does that and then attracts other things, other bodies of knowledge?"

In Billy's case, he had a personality (which I intend no pun on my own name here) called "Ragan." (I always hate it when my name is mispronounced that way). Anyway, Ragan (in his case) came from a functional name of a property. Ragan was "rage again." Ragan had superhuman strength. Billy was born and raised in Lancaster, Ohio, so he had a certain kind of cultural background. Ragan spoke fluent Serbo-Croatian, a language from a completely other part of the world, which he had not heard of. He had another personality named Arthur. Arthur spoke with an English accent, and believed that he was a doctor who grew up in England. Arthur had another ability which was that he could read and write fluent Arabic, which is all rather peculiar.

I came up to David Cowl and I said, "Is this really true about Billy?" He said, "Yes, but I don't want to talk about it. I have trouble enough getting these cases taken seriously on a psychiatric level, because the psychiatric profession doesn't really want this diagnosis to be real at all."

This is a big argument right now in what they call the DSM 3 which is *The Diagnostics and Statistical Manual* that defines psychiatric diagnoses. It's being rewritten at the moment by David Spiegel at Stanford and Frank Putnam at NIMH. A multiple is most likely to be misdiagnosed, on average seven times, and on average be classified as a schizophrenic or a borderline case or a temporal-lobe epilepsy case or various other kinds of things. The interesting thing is that you say: "Well, what are we dealing with? Are we dealing with a mind breaking into pieces of itself, or are we dealing with a mind that does that and then attracts other things, other bodies of knowledge?" Now that gets into a very peculiar business which is sort of akin to what we've all become rather familiar with in the culture of the phenomena of channeling, where people disassociate. This is the common denominator. There is a dissociative state, a trance state, a removal from the present input, the present perception, and a person then saying, "I am available." You know... "Anybody out there? I am available." Then they begin to manifest phenomena. The curious thing is that we don't really know how to conceptualize this at all in the Western model of the mind that is with us now.

It so happened that at the same time I was doing that work, I was also visiting Brazil and looking at healing practices. I don't know if any of you have been there or know about that culture, but it is one of the most fascinating mixes of races and ideas and metaphysical systems. That is one example of an entire culture driven by an expanded view of the person. They, of course, have these kinds of situations down there, but they conceptualize it quite differently. The Candobe and Ambonda religions are Afro-Brazilian religions that came in with the slaves that were brought from West Africa, and which then ultimately blended with the Amazonian Indians. It's a very curious mix. They have the whole thing figured out in a different way. They say it's all "externalized spirits." If you are behaving properly, you have incorporated good spirits; if you're behaving badly, you have incorporated bad spirits.

I remember at the University of Sao Paulo, a woman anthropologist telling me about a case she investigated. This was a fascinating story because if you think about what would happen to the same person in this country or this cul-

ture, versus what happened down there, and you put the two across from each other, you realize that we both are rational—both end up in a result that you would call healing. In this case, there was a woman who was normally a quiet, conservative mother of two in a poor suburb of Sao Paolo, a huge city, bigger than Manhattan. She would be found on the street, in a completely different personality, committing petty crimes and selling her body. She was taken to the mental hospital many times where she had been given shock treatments. She'd been given drugs, she'd been given this and that. Multiples don't respond to any of these treatments the same as any other person. You don't know which personality you are giving the drug to, and whether they are allergic to the drug or not.

The family realized this was about the seventh or eighth time that this had happened. They went to the hospital and they pleaded with them. They said, "Let us take her to the Ambonda center," which was the Afro-Brazilian religion that is predominant in the Sao Paolo area. Each of these centers is run by what they call either a Midisanto or Pidisanto, Mother of the Saint. That is a person who can incorporate—bring in—a spirit of great power. That's how they are chosen. They have that ability.

So the woman was brought in, in a strait jacket, and was laid in front of the Midisanto, who said, "Well, take off the strait jacket." But they said, "Oh, no, she's going to be violent." She said, "No, no, do it when I say." The Midisanto entered her form of prayer and called in her spirit, and simultaneously the woman lying struggling in the strait jacket just went completely limp, lying there quite peacefully. The Midisanto studied her for a while, and said, "Ah, there are seven different spirits fighting for control of this soul." They called in seven trained transmediums, who happened to be all women, who lie on the floor like spokes of a wheel with their heads to the center. One spirit is cast into each one, and this huge argument erupts. They all start shouting at each other, "Who the hell are you? How did you get in here? This is my body!" An enormous sort of fragmentation, but it's the first time that all of them can speak together.

Now if it was in this country, hypnosis would be used to draw them out one at a time. It would be videotaped and the record would be stored. The person would be gradually shown them and the amnestic barrier between the personalities would be slowly broken down. That's what we do here. That's what fusion of a multiple involves in the United States. Down there they get into a slightly more expanded process and they have seven people working, and they all do it together. There was a negotiation in which the Midisanto said, "Look, you have a choice. The destiny of this soul is not your destiny. You either help it or leave. What do you want to do?" They negotiated a truce. They all wanted to stay and they all wanted to see if they could help out, but they all wanted to come back and talk again in a month in case it wasn't working. The whole thing continued and they were all reincorporated back into the woman, who then reached consciousness and said, "What happened?" She had no memory of what was going on.

It's interesting...take the same phenomena in different cultures and look at it through different lenses and what do you get? You get very different outcomes sometimes. Of course, for a multiple, fusion is a terrifying process because it's a kind of dying. It's a kind of saying goodbye to a part of you. The interesting thing about them is that they will have personalities that are there for a particular purpose, to take the pain, for example.

I remember one case where a woman that I had met, one of the most extraordinary ones that I ever encountered, had one personality that was completely anesthetic, could feel no pain at all. She had to have some way to deal with that. Now what does that say if the mind, by a decision, can switch on and off throughout the whole body, the sensation of pain? That's quite amazing. I think we need to understand that, not in the way—the sad way—that it arrives in these people's lives, but in a more constructive kind of way.

Now there are other pieces to this. You could say, "Well, how does this ultimately lead us into thinking about reality in the physical sense as well?" There really are some completely new ways of thinking about mind and about information—not just in the person, but in time and space itself—that are beginning to correspond here, which is very, very interesting.

I think I'm partly looking at these phenomena through another lens, as it were, when I am looking at the phenomenon of spontaneous remission of cancer. We have the largest database in the world of medically reported cases of remissions from cancer and other major diseases, and these are cases where it could be lung cancer, breast cancer, melanoma, genito-urinary. The whole spectrum is represented. Normally, in a majority of people, these things progress to their demise, but in these cases something changes it, and a disease that

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...in these cases something changes it and a disease that is normally irreversible becomes reversible. A plasticity of some kind is present.

is normally irreversible becomes reversible. A plasticity of some kind is present. When we are looking at this, we are saying, "Wait a minute, we have left out a whole chapter." You ask yourself, what is it about these things that is in common with how the physicists are beginning to view reality?

Now, it is very popular to talk about the Tao of physics and holographic theories, and so on, but when you come right down to it, you have to ask about concepts of order and the rearrangement of order in the body. That's what's going on when a tumor is reabsorbed, reversed, removed. The order in the process, or the disorder in process, the loss in growth control that is a cancer, is that something comes in and says "No!" to it. These are sort of dis-continuities. These are forms of looking at order that are quite different. In chaos theory, which is peculiarly named, you have the recognition of a new kind of order in a process that previously looked disordered. It ends up really being a physics of information, and it's a physics of information that is at the level of the molecule and at the level of the body, and, I think, at the level of the mind in a strange kind of way. Some of that is beginning to get very, very interesting now.

The vacuum is supposed to mean nothingness, the absence of matter. Well, it may be the absence of matter, but it isn't the absence of energy. Even down at the level of what they call absolute zero temperature, there is still movement.

Our whole concept of energy, I think, is about to go through a big jolt of change. One of the things that is now beginning to happen is a re-examination of the idea of the vacuum. One of the things that got banished at the end of the last century was the idea that there was the ether, the all-permeating form of energy. That may be resurfacing in a new form, and what is interesting about it is that they have begun to look at the vacuum itself. The vacuum is supposed to mean nothingness, the absence of matter. Well, it may be the absence of matter, but it isn't the absence of energy. Even down at the level of what they call absolute zero temperature, there is still movement. There is still energy present, which is now called the zero point energy of the vacuum. The interesting thing is that when the physicists start calculating how much is there, it turns out to be enormous. It is as though we live in this dimensional interface where enormous forces are exactly poised and canceling out. If you just slightly push that off balance, an amazing amount of energy can be released.

The curious thing is that Sakarov (the famous Soviet physicist, who you have all heard of because of his political problems), who is really the father of the Soviet hydrogen bomb project, in 1951, wrote a paper that is ignored most of the time, except by a few people, in which he said, "What if gravity itself is not the product of huge masses, planets, moons, earths having fields that affect each other at a distance? What if it is in fact coming from fluctuations in the zero point energy of the vacuum itself, that it's down at that level that gravity is created?" That physics is now beginning to be pulled off the shelf, dusted off, and people are beginning to realize that it's a very viable way of thinking.

There are a series of papers that have appeared now in physical review letters. Ironically, the author of them is the same man who did the work on Uri Geller and the whole psychic-kinesis work at Stanford all those years ago. Those of us who internalized all that information 20 years ago, haven't forgotten what we saw. We're simply saying, is there a way to make sense of this in some new way? Can it come out into another form? The irony with this is that it may mean that new forms of energy devices are possible, involving the creation of fluctuations in the zero point energy of the vacuum.

Some of this is what's going on with the so-called cold-fusion research, which is not cold fusion—*never was* fusion. They misnamed it, and, of course, got into the whole editorial censorship of the scientific community for making a mistake on naming a phenomenon. There is a phenomenon. I was at a conference on all this at Stanford, a day-long meeting in which everybody called each other every name in the book. It's amazing how the ad hominem attacks, you know, and I said, "Look, can we get back to the phenomenon here?" There really are these bursts of energy that come out in these experiments, but they can't predict when they're coming.

Well, if I had more time, I could give you a whole story about why I think that is, but this sort of thing is going to shift our view. The other side of the coin is that there is another whole body of information that, again, we edit out—we say it's not real—and that's the whole area of the better research on extraterrestrial contact and UFO research. If you say to yourself, "Well all right, maybe these people are deluded, but let's look at the best cases." Let's look at the ones that the National Security Agency says it doesn't follow, doesn't research. *How is it that Freedom of Information suits have revealed 280 documents in National Security Agency in an area that they don't follow?* You go into the CIA, you go into NASA, you go into DOD, I mean...you know!

I have here with me a book that has not come out in this country. It just came out in England, which really pushes the limits altogether here. It's called *Alien Liaisons, the Ultimate Secret*. It's

looking at the whole idea that in fact we actually have in our possession crash examples of these technologies, and we are actually using some of this technology now. You say, "Well, what's really going on in Nevada, and how did the Stealth Bomber, the invisible aircraft, suddenly get into our hands, anyway?" There's all sorts of interesting stuff there.

What is going on in that research, according to the anecdotal stuff that comes out of it, is micro-control of gravity. It is the same thing: it's the zero point of energy of the vacuum. We are beginning to get a conceptual basis that would lead to a logical extrapolation for creating the kinds of phenomena that you would say are a part of a very advanced civilization.

Now I have spoken at some length with the man who has decided to come out and blow the whistle on some of that research. And I said to him, and I will end with this, "Bob, my guess is that we have brains and brain-mind link-ups that were designed to operate in stable gravity. And my guess is that if you were working on a device that could change the local gravitational field, it would distort your perception in a strange way, would it not?" There was a sort of a pause, and he said, "How did you know that?" I said, "I don't know it, I could just infer from everything else I have learned over the years that a technology that could in fact manipulate gravity would change the space-time fabric in the region in which it was operating, and that, if you turned up the power, it would become invisible, because the light coming from it would no longer travel in a straight line. It would bend around in a circle." He said, "Yes, that's what happens, and that's why it's so hard to work on this technology. When you switch it on, you can't see it." It also has an effect on the brain. The irony about UFO research is that you have people saying, "I thought I saw this, or it did this and then it disappeared." He points out that in any technology that is based on gravitational control, you are never seeing it as it actually is. You are only seeing a distorted picture of it. We all accept that what we see coming from the heavens is as they were many light years ago. We know that's not a real time image in the sky out there, so we accept that, but we don't deal with the fact that close in manipulation of space, time and light would actually affect our ability to perceive reality in the first place. So what if where we're heading here is really a place that only the mind itself can go? I think that's the exciting part of the next decade.

Thank you very much.

So what if where we're heading here is really a place that only the mind itself can go? I think that's the exciting part of the next decade.

Psychology as a Variety of Religious Experience

by
Marta Elders, Ph.D.

A student of The Urantia Book *for many years, Elders received a Ph.D. in counseling psychology. She is presently working at Washington Square Institute in New York City; Center for Hope in Darien, Connecticut; and with a national program for minority students.*

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Author's Note: While this talk was spoken extempore, it has been modified here to adjust to the written word.

* * *

Hello. (The audience responded.)

I am going to try an exercise here in the shifting of consciousness. First I greeted you and you greeted me back in the initial hello. And that is the way we frequently acknowledge one another, without too much thought beyond the fact that this is another person in front of me. Now this (demonstrating the hands placed together in front of the chest with the head briefly bowed in acknowledgment) is an indication of acknowledging the God within, a greeting frequently used in some gatherings. This behavior is symbolically quite different from the first hello. What I am looking at here, and what this exercise briefly demonstrates, is that where our consciousness is, where our awareness is, has a powerful impact on what we actually see and acknowledge in front of us. I'm sure many of you are familiar with the quote in *The Urantia Book* that it is our thoughts, not our feelings, that lead us Godward. The way we hold our thinking is where we truly live. The way we hold our thinking is how we can be with God.

I was asked to speak about psychology and what is happening in the field. But as I began my preparation I decided to focus on the psychological insights that are offered in *The Urantia Book*. It is noteworthy, however, that there is an increasing spiritual awareness in certain branches of psychology, particularly transpersonal psychology. And for those of you who are interested in pursuing thinkers who have addressed religion, spirituality, spiritual development, and consciousness from a psychological viewpoint, I would suggest reading Abraham Maslow, Carl Jung, Roberto Assagioli, Ken Wilbur, Michael Washburn, and George Kuhlewind.

But, I chose to talk about psychology from *The Urantia Book* viewpoint. And I have struggled for months trying to decide what I was going to say here today, how I was going to say it, and, in fact, I am still working on it. I took the word psychology literally; that is—the knowing of the soul, the psyche logos. And I believe that the "knowing of the soul" is where certain branches of psychology are heading. So what insights are available from *The Urantia Book* in this endeavor? What is the soul? How does one know one's soul? What is identity? What is self? What is material self? What is ego? What is material mind? How does mind function? How do these constructs and realities come into existence, interact, develop, and grow? In an attempt toward further understanding and to stimulate our soul awareness I am going to briefly describe our development as I understand it to be presented in *The Urantia Book*. As I do this, I invite each of you to bring your own lives present, to bring them present in your consciousness, to bring your sense of self into your awareness, who you think you are; and then see how the words and descriptions work in your life. Do the words fit with your experience? What do they mean in your life? Interestingly, words, in and of themselves, are meaningless. They are but symbols. It is only our experience that fills out the words and gives some meaning to us. So hopefully as you bring your own experience to the words there may be enrichment, movement, change, and whatever was there before may be a little different after.

Each of us began as an embryo. As we formed, a brain formed. Our material mind, our use of the adjutant minds is dependent on our brain capacity. The brain will be the hardware and the seven adjutant mind-spirits, which have been bestowed by the local universe Mother Spirit, will be the software. Whenever the brain begins to function, I believe the lower adjutants have become operative. The first five adjutants—intuition, understanding, courage, knowledge, and counsel—are considered animal, subhuman; the top two, worship and wisdom, are considered moral or human. After approximately nine months of gestation, a baby is born. It is my belief that sometime after birth but before attaining a year, personality is bestowed. Once personality has been bestowed on this living energy system, on our vehicle, there is the potential for self-consciousness. We can become aware that we are. I can know that I am. You can know that you are. And as this self-conscious being we form an identity. This identity that we construct, and are most likely living out of, can be referred to as a material self-identity and is usually how we describe who we are. For example, a child

might identify himself or herself as a good girl, a fast runner, superman, daddy's helper, a bad eater, etc. This material identity is very much determined and affected by our family, the community that we live in, the culture that we grow up in, what we see on TV, etc. This social and cultural context forms the frame in which we decide who we are. In our exploration, developmentally, we now have been bestowed with personality, have begun to construct a material self-identity, and are functioning mostly on the first five adjutant mind spirits.

In the process of becoming, of growing, we use the sixth adjutant, the spirit of worship, and at some subsequent time the seventh, the spirit of wisdom. With the use of the seventh adjutant, we make a moral decision. You and I choose something that is greater than the self; we make a decision that is truly moral. At that moment a Thought Adjuster is bestowed, a soul is initiated, and psychic circle growth begins. Essentially at this point we have a child developing along a material track that is establishing a material self-identity, a personhood, while simultaneously the soul, a quasi-spiritual reality, is germinating. Our soul is in embryonic form. This soul will be built and added to every time a moral decision is made, every time a supreme decision is made, every time truth is touched, every time beauty is touched, every time goodness is touched. There is this incredible fabric being woven inside our beings, that at some time will be our identity—this incredibly beautiful, exquisite creation that most of the time we don't even perceive. So, here we are in our lives making decisions in the material world and creating our souls.

To me psychic circle growth, which appears to be a stage process, is true human development, is true maturation on this planet. As this occurs the soul grows, there is increasing Adjuster attunement, there is mind attainment, and increasing personality status. Developmental theorists have perceived aspects of this growth and have contributed much to the psychological literature. Lawrence Kohlberg and Carol Gilligan have done work with moral development. James Fowler has pursued faith development. Erik Erikson has done work with ego development. I think each of these individuals has seen, from a particular perspective, the manifestations of this developmental process.

Again here we are in our lives, living in and from how we see ourselves, how we identify ourselves, mostly living in our ego identities, our material selves, as mother, father, teacher, student, driver, shopper, etc. When we answer the question "Who am I?" or "What am I doing?" we will be pointed toward where we live. We live in our thinking. When we greeted one another before we noticed where we live. That is the consciousness that we usually live in. In reality there seems to be two selves from which we can live—one the material self and the other the soul. Given that we usually live from the material self, how might we switch to living from our soul selves? How do we make that move? How do I make that move? How do you? Certainly we can talk about prayer, and we can talk about worship, and we can talk about being with God. But clearly, it is more than talking about—it is really living there.

In reality there seems to be two selves from which we can live—one the material self and the other the soul. Given that we usually live from the material self, how might we switch to living from our soul selves?

One of the struggles that I had in preparing for this talk was that when I started I believed that the ego self was not wanted, not desired. I believed that I needed to transcend it, to let go of it, to not be it. That's not quite where I am today. The sense that I have now is that this self in its *fullness* is what needs to be committed to God. The full self in its completeness, in its richness, in its maturity, in its full psychic circle growth, in its full mind mastery, is what we need to give our Father so that he can live through us, so that his love can flow through us in this incredible way. And yet, it remains seemingly difficult to shift from this material self to this soul identity. We are alerted to the perimeter of conflict in *The Urantia Book*. There we are warned about how hard the material mind will hold on to us, how we cling to our material self. Especially when we have done well. Especially when our lives are good. Especially when we have been successful. Why? Because we like it, we like how we feel about ourselves, we like how our life is working. We are happy. We know how to get things done. We know how to make our lives work. Why should we shift? In contrast, if we are in pain, if our lives are not working, if our lives are falling apart, then we are much more likely to reach out and get help. But when it is good, it's hard to do that.

...what might it be like to enter that fringe of conflict and move into our souls?

So what might it be like to enter that fringe of conflict and move into our souls? To me that is the place where we close our eyes and we open our hearts. That's the place where we take that leap of faith. I think that this place is oftentimes best described by our poets, by our artists, by our musicians. They have reached in, or taken that jump, and then tried to bring their experience back to a material description. There is a line in T.S. Eliot's "Four Quartets," where he describes this shift into the soul as: "where the darkness becomes the light, and the stillness, the dance." That's exquisite. The still-

This injunction works both in terms of our being with another person and our being open to truth when it is presented to us. And yet we hesitate. Why?

The sense that I have is that it's all in place, the only thing we sometimes do is get in the way—get in our own way.

ness, the dance, the shift, the darkness, the light. I think it is darkness that we go into initially, that we literally do close our eyes and open our eyes of faith. Jesus commented, "...you see not with the eye of faith, and you hear not with the understanding of the spirit," which says to me we need to see with the eye of faith, that's where we need to see from. We need to hear with the understanding of the spirit. When we are in a situation, can we take our consciousness, and can we look to see with the eye of faith? Can we listen to hear with the understanding of the spirit? This injunction works both in terms of our being with another person and our being open to truth when it is presented to us. And yet we hesitate. Why?

In *The Urantia Book* there is a statement that there are, among others, two attitudes or states that inhibit growth, one being ignorance and the other being prejudice. When I think of those attitudes in terms of my own thinking, they seem to be most active when I have a closed mind, a prejudicial mind, when I have prejudged a situation, when I think I know the way things are, when I have the answers, when my frame is closed and I am not looking to know more. These attitudes will keep me far away from that fringe of conflict, confident in my own limited thinking, and not hungry for growth. The emotions of anxiety, fear, envy, and jealousy will help maintain this position. And the wall will keep the inside from getting out and the outside from getting in. And I will remain isolated in my self, defended against the very truth I need. One time Ganid inquired of Jesus why he had not interacted with a certain man, and Jesus replied: "Ganid, the man was not hungry for truth. He was not dissatisfied with himself. He was not ready to ask for help, and the eyes of his mind were not open to receive light for the soul."

Take a moment to again bring your own life up, your own presentation of yourself to yourself, and let it just be there. What are your inhibitors? What are your stumbling blocks? Let yourself see what needs to be opened. Let yourself see what your fears are; see what is getting in your way, what you need to do to move into your soul, to commit to your Father.

I mentioned that one of the insights I had while preparing was this commitment of the selfhood from its own fullness. This was beautifully articulated when Jesus went up into the hills following his baptism and the two minds were made one. And I quote: "The results of this momentous season of meditation demonstrated conclusively that the divine mind has triumphantly and spiritually dominated the human intellect. The mind of man has become the mind of God from this time on, and [this is the part that caught my attention] though the selfhood of the mind of man is ever present [the selfhood, the being that had been developed, the man], always does the spiritualized human mind say, 'not my will, but your be done.'" It is as if our selfhood is almost embraced by our larger divinity. Another quote also expresses this: "The marks of human response to the religious impulse embrace the qualities of nobility and grandeur. The sincere religionist is conscious of universe citizenship, and is aware of making contact with sources of superhuman power. He is thrilled and energized with the assurance of belonging to a superior and ennobled fellowship of the sons of God. [And here's where I'd like to highlight.] The consciousness of self worth has become augmented by the stimulus of the quest for the highest universe objectives, supreme goals. The self has surrendered to the intriguing drive of an all-encompassing motivation which imposes self discipline, lessens emotion conflict, and makes mortal life truly worth living."

One wonders what else would promote this shift into a more divine awareness. One possibility from the Jesus Papers: "To become acquainted with one's brothers and sisters, to know their problems, and to learn to love them is the supreme experience of living." That is supremacy. Our souls are part of the Supreme. Our interactions with one another can be a Supreme experience, the experience of Supremacy. And then there is this suggestion, "Each race must become familiar with the thought of all races. Each nation must know the feelings of all nations. Ignorance breeds suspicion, and suspicion is incompatible with the essential attitude of sympathy and love."

For a moment, suppose we were able to shift our seat of identity from material self to the soul and live from that place, at least attempt to live from that place some of the time. Most likely we would be quite mature and would have realized much of the psychic circle growth. As we made decisions we would probably check them out with God first, using that as a grounding point, a centering place. What else? What else do we need to allow to happen? What is needed? The sense that I have is that it's all in place, the only thing we sometimes do is get in the way—get in our own way. In reality all we have to do is fully commit to this, all we have to do is wholeheartedly choose to do it. There is a statement that "the great problem of religious living consists in the task of unifying the soul powers of the personality by the

dominance of love." So, it's love. Where do we get love? Where does it go? What do we do with it?

"All true love is from God, and man receives the divine affection as he himself bestows this love upon his fellows." That's where it comes from, that's where it goes. It's the flow. It's the flow of the universe. It's the energy of the universe. "Love is dynamic, it can never be captured. It is alive, free, thrilling, and always moving. Man can never take the love of the Father and imprison it within his heart." Doesn't work. "The Father's love can become real to mortal man only by passing through that man's personality as he in turn bestows this love upon his fellows. The great circuit of love is from the Father, through the sons, to brothers, and hence to the Supreme. The love of the Father appears in the mortal personality by the ministry of the indwelling Adjuster. Such a God-knowing son reveals this love to his universe brethren and this fraternal affection is the essence of the love of the Supreme." It is supremacy. It is the coming into existence of the Supreme. It is the living of Supremacy. "Man can discover the Father in his heart, but he will have to search for the Supreme in the hearts of all other men. And when all creatures perfectly reveal the love of the Supreme, then will he become a universe actuality to all creatures."

And here we are, with our lives in front of us, left with the question, the great challenge: "Will you decide to personalize the experiencible value meanings of the cosmos into your own evolving selfhood?" And that, to me, is psychology, the knowing of the soul, the creating of the soul, as a variety of religious experience.

"All true love is from God, and man receives the divine affection as he himself bestows this love upon his fellows."