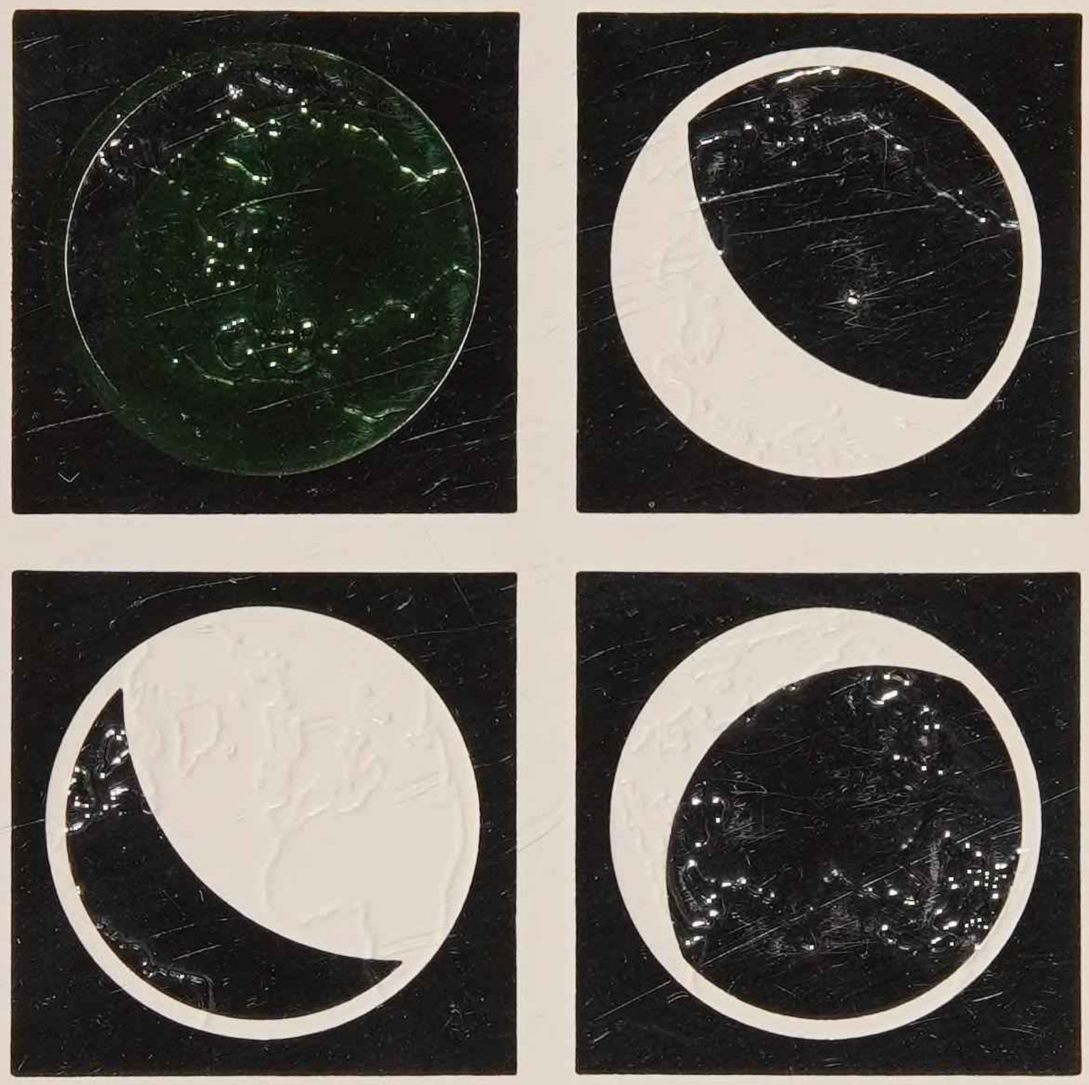
NOETIC SCIENCES REVIEW



SPRING 1988

Welcome

The Greater Self: New Frontiers in
Exceptional Abilities Research.

Each of the scientists and researchers that we have assembled to present to this conference are committed to the study of extraordinary human ability. They all work, at least some of their time, on the very edges of mainline science.
Some work in the proto-science of parapsychology,
while many others push established disciplines beyond the point
where their more timid colleagues shy away to seek a more comfortable, predictable, and profitable life in the center of mainline science.

Certainly we need qualified scientists working in the center of traditional fields, but there must also be some mechanism to support qualified researchers who are willing to enlarge science to include the full experience of humankind—body, mind, and soul. Any lesser vision of science would be incomplete because it would not open to discovery the full range of
humanity's physical, psychological and spiritual capacity.
There is no more responsible way to assist this process than
by supporting qualified researchers to seek knowledge in
why and how some men and some women demonstrate
exceptional human ability in many fields.

Why do we need to push to discover these extra dimensions of humanity? The primary reason is to increase the odds that we'll be able to solve some of the critical global problems. Science, like nature, is international,
and the fruits of discovery of humankind's hidden reserves
must be shared with the world. No one country is singly responsible for the problems of pollution, poverty, population, health care, or energy, and no one country can solve these problems by itself. This study may also help us face the greatest question and the greatest adventure of all: What actually happens when physical death occurs?

How do we proceed? One suggestion is to first determine
where we are—to develop a road map of past and current research on exceptional human abilities. Then an assessment of this knowledge can be made,
to inform science policy.
If necessary, research policies can be developed to establish
new priorities and programs designed to exploit the maximum human potential.
I'm heartened to see that within the science community there is presently a dialogue going on that may result in a broader, more open science that will be fully supportive of the type of research I think is necessary.

So I join in welcoming you as citizens of our country, and of the world,
to this conference on the The Greater Self.
We all have a vested interest in healing spaceship Earth, to use Bucky Fuller's old expression, and in providing a safe and loving existence to all of its passengers. Good luck.

—Senator Claiborne Pell

NOETIC SCIENCES REVIEW

Number 6 **Spring 1988**

The Institute of Noetic Sciences was founded in 1973 to support research and education on human consciousness. A tax-exempt, non-profit public foundation, the Institute's purposes are to broaden knowledge of the nature and potentials of mind and consciousness, and to apply that knowledge to the enhancement of the quality of life on the planet.

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Special Issue on the Exceptional Abilities Conference

Edited by Thomas J. Hurley III

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THE COVER

Our cover graphic represents Earth at four points in its orbit, corresponding to the seasonal equinoxes and solstices. Proceeding in a counterclockwise direction, Winter is at the upper right, followed by Spring, Summer and Autumn. Art by Kevin O'Farrell.

The Greater Self:
New Frontiers in Exceptional Abilities Research

by Thomas J. Hurley III

What is the greater self? The phrase has multiple layers of meaning. At one level, it beckons each of us as individuals to identify and develop our unique potential. We all have capacities for learning, growth, and achievement that we have not fully realized. Those with exceptional abilities remind us that we are capable of more than we ordinarily settle for, and provide clues on how better to develop essential capacities.

At another level, the phrase pertains to the "greater self" of humanity—and Gaia—as a whole. It reminds us that our individual achievements cannot occur without support from others, and that they always contribute to the whole. Today we are re-defining how individual societies and the Earth are related. Those who are boldly and conscientiously exploring the outer edges of human performance—and the heart of human experience—may give us new insights into the emerging forms of relationship, education, and ethics that will support healthy and fully-functioning communities.

One of the most fundamental challenges of our time may be to fashion the conditions for optimal development, and to help each person find meaning in the constructive expression of essential capacities. And one of the most important sources of new knowledge for this task might be research on exceptional abilities.

Human societies have always honored outstanding performers. These gifted individuals inspire us to excel, and they serve as role models with specific skills to teach. They are also pioneers, opening new realms for the expansion of human intelligence, creativity, and consciousness.

Yet we have never systematically studied outstanding performers, or exceptional abilities, to discover the keys to unlocking the potential in all of us. The time may be right for such an endeavor. Both social and scientific trends support it.

Photo by Harry Glixon: The Greater Self Conference, November 1987, Washington, DC.

Among these are deepening public interest in all forms of untapped ability—last year, a front-page story in *The New York Times* noted that human potential programs are the fastest-growing type of executive development program in business—and unprecedented scientific interest in the exceptional. It was to assess the latter, and its potential contributions to a new model of human potential, that the Institute of Noetic Sciences convened a public conference on new frontiers in exceptional abilities research last year.

On November 14 and 15, 1987, over nine hundred people gathered in the Departmental Auditorium in Washington, DC, for "The Greater Self", sponsored with help from the Fetzer Foundation. Senator (and Institute Board member) Claiborne Pell opened the meeting, and Institute founder Edgar D. Mitchell gave the opening keynote address. Two days of talks followed, rich with information from a dozen researchers who scientifically explore the far-reaching powers of the mind, body and spirit. Topics ranged from lightning calculation to spontaneous remission, and from child prodigies to creative altruism—the complete program of the conference is shown below. Exciting stories of individual achievement were told, but equally exciting were the speakers' broader goals: First, to find ways of applying their findings about specific individuals to all people; and, second, to ensure that information about individual excellence was understood in its broader contexts—the deep transformation of our ideas about human nature, and our growing awareness of responsibility to all of humanity and the Earth. Development and evolution—of the individual, of our modes of knowing, of human societies and humanity as a whole—were key themes throughout the conference.

This special issue of the *Noetic Sciences Review* is entirely devoted to proceedings from "The Greater Self". Excerpts from each of the presenters' talks have been included; hopefully they retain the integrity of the speakers' ideas. The complete proceedings, or complete copies of individual talks, will be available from the Institute later this spring. Readers who want more information can call or write us.

Thomas Hurley is Director of the Exceptional Abilities Program at the Institute of Noetic Sciences. He organized the Institute's 1987 conference on exceptional abilities in Washington, DC.

Program

Saturday

9:00 am	**Welcome** Senator Claiborne Pell, US Congress
9:30 am	**Perennial Puzzle of Untapped Potentials** Edgar D. Mitchell, Institute of Noetic Sciences
10:15 am	**Questions from the Audience**
10:30 am	**Break**
10:55 am	**Spontaneous Remission: Examples of Extraordinary Healing** Brendan O'Regan, Institute of Noetic Sciences
11:30 am	**The Neuropsychology of Special Talents** Loraine Obler, City University of New York
12:05 pm	**Questions from the Audience**
12:30 pm	**Lunch**
2:00 pm	**Meditation and the Transformations of Consciousness** Daniel Brown, Harvard University
2:35 pm	**Learning Mind/Body Control During Childhood** Karen Olness, Case-Western Reserve University
3:10 pm	**Questions from the Audience**
3:25 pm	**Break**
3:50 pm	**The Great Mental Calculators** Steven B. Smith, author
4:25 pm	**Lecture and Demonstration of "Lightning Calculation"** Hans Eberstark, Versoix, Switzerland
5:00 pm	**Questions from the Audience**
5:30 pm	**End of session**

Sunday

9:00 am	**Welcome**
9:10 am	**Prodigies and Human Potential** David Feldman, Tufts University
9:45 am	**Creative Lives and Creative Altruism** Howard Gruber, University of Geneva
10:20 am	**Questions from the Audience**
10:35 am	**Break**
11:00 am	**Peak Performance in Business** Charles Garfield, University of California
11:45 am	**Questions from the Audience**
12:00 pm	**Peak Performance Imagery Exercise** Produced by Syntropy Audio Images
12:30 pm	**Lunch**
2:00 pm	**Exceptional Abilities and the Channeling Process** Arthur Hastings, Institute for Transpersonal Psychology
2:35 pm	**Supernormal Functioning and the Future of the Body** Keith Thompson, Esalen Institute
3:10 pm	**Questions from the Audience**
3:25 pm	**Break**
3:50 pm	**Report on the Temple Award** Paul Temple, Institute of Noetic Sciences
4:25 pm	**Methodological Implications of Exceptional Abilities** Willis Harman, Institute of Noetic Sciences
5:00 pm	**Questions from the Audience**
5:30 pm	**End of Session**

The Perennial Puzzle of Untapped Potentials

photo by Harry Glixon

An excerpt from Edgar Mitchell

Since my space flight on Apollo XIV, I have taken the opportunity to be a student of history as well as a scientist. I've studied the history of science, philosophy, and theology in trying to understand what we are, where we are, what we're doing, and where we're going. I feel deeply it's a great period, an exciting period in which to be alive.

The idea for the Institute of Noetic Sciences was stimulated by the same type of questions all of us have. Senator Pell alluded to one of those questions earlier this morning: What happens at the point of death? It is certainly a burning question for all persons at some point in their life, and I'm sure always has been. There are thousands of similarly important questions—questions regarding who we are, where we came from, what is reality, and how do we deal with it—that need to be re-thought at this point in history. We have lived for several hundreds of years with one set of answers to them, and we thought those answers were valid. Suddenly we find out that maybe those answers we lived with aren't quite the right ones. Maybe they need adjustment in order to portray better the nature of our reality in the late twentieth century.

I think historians will conclude, within the next century or two, that the period of great turbulence we have experienced since World War II was a watershed event in human civilization. And I believe that space flight, as a metaphor for the scientific and technological revolution we're going through in this period, best symbolizes that watershed. Future historians will see our leaving Earth as being as significant, for the evolution of the species on this planet, as the first sea creatures crawling out onto land. We will see a marked change from this point forward.

What that change will be, and exactly where civilization is going, will be very hard to predict, if not impossible. But our perception of the processes involved in that evolution is changing very rapidly. For we live in time of enormous upheaval, a time in which the traditions, the mores, and the pat answers of the past are all in question.

Why should that be so? It really has nothing to do with space flight, by the way; space flight is simply a marker at this point in history. It has to do with a natural plateau that our science and technology has reached. The last three hundred years of modern science and technology has been a period in which we discovered and built upon knowledge of the physical universe. From that knowledge has come the technologies that we now enjoy and, in some cases, fear. These in turn promote tumultuousness, chaos, change, and acceleration of change. In this world where everything seems to be out of place at times, many of us are looking for deeper resources within ourselves to find a sense of peace, and of harmony, that causes life to make sense. But this is where science becomes problematic, for science doesn't provide that meaning.

There are many ways to categorize that problem. It's called the mind/body problem, for one. It's called the tension between science and religion, or between physical reality and spiritual reality. I refer to it as "Descartes' membrane". For since the time of philosopher René Descartes, we have been developing our ideas of the physical and the mental, of matter and divine nature, almost independently of each other. Before that time they were studied together as "natural philosophy".

At this point in history, the success of our physical science, and the power of technology, have created a world in which it is now very difficult to bring these two facets of ourselves together—our understanding and our being, if you will, or our physical and divine natures.

The Lens of Perception

One of the goals of science is total objectivity. We are trying to remove subjectivity from science. This is totally impossible, of course, since the only lens of our experience of reality is through this human organism—through the senses we possess—and that by its very nature makes description a subjective process. Thus we are deceiving ourselves, especially at the limits of our knowledge, if we insist upon the absolute rules of objectivity. Objectivity reduces to consensus. If enough of us say, "This is what we think is happening, and these are the rules by which it happens", others will say, "Well, that is a fairly objective way of looking at things." In reality, it's consensus, and it's deadly if you're interested in being on the cutting edge of new thinking about the human condition, or new thinking about the nature of reality as we move off this planet, start to see ourselves as universal beings in a huge universe, and start to explore everything else that is.

Many developments, and new knowledge in psychology, now force us to recognize the role our belief systems play in our lives. We recognize now that belief system is everything. We humans do not perceive reality except through the lens of our own senses, as modified by the belief system that we have shaped and hold. This is a revolutionary understanding, because science has consistently said to us, during the last three hundred years, that there is an absolute reality and it's up to us to discover what it is. We inherited the "scientific" notion of a fixed, static, and absolute universe that went on ad infinitum, and in which our task is to discover the nature of that universe. I think we can question those concepts—no, I will restate that—we must question those concepts, because they are not quite on the mark. We must recognize that we're involved in the universe, not outside of it, and that the universe in which we're involved is a "self-organizing universe" which is fundamentally intelligent in a way that we don't quite understand, and can't quite characterize in a way consistent with modern science.

Because of my experience in space, when I perceived the self-organizing intelligence of the Earth, I appreciate the magnificent variations in the human experience. I also appreciate what distinguishes us from our animal neighbors, and that is our capacity for self-reflection, the ability to think upon our thoughts. That self-reflection can form an infinite regress—we can think about our thinking, and we can think about ourselves thinking about our thinking, and think about ourselves thinking about ourselves thinking about our thinking, and so on ad infinitum.

That seems to be a uniquely human characteristic. And we can ask, What happens when you carry that infinite regress to its ultimate limit—when you get to infinity? I tried the experience, and discovered that you see the universe as white light. You back yourself right against the edges of reality and you see white light. What is that a metaphor for? It's a metaphor for energy, it's a metaphor for all reality. It is what some of our models of reality describe as the divine point of view. It is when all existence is light, harmonious, peaceful and self-existent without dynamics. The beauty of that is that human consciousness has the capability to go from the microscopic to the ultimate. We can shift our point of view from the smallest aspects of nature and matter to the most universal point of view. We have a complete spectrum of awareness available to consciousness.

In Human Hands

We humans seem to be unique in our capability to reach those points in consciousness—to experience, live, and describe them. What has this to do with human potential, or with extraordinary capabilities? I'm trying to point out the grander environment in which we humans exist, and are discovering that we exist, at this point in history. We're discovering the deeper truths about our nature, and reality, and they're not necessarily the absolutes we've always sought. I'm not sure those absolutes really exist. But we're finding ourselves to be far grander, and far more capable, than we ever thought we were.

All potential exists between the micro- and macrocosmic points of view. It's up to us to experience and determine how that is expressed. I firmly believe that if planet Earth, and human beings, will have a history past this point, that history is fully in human hands. At no point in human history is it as obvious as it is today that human activity shapes the future of planet Earth. We have in this century taken the stewardship of planet Earth into our own hands via our technology. That implies the need for responsibility, it implies the need for knowledge, and it implies the need for a sense of self greater than that needed at any other time in human history. To create these, and to ensure a future of harmony and peace for ourselves and our children, we must recognize the nature of the period through which we are passing.

Rethinking all of our positions on the nature of our reality wouldn't be necessary if life was working. It wouldn't be necessary if this planet was as we wished it to be—peaceful, harmonious, and filled with brotherly love, caring and mutual concern. That's what we all want, isn't it? But we're not getting it. We see the fighting and turmoil increase almost daily. So something is not working, and it's likely not working because we're not perceiving ourselves correctly. So if there is anything to be gained by shifting our perceptions, we'd better do it pretty quickly. Time seems to be running out.

I love this period in history. It is exciting because we can explore, see differently, and ask questions we've never asked before. Of course, there is pain that goes with that sometimes. We don't seem to grow very well without a little pain. The universe teaches us through trial and error. It makes us learn, sometimes harshly, when we've made a mistake or a choice for which there was no guidance. If you're on the cutting edge of thinking, pushing the frontiers, you have about a fifty-fifty chance of choosing correctly. That's the nature of an evolutionary universe.

I would like to close with a saying that those of you who have heard me speak have heard many times in the past. It helps me convey the notion that seems to be permeating our thinking at this point, and it always seems apropos. It is that "God sleeps in the minerals, awakens in plants, walks in animals, and thinks in man."

Astronaut Edgar Mitchell was pilot of the Apollo XIV Lunar Module and the sixth man to walk on the moon. In 1973 he founded and served as first President of the Institute of Noetic Sciences. He co-edited the anthology Psychic Explorations *in 1974.*

Spontaneous Remission: Studies of Self-Healing

An excerpt from Brendan O'Regan

Where is the Life we have lost in living?

Where is the wisdom we have lost in knowledge?

Where is the knowledge we have lost in information?

—T. S. Eliot

In our era, we have had a proliferation of certain kinds of information. But we have also had an absence of another kind of information. If we look at the normal distribution curve that seems to describe any human population, for example, we discover that the majority of people experience an average amount of sickness in their lives, and that a minority—on the bottom of the curve—are sicker than average. Yet there are also people at the top end of the curve who never seem to get sick at all, and we have never really researched them.

In fact, more than 10 years ago, when the Institute began an attempt to look at the superhealthy, we found that we didn't have the ability, in science, even to ask questions about people with extraordinary health, or people with an amazing ability to remain well. But even at that time we speculated that these people had something that operated better than the average, and began to think about a healing system.

We all know that science and medicine advanced when we discovered the integrity of systems in mind and body—the nervous system, the endocrine system, the circulatory system, and so forth. It is hard for us to remember the time when we didn't know that those were systems, or that they exist and function the way that they do. Another system that has emerged into view most recently is the immune system. It was not long ago that medical students, and medical texts, stated that we didn't know the function of the thymus gland, for example; yet today we know a great deal about it and its role in immunity, and the picture that has emerged of the immune system is a very complicated one.

At the Institute of Noetic Sciences, we're trying to extend knowledge yet one more stage, and to say that we have, in addition to all these other systems, a healing system: A system that can lie dormant unless challenged by disease, stress, or trauma—a system, in fact, that doesn't need to manifest unless it is challenged.

Placebo and Remission

There are a number of ways to think about the healing system. One is to examine those cases in which we are surprised by healing, such as when placebo effects occur. This effect occurs when a so-called sugar pill (or inert substance) is given to people in place of "real" treatment, and they proceed to get well anyway.

Another way is to study the phenomenon of spontaneous remission. For several years at the Institute, we have been examining the cases of people who were diagnosed with a terminal condition—with that confirmed through tests such as x-rays, biopsies, and histological examinations—and who, without treatment, have gone into remission from that normally life-threatening disease. They demonstrate an extraordinary capacity for self-repair and healing.

We discovered that there have only been three books written on spontaneous remission, two of which are out of print. In the history of medicine, there hasn't been any serious, protracted, or in-depth study of this phenomenon. One reason is that physicians who witness spontaneous remissions later say that perhaps the patients never really had this problem in the first place. They say, "It was misdiagnosed" and "the patients just recovered from something we would have expected them to recover from anyway, if we had diagnosed it correctly." That has been the majority view of remission, which in effect leaves the subject unstudied and ignored.

Thus, when physicians observe the unexpected remission, which goes against all their training and medical indoctrination, if you will, they have to be very courageous people to fly in the face of that conditioning and report it. When you start reading the cases that exist in the medical literature, for example, you'll find that physicians go through an amazing amount of overkill in documentation just because they know the climate in which this information will be received.

We decided to look through these reports on spontaneous remission as far back in time as we could find them. In two years, we have been able to assemble, in hard copy, almost 3,500 papers from over 830 medical journals in 20 different languages. So this phenomenon which supposedly doesn't exist certainly has a lot of people writing papers about it.

The cases that are the most well documented, from the point of view of physical aspects of the disease, tell you nothing whatever about the person who had this disease. You know nothing about who these people were, what they felt like,

what their life circumstances were, or what they did. That tells you something about the authors of these papers, and where they place their attention when treating people. As you'll see later, this is important.

One major set of cases in which remissions have occurred involves people who have had infections concurrently with their cancer. Whereas it had seemed that the disease, or cancer, had escaped the surveillance of the immune system up to that point, infections in some of these cases seemed to trigger the immune system, to wake it up. A fever response occurs, which slowly combats the infection, but the tumor also goes away. This was noted in the 1880s by William Coley, who then began administering bacterial infections to his patients to stimulate remissions. When he did this work—up until the early 1930s—he claimed that he could induce something like a 40% rate of remission by giving these bacterial infections. He died in 1934, and that whole approach virtually died with him. Chemotherapy, radiation and surgery became the treatments of choice.

Independently of knowing about Coley, we discovered that the literature contains many cases in which an infection was followed by remission of another disease. People to whom this has occurred would be very important to study because there is something happening in their immune systems that, today, we have the ability to track and monitor. There is vital research awaiting us when we find enough of these people.

The other side of the literature involves cases in which the people are described very well, but the details of their x-rays, diagnosis, and other diagnostic documentation are not good. Let me read you a couple of cases from a paper by Charles Weinstock, which appeared in the *Journal of the American Society of Psychosomatic Dentistry and Medicine* in 1977.

One example which I particularly enjoy involves: "A women of 52 who had carcinoma of the uterus, originating near or in the cervix. It had spread to the intestine, and death was expected within weeks, but her much-hated husband suddenly died. Today, a year and a half later, she is entirely well."

Here is another: "A young seminarian of 26 was treated primarily by another physician. He had an absent father and a sexually seductive schizophrenic mother, and in his 20s he had enormous problems about his sexuality. He developed an embryonal cell carcinoma of the testes with metastases to the lungs when he could neither let himself be ordained, nor marry the girl he loved. When he reached the point in psychotherapy where he could do both, the cancer disappeared. He has been well for 18 years now."

Deeper Mysteries

Any discussion of this, however brief, would be incomplete if we didn't also talk about spiritual healing. It is, of course, an even greater embarrassment for the medical profession. Yet if we really want to be open to discovering the natural history of disease and all the circumstances which affect its course, we have to open that door and look in.

I began my investigation of spiritual healing by looking at the medical records from Lourdes, simply because they offer the most organized body of data stretching back in time. There has been an international medical commission, in its modern form, investigating claims of healing at Lourdes since 1947, but the whole thing actually began in 1858. Of the 6,000 claims of extraordinary healing that have been made at Lourdes, only 64 have survived the medical commission's investigation and made it to the category of "miracle".

It's actually quite difficult to be a miracle. One of the first things that the commission does, when a claim is submitted, is reject it if they are aware that the claim involves a condition which has been known to go into spontaneous remission. For this group, spontaneous remission is natural, not supernatural. I thought that was just fine, because that would mean their rejects would be candidates for our remission database! On the other hand, the 64 cases of miraculous healing are very interesting.

One of those cases, finally validated in 1976, involved a man named Vittorio Michelli. He had a sarcoma of the pelvis and was in the military hospital for over a year in a full body cast. His leg was completely separated from the pelvis at the hip, because the bone was being eaten away by the cancer, and there was nothing they could do for him. It was an incurable condition that was progressing on a daily basis. Eventually he asked to be taken to Lourdes where he was bathed in water and instantly felt (as many of these people do, by the way) a sensation of electrical charge or heat running through his body. He immediately claimed to be well, but the doctors at Lourdes have seen so many cases with people saying things like that that they ignored him. Of course, he had arrived in a stretcher and full body cast. Two months later he was walking with the aid of a cane, and today he is alive and well and walks with only a slight limp.

It is interesting that when "Sixty Minutes" went to Lourdes recently, following three American families to whom nothing happened, they never bothered to interview the 15 people who are alive today because of their miraculous cures.

Of course, such cures are also occurring in other parts of the world. Recently I had contact with the Christian Science church, for example, which until quite recently has been very unwilling to discuss these things. Now they have published a book in which they talk about some of their cases. They are very interested in documenting them, and involving other doctors, which, again, are things they didn't do before.

Regenerative Medicine

We have neglected the regenerative factors in our development of medicine, and have looked too exclusively at the degenerative side. What are our natural abilities for recovering? If we can study people who have these abilities to an extraordinary degree, we can then learn what the body really wants to do when faced with illness and disease, and maybe learn to create treatments that augment the natural process.

Will we be able to find, when we talk to people in remission, something systematic about what they did in their lives to stimulate that? Attitudes may play an important role. For example, we heard about one woman who responded to an ad placed in the newspaper, seeking subjects for a study of remission. When the woman—a farmer's wife—came in, the interviewer asked her, "Well, how did you feel when you were told you had a terminal condition and that you had only six months to live?" The farmer's wife shrugged her shoulders and said, "That was his opinion." She

went on to explain how her husband, who is a farmer, always said, "You know, we've always got these experts coming from Washington, looking at the soil, and telling us what to do and how things should grow and so forth—but hell, we don't do any of that stuff, and the crops grow anyway!" And she had the same attitude about her illness. In this and other cases, we find evidence that people who remit have a very strong sense of self-sufficiency, and a central locus of control that is very internal. They feel in charge.

These cases say something about the mind/body relationship which we believe is strongly involved here. We probably don't know enough to say whether it's mind over matter, but there is some balance point—some mediating pathway—that is important here.

I think we're also going to learn that there are physical aspects to remission, and that some people's immune systems may have special capacities to recognize and fight disease. Perhaps one day Genentec will be cloning something we don't yet know exists. This has already happened in relation to the work of William Coley, because tumor necrosis factor was discovered as a result of studying how bacteria stimulate immune function. So we might have many more examples of that kind of discovery if we studied spontaneous remission more systematically.

We are simply missing this piece in medicine—the piece linking mind, body and spirit. And no matter how awkward and uncomfortable it makes members of the medical profession to look at spontaneous remission, that's something we should be willing to look at. We may be amazed at the kinds of regenerative capacities and abilities we find we have within ourselves.

Brendan O'Regan is Director of the Inner Mechanisms of the Healing Response Program at the Institute of Noetic Sciences, and Vice-President for Research there. He also directs the Spontaneous Remission Project, which houses the world's largest collection of medically-reported cases of spontaneous remission from cancer and other serious illnesses.

Neuropsychology and Talent

An excerpt from Loraine Obler

photo by Harry Glixon

In order to fully discover the brain-behavior relations underlying talent, the neuropsychologist follows several paths:

- Study of talented individuals whose talent has been modified—or not—as a result of circumscribed brain damage, in order to determine components of the talent and the gross brain areas underlying them.
- Analysis of neuropsychological test results of healthy individuals in whom talent stands out beside other nearly normal, or poorer than normal, performance abilities, in order to see which cognitive abilities we can associate with talent.
- Analysis of family constellations of talent and disability as they relate to cerebral lateralization and, potentially, to fetal and post-birth environments, in order to suggest genetic and biological features associated with talent.
- Postmortem neuropathological analysis of talented individuals who showed evidence of unusual cell patterning in order to see the neuroanatomical structures which serve as substrate to talent, and we must develop brain imaging techniques to permit a more refined appreciation of areas involved in various cognitive processes.
- Study of the neuropsychology of concentration and motivation.

The remarks which follow illustrate the second approach.

The standard neuropsychological approach to the study of exceptional ability has involved studying the behavioral deficits of people who have had specific areas of their brains damaged. For example, in his book *Frames of Mind: The Theory of Multiple Intelligences,* Howard Gardner reported on several visual artists who lost their abilities, or showed dramatic changes in their artistic styles, as the result of brain damage.

A second, newer approach to the study of talent reverses the standard methodology. Instead of looking at the components of deficient abilities against the background of abilities that have been spared, we analyze the exceptional ability against the background of merely normal abilities (in the case of the prodigy or artist), or against the background of less than normal abilities (in the case of the idiot savant).

Howard Gardner also uses this methodology in *Frames of Mind.* He reports, for example, on an autistic boy who can build sophisticated electrical devices but who doesn't communicate with humans at all, and on an autistic child who can recall

As the secrets of the brain basis for talent are revealed, we can teach children to appreciate the full range of abilities, and how to employ them to the advancement of humankind.

music heard only once, and then play it perfectly on the piano. Such individuals constitute a good argument for the fact that there are distinct abilities which are isolated intelligences—Gardner lists seven.

People who are not idiot savants should show similar patterns of development, in which one talent is magnified in relation to others. Gardner cites the poet who has exceptional abilities to use language as the paragon of linguistic intelligence. His prototypic example of exceptionally developed intrapersonal abilities, or intelligence, is a sensitive politician like Gandhi. As an example of highly developed spatial intelligence he points out that most individuals in the Caroline Islands have developed abilities to read the stars for navigation—an extremely sophisticated ability.

Now, calculating abilities can occur in idiot savants, in normal individuals, and in mathematical geniuses such as Gauss and Von Neumann. Had we only studied the mathematical genius with such skills, we might have spent a long time looking for the connection between math genius and calculating abilities. Once we recognize that some math geniuses and some autistic children have exceptional calculating ability, while others do not, we can appreciate that mathematical genius and calculating ability are likely to be separate skills that are organized independently in the brain.

In addition to demonstrating the independence of skills and talents, it's useful to conduct more detailed neuropsychological testing of prodigies and idiot savants in order to discover both the components of their talents and the other neurological skills that are dissociated from, or associated with, those talents. I'd like to examine one case in detail to illustrate this approach.

A Case Study

We studied a young man called CJ who is an exceptional second-language learner. He hadn't learned an additional language as a child, yet he had easily learned four languages after puberty. By this time, most humans have lost the ability to learn foreign languages with the proficiency of a native speaker, yet CJ had no accent and his syntax was like that of native speakers. We administered a series of neuropsychological tests to him, including tests of IQ, memory, visual and spatial skills, and language aptitude. Quantitative analysis of the tests demonstrated the sort of "scatter" that makes such a subject interesting. Had he done very well on *all* the tests, we would not be able to draw any conclusions about dissociation—or lack of relationship—of components.

CJ had an IQ of 107 on the Wexler Adult Intelligence Scale, so we could conclude that exceptional IQ is not crucial to exceptional second language learning ability. It may co-occur with it, but it can be dissociated. Also, on the modern language aptitude test, CJ performed in the highest percentiles on all of the independent subtests except the one that tested his ability to extract grammatical rules. We therefore deduce that such an ability may contribute to some good second language learning skills, but that it is not crucial to developing the proficiency of a native speaker. One can learn a language well but not be able to articulate the grammatical rules involved.

Qualitative analysis of CJ's responses on portions of the intelligence test demonstrated that he had a preference for responses which rely on form rather than meaning. For example, when asked what *work* and *play* have in common, CJ reported that they both have four letters. When asked what a poem and a statue had in common, he said, somewhat creatively, that they both have lines. Whether one considers such responses as excessively literal or excessively creative, they're not typical and he is scored down for them on the IQ test. Yet such a preference for form rather than meaning may be another component of CJ's second language learning ability.

Also of import is CJ's exceptional verbal memory. While he did not have good memory across the board—his memory for drawings was no better than normal—he had very good intermediate term memory for words. On the California Verbal Learning Test, for example, where the subject is asked to remember a list of 16 words, he performed normally under the standard test procedure and remembered about 15 out of the 16 words. Interestingly, he did not recall them in terms of their meaning, as most people do. Also, unlike normal individuals, CJ still recalled the majority of the words on the list after two weeks. This kind of verbal memory may be another component that supports CJ's language learning ability.

Such case studies are particularly good at showing dissociations. We can conclude, on the basis of a single study, that high IQ, as it is standardly measured, and the ability to abstract grammatical rules are not crucial for exceptional language learning. Evidence for association between certain abilities and the ability under examination is more circumstantial. While it makes sense that CJ's ability to remember words apart from their meaning categories, and a preference for form rather than function, are important in his language learning ability, it is also conceivable that the next talented second language learner studied will not have these skills. To demonstrate association we need large group studies.

Given the same 100 years of intense research that aphasia has enjoyed, many of the secrets of the brain basis for talent will no doubt be revealed to us. Then we must find a way to take advantage of these brain substrates—to teach children to develop the special abilities that they may have, to appreciate the full range of abilities, and to employ them to the advancement of all humankind.

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Noriko Ueno

Child Prodigies and the Development of Human Potential

An excerpt from David Feldman

Our understanding of long-term, evolutionary change—uniquely human evolutionary change—is especially poor. Our knowledge of prodigies, which should help us understand evolutionary change, is also poor. The child prodigy has not been formally studied in Western cultures. There are only three books on the subject, and they report on a total of 15 cases. Six of those cases were in the study that Lynn Goldsmith and I described in *Nature's Gambit*. The other nine cases were studied early in this century, outside the United States. So to say that little is known about child prodigies, in a formal sense, is a vast understatement—almost nothing is known.

Fortunately, we do know a little, and the following excerpts from *Nature's Gambit* will give you a feel for the phenomenon.

A truly exceptional prodigy in the visual arts is a little girl from China. We had been looking for a visual arts prodigy for several years (they're not common in this culture) and Yani is perhaps the first documented case to have been seen in the Western world. She comes from a family of artists, which is a very common finding in our research. The particular field in which the prodigy excels is often one in which the family has a history of achievement. Yani has done thousands of drawings and paintings, particularly of monkeys, which she loves. Even at age four or five, her work was extraordinarily sophisticated.

Another prodigy, Lorin Hollander, is now a highly successful concert pianist in his forties. The following excerpt is his own description of his, and his family's, realization that he was special. He wrote:

When I was three and half, I went with my father to a rehearsal and heard them play a violin quartet. I was profoundly moved by the music. When I came home, I wanted to somehow put down what I had heard. I found some drawing paper and began to draw spirals. My father asked me what I was doing, and I began to sing him back the piece which I remembered perfectly. I told him that I was trying to write it down. My father said "No, you silly boy, we already have a way of writing music," and he brought out the score to show me. I fell into the music. That is the only way to describe it. Within four minutes I knew the notes, the clefts, everything. A car horn sounded outside and just for fun my father asked me what note it was. I immediately answered F sharp. He took a spoon and clinked a glass—B flat, I told him. Then he and my mother realized they had a prodigy on their hands, and they started to run around to people, to find out what to do.

My third example of a prodigy is familiar to all of you, though perhaps not in this sense. Here is what Luke wrote in Chapter 2, Verses 41 to 50, of the New Testament:

Now his parents went to Jerusalem every year at the feast of the passover, and when he was twelve years old they went up to Jerusalem after the custom of the feast. And when they had fulfilled the days, as they returned, the child Jesus tarried behind in Jerusalem; and Joseph and his mother knew not of it. But they, supposing him to have been in the company, went the

day's journey; and they sought him among their kinsfolk and acquaintance, and when they found him not, they turned back again to Jerusalem, seeking him and it came to pass, that after three days they found him in the temple, sitting in the midst of the doctors, both hearing them, and asking them questions. And all that heard him were astonished at his understanding and answers. And when they saw him, they were amazed: and his mother said onto him, Son, why hast thou thus dealt with us? behold, thy father and I have sought thee sorrowing. And he said unto them, How is it that you sought me? Wist ye not that I must be about my Father's business? And they understood not the saying which he spake unto them. And he went down with them, and came to Nazareth, and was subject onto them: but his mother kept all these sayings in her heart.

In some cases, like this one, we may spend thousands of years trying to figure out what happened when a prodigy appears.

Finally, here are excerpts, from *Nature's Gambit*, about an extraordinary child named Adam. Adam was two-and-a-half years old when we met him; now he's almost 13. And while prodigies are usually very specific in the things they do, Adam's talents may be much broader. In the following excerpts, we see the emergence of his mathematical and musical abilities. These were written by his mother:

When Adam was ten months old, we were sitting in a tent in a Norwegian campground waiting, as one often does in Norway, for the rain to stop. He turned to us and said after a long pensive pause, "Please teach me logarithms. I understand the characteristic, but I don't understand about the mantissa." Well, fortunately for us, you can't fall very far off the floor of a tent. When we recovered—and it took a few minutes—one of us said, "We will, as soon as you learn arithmetic. Do you know what arithmetic is?" Adam, who was about two months away from reading, as far as we knew, answered, "Yes—addition, subtraction, multiplication, division and square root." My husband is a natural scientist; wherever else his brilliance lies he is competent in mathematics, not brilliant. I am a mathophobe. Where or how Adam aquired this information I have no idea.

The second excerpt concerns Adam's emergence in music:

At age one, the PBS broadcasts of the Boston Symphony would hold Adam spellbound for their entire length. He said that Seiji Ozawa was his favorite person in the whole world. Just about on his first birthday, he watched in rapture while a violinist played a prominent passage during one of those broadcasts. He said, "Oh, what is that?" I told him it was a violin and he asked to play one. I said that his body was not ready yet. He asked when it would be and, thinking of the Suzuki method, I told him when he was three he would be able to play the violin. The matter was not mentioned again until a few days before his third birthday. He came into the kitchen and said, "Fiona, I'm ready!" I said, "That's nice, dear. What are you ready for?" Adam reminded me that I told him he could play the violin when he was three. We began a long and frustrating search for the right teacher for him. He was composing in his own hand, had perfect pitch, and was fascinated by the music to which he was exposed.

Adam has focused in music for the time being, but that will not necessarily be what he does. He has written four symphonies, by last count, of which two or three have been recorded and performed symphonically.

Those cases give you a feel for this phenomenon. That is important because there is a lot of denial that the phenomenon really exists, and the denial persists because virtually no research has been done on it. It may be too early for empirical research. What we've done is more like anthropological field work. We spent a great deal of time with the children and their families, over a period of ten years, and then tried to develop some way of organizing the information we gathered. The children's talents are astounding—that is soon taken as a given, since it is an immediate and palpable reality—but trying to explain how and why such prodigious talent occurs, and how the prodigy develops, is a tremendous challenge. If it can be known, it will require a much broader framework than we have at present, and will certainly require that we do more than simply be dazzled by the talent.

Co-Incidence and Evolution

The excerpts above have focused on the child, which is appropriate since it's the child that catches our attention. But there is much more to the story of the prodigy than the child, and our contribution in *Nature's Gambit* was to offer a framework for figuring out what those other factors might be. We call the framework *co-incidence*, which means the co-occurrence of numerous events at roughly the same time, sustained over a long enough period to engage and then bring to expression the possibilities that are present in the child.

Understanding the process of co-incidence helps us to realize that in order to begin to comprehend the prodigy (or any other developmental situation), we have to understand not only the talents and abilities of the child but also the highly evolved domains within which he or she learns to express them. Co-incidence involves the concordance of the child with a field in a culture which values the capabilities that child has at that point in time. It also involves the family which is willing to put its resources into developing those capabilities, and the community's contribution of institutions, teachers and technologies to permit the development and expression of that capability. When YoYo Ma picks up a cello, he is being given a gift of incredible value by the rest of his culture—we all have a part in it.

The evolution of culture and individual involves the interplay of all those factors. It is an area of knowledge we know almost nothing about. Yet millennia-old traditions of meditation, and the centuries-old traditions of the sciences, and all of the arts will have to be brought to bear on understanding this process if, in Albert Einstein's words, we are to come to a fundamentally new way of thinking, which is essential if humanity is to survive.

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Teaching Mind/Body Skills to Children

An excerpt from Karen Olness

Akira Yokoyama

Children have a natural drive to learn many things, including the control of bodily functions. Those of us who work in this area think that perhaps childhood is the ideal time to begin teaching strategies of self-regulation, including strategies for self-regulating various autonomic controls.

We refer to our work as "cyberbiology". The prefix *cyber* is derived from the Greek word meaning "that which steers", or "helmsman". So cyberbiology refers to self-steering or self-regulatory abilities, including those related to self-regulation of physiology.

We have found, in both our laboratory and clinical work, that children are able to learn these therapeutic skills very quickly. We have evidence now that learning these skills is beneficial, and we believe that as we learn more about their clinical application, children will be able to apply them in many more areas than they do at present. Of course, our broader purpose in working with these children is to help them enjoy life, and to live as normally as possible. Children have a natural drive to learn, and a natural tendency to feel joy.

Exceptional Children

It is what we learned from these wonderful and exceptional children that inspired our systematic laboratory and clinical research program in the first place. One of these children was Kip, a ten-year-old boy with severe hemophilia. He was bound to a wheelchair or crutches because of frequent and severe bleeding in his joint spaces. Yet Kip was, and is, a remarkably bright and motivated young man. With his parents, he attended monthly group practice sessions we had for families of children with chronic problems such as cancer, rheumatoid arthritis, diabetes and hemophilia. There he learned self-regulation strategies involving relaxation and imagery, which he used to control pain and, as he said, "stop my bleeds". To stop his bleeding, he imagined that he had a small plane loaded with Factor 8, the missing factor in his clotting process, and that he was flying this plane through his blood vessels, dropping bombs of Factor 8 where there was bleeding. Kip was particularly skilled in using such self-regulation strategies, and as he grew older he developed skills in many other areas. He became a chess champion, and obtained his pilot's license while in high school. He did well as an exchange student in Norway, and is currently attending the Georgetown School of Foreign Service. He recently won a competitive scholarship from a navigators' group, and spent last summer studying refugee camps around the world.

Danny was another wonderful boy. He was born with a severe congenital problem which required multiple surgeries. Like many children who have to enter the hospital often, he was negatively conditioned and became afraid of it—afraid, in fact, of the nurses, physicians or anyone else who looked like they were related to them. His parents were very concerned that he was losing his sense of control, so they referred him to us to learn pain control through biofeedback. We started our task of teaching Danny that he could control his body functions by using a fingertip temperature monitor. When Danny realized that by thinking about sitting in the sun, he could make his temperature go up, he was really very pleased. Then one day Danny said to me, "What I want to know is, how does the thinking get from my brain to my hands?" Danny was four years old at that point, and I said, "I don't know, Danny, but maybe when you grow up you will be able to figure this out." Danny said, "I'm a pretty smart boy; probably I will." I certainly hope that Danny does.

In our work to date, children have demonstrated voluntary control over numerous autonomic processes. They have learned to control the temperature of

their fingertips, for instance, as well as such processes as galvanic skin resistance, blood pressure, respiration, auditory vocal potentials, transcutaneous tissue oxygen, salivary immunoglobulin production, and certain EEG responses. We teach these abilities in part by making the process interesting for the child. In one study, we taught children how to control galvanic skin resistance by using a monitor that gives them feedback in the form of a song as they altered their responses. They learned that by changing their thinking, and their mental imagery, they could control their body responses. It's important for children to learn this at an early age.

We emphasize to children that we are teaching them strategies that give them control when it's needed. And we emphasize that what we teach belongs to the child. This is important since much of our clinical work involves either habit problems related to chronic illnesses such as asthma, or pain problems. Regarding the latter, the children we work with suffer both from acute pain and from pain associated with diagnostic and treatment procedures they have to undergo for other illnesses. One boy who had leukemia said he very much preferred using his own ability to control pain to receiving morphine injections, because—as he said at the age of five—"When I get those shots, I can't play with my brother and sister."

We're very careful not to inflict our own imagery on children. We encourage them to use their innate imagery, which is usually much more creative than our own. Also, it's important to know that not everyone has good visual imagery. Some people have strong auditory imagery, some have better tactile imagery, and some have excellent olfactory, or scent, imagery. All of these can be used therapeutically. Whatever the case, we teach children strategies they design, not images we impose on them.

We always try to think in terms of therapeutic options, or adjuncts, using self-regulation strategies. For example, children who have problems with fecal incontinence—the inability to control bowel movements—learn to control their anal/rectal muscles by playing biofeedback games we've invented. We place a plastic card over the feedback oscilloscope, and the children imagine a trip to the moon, or play basketball. We've also developed a device, driven by a simple tape recorder, with which children can play their favorite stories or music as they learn to control these muscles. So there is tremendous scope for creative research and development here.

Future Research

How long do children retain these skills? Informally, we've followed many of them into adulthood and find that they both retain and use them. Yet we still have many questions about this work. We wonder, for example, how learning these skills relates to certain developmental stages, both in terms of learning styles and neuropsychology. What are the preferred ages and times to work with specific children? One certainly works very differently with a prodigy than with an average three-year-old. How should training be modified when learning disabilities, or other psychobiological predispositions, exist? Could we teach a child from a family prone to hypertension to control blood pressure through a computer game early in life? Is it possible that humans can control metabolic functions to make clinical differences? There is one study of teenagers with diabetes which indicates that this is possible. What are the spin-offs from learning such skills? I'd like to have our children feel positive about hospitals, and eliminate hospital experiences in which they feel emotionally crippled.

Sometimes a therapist has to humble himself or herself in order to get through to the kids. Yet they teach us a lot, so it's essential that we do. It is also very important that we value imagery more, and that we do not discourage children from using their naturally creative imaginations. With their help, we may find the unorthodox strategies we need to solve many of the questions we've raised.

Karen Olness, MD, is Professor of Pediatrics at Case-Western Reserve University and Director of the Division of General Academic Pediatrics at Rainbow Babies' and Children's Hospital in Cleveland, Ohio. She is an authority on the prevention, diagnosis and treatment of childhood emotional and physiological disorders through the use of self-hypnosis and mental imagery to regulate normally involuntary bodily processes. Her six books include Hypnosis *and* Hypnosis and Hypnotherapy With Children.

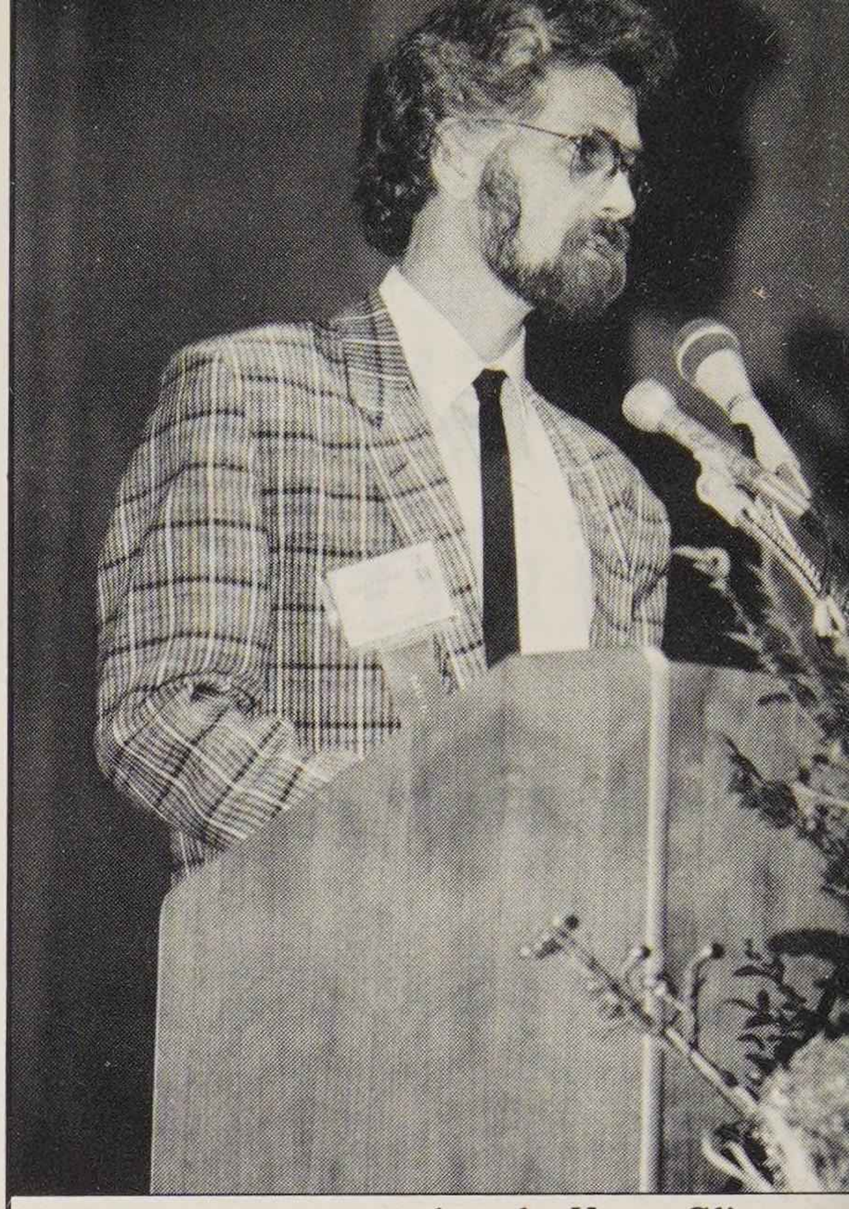


photo by Harry Glixon

We view meditation not in terms of the psychophysiological changes that accompany it, but as a form of attention and awareness training. It provides access to a path of adult development which is available to any who spend long hours training attention and awareness.

Those people who embark upon this path experience a sequence of altered states of consciousness. Our textual studies suggest that eighteen major changes in consciousness occur as one advances in meditation practice, and each of these is carefully described in the classical literature. These eighteen stages of meditation can be broken down into three major groups of practices—the preliminary practices, the concentrative practices, and the insight practices. One who makes it through all three stages experiences a permanent change in perception, known as enlightenment.

Early Stages of Practice

During the preliminary practices, the meditator intentionally changes the context of his everyday activities. He tries to reduce sensory stimuli, and to adopt new, simplified behavioral routines. He also creates a suitable context, usually a retreat, to begin awareness training.

Many meditators concentrate on the breath as a way to steady awareness while observing the internal world they discover through awareness training. Soon the meditator discovers that he is easily dis-

The Transformation of Consciousness in Meditation

An excerpt from Daniel Brown

tracted by incessant thoughts, fantasies, memories, emotions and often uncomfortable body states. The skilled meditator lets these thoughts and other contents in the stream of consciousness just pass. Eventually, through many hours, months, and years of practice, the meditator experiences a rearrangement in the stream of consciousness. Instead of the "buzzing, blooming confusion" initially experienced in the stream of consciousness, events in the inner world start to come forth in a very orderly, and much more regular, way.

The meditator who learns to stabilize awareness amidst these internal and external distractions then begins concentration practices. In these practices, the meditator typically focuses attention on a specific object of awareness—the movement of the breath, an internally generated sound such as a mantra, or a visual object like a stone or icon. The meditator adopts a stable posture, fixes the attention on this particular object, and returns awareness to the object whenever he is distracted. The goal is for attention to stay upon the object for longer and longer periods during meditation.

When one spends twenty hours a day in this practice, the mind eventually settles itself and another profound rearrangement of consciousness occurs. The field of concentration becomes reduced to a compact little "seed" which fills the perceptual field. This seed condenses information from the various sense systems—regardless of whether attention was initially concentrated on the breath, a mantra, or an icon—and usually emanates various lights, patterns and body sensations. Eventually, these perceptual patterns too disappear. What remains is the luminosity of the field of awareness. At that point the meditator enters a state of consciousness known as samadhi.

What's left if you don't think or perceive gross visual forms? The meditator in samadhi experiences a myriad of very quick but subtle movements of the mind, typically outside of ordinary awareness, such as a flow of light. According to the Tibetans, this subtle cognition is an unconscious backdrop to our construction of the ordinary world.

One of our studies provides some perspective on this. We asked meditators at different levels of accomplishment to respond to Rorschach cards. Ordinarily, people see these cards in terms of specific images—bats, butterflies, people, etc. Meditators who could sustain samadhi no longer projected images onto the Rorschach. They were fascinated with the colors, shape, and texture of the cards, but didn't have much ability to make specific forms or percepts out of them. During samadhi, in other words, people see Rorschachs reduced to their pure perceptual features.

What this research supports is the yogic claim that once the meditator stabilizes samadhi, he gains voluntary control over perceptual processing. The purpose of such control is not simply to stop the mind, however, but to stabilize a new point of observation, and thus to gain insight into the processes by which the self and the world are constructed in ordinary perception.

Beyond Samadhi

After stabilizing samadhi, the meditator begins the insight series of meditations. He now takes the flow of light—subtle cognition itself—as the object of awareness. This is called "concentration without support" because there is no longer a thought or image to focus attention on. At first the meditator becomes aware of moment-by-moment changes in the flow of light. He also notices that the ordinary self-representation introduces a subtle biasing factor into moment-by-moment perception. He then begins a high-speed search for the source of this self-representation within the subtle changes which occur during samadhi. As a result of this inquiry, a profound rearrangement in the stream of consciousness once again occurs. The ordinary self-representation drops away, leaving direct awareness of self as the new point of observation for ongoing meditation experience.

At some point the meditator loses interest in this content and becomes more interested in the way that events come forth in the mind. The meditator notices the exact moment that some event occurs in the stream of consciousness, its brief duration, and the exact moment it disappears, before the next moment comes. These moments in the mind become more and more luminous until finally the meditator experiences a great white light.

Again, one of our studies tends to corroborate this claim. In it, we studied our most advanced subjects with the tachistoscope, or T-scope (a device for the experimental study of perception which presents information in very brief flashes). We compared seven experienced meditators with non-meditators who acted as if they had sophisticated knowledge of perceptual processes. When the most advanced meditators viewed two light flashes presented rapidly in succession, at the visual threshold, they correctly distinguished two flashes. Their accuracy in doing this was itself notable, since most

The meditative traditions provide a way of focusing on everyday unhappiness and finding a way out.

untrained people will perceive but a single flash when the interval between them is short, but the meditators demonstrated an even greater sophistication. They saw seven distinct events—the moment of the rising of the first flash, its brief duration, the moment it went out of existence, the gap in between, the moment of the rising of the second flash, its brief duration, and the moment it went out of existence—all of which took less than 100 milliseconds of clock time. The meditators were aware of preattentional processes that are usually outside of awareness. They were clearly perceiving how events come forth in the mind, moment by moment.

As their skill in observing the mind in this new domain matures, another profound shift eventually occurs.

The meditator notices events in the mind flashing in and out of awareness very quickly. This experience is called a "rising and passing wave" samadhi, and it represents insight into the temporal structure of information processing. At that point, the meditator is given special instructions to actually crack the code of the time-space structure of ordinary perception. Those who do these special meditations enter a new and transcendent dimension known as extraordinary samadhi. During the extraordinary samadhi, all potential events of the universe, and all their potential interconnections, come forth simultaneously. The stream of consciousness is no longer successive, and awareness is said to pervade the vast interconnectedness of the potential universe simultaneously.

Characteristics of Enlightenment

Finally, with continuing practice, awareness "turns back upon itself" and the meditator experiences enlightenment. Enlightenment is defined in terms of three instantaneous shifts in awareness. During the first, basis enlightenment, all the activity in the content of the mind drops suddenly away. All that remains is vast awareness. Immediately following this shift, all the potential activity of the interconnected universe comes forth. Awareness pervades the whole of this potential universe in the experience of path enlightenment. Finally, fruition enlightenment occurs, and the stream of consciousness is permanently rearranged. The ordinary stream of consciousness then returns, but the meditator is aware that a profound and durable change has taken place. He then develops voluntary control over this enlightened state of awareness.

Enlightenment is essentially a change in the quality of awareness. Most of us react, either subtly or grossly, to every event in the stream of consciousness. We either try to hold on to what enters awareness, or we try to push it away. We have lapses in awareness. The experience of enlightenment, however, involves cutting off the roots of that subtle reactivity. The enlightened meditator no longer has lapses in awareness, nor any subtle reactivity. Awareness looks upon the events of the stream of consciousness without being affected by them ever again. So the meditator finds the middle ground between the extremes of having to keep something out of awareness—psychological defense—and a compulsion to react.

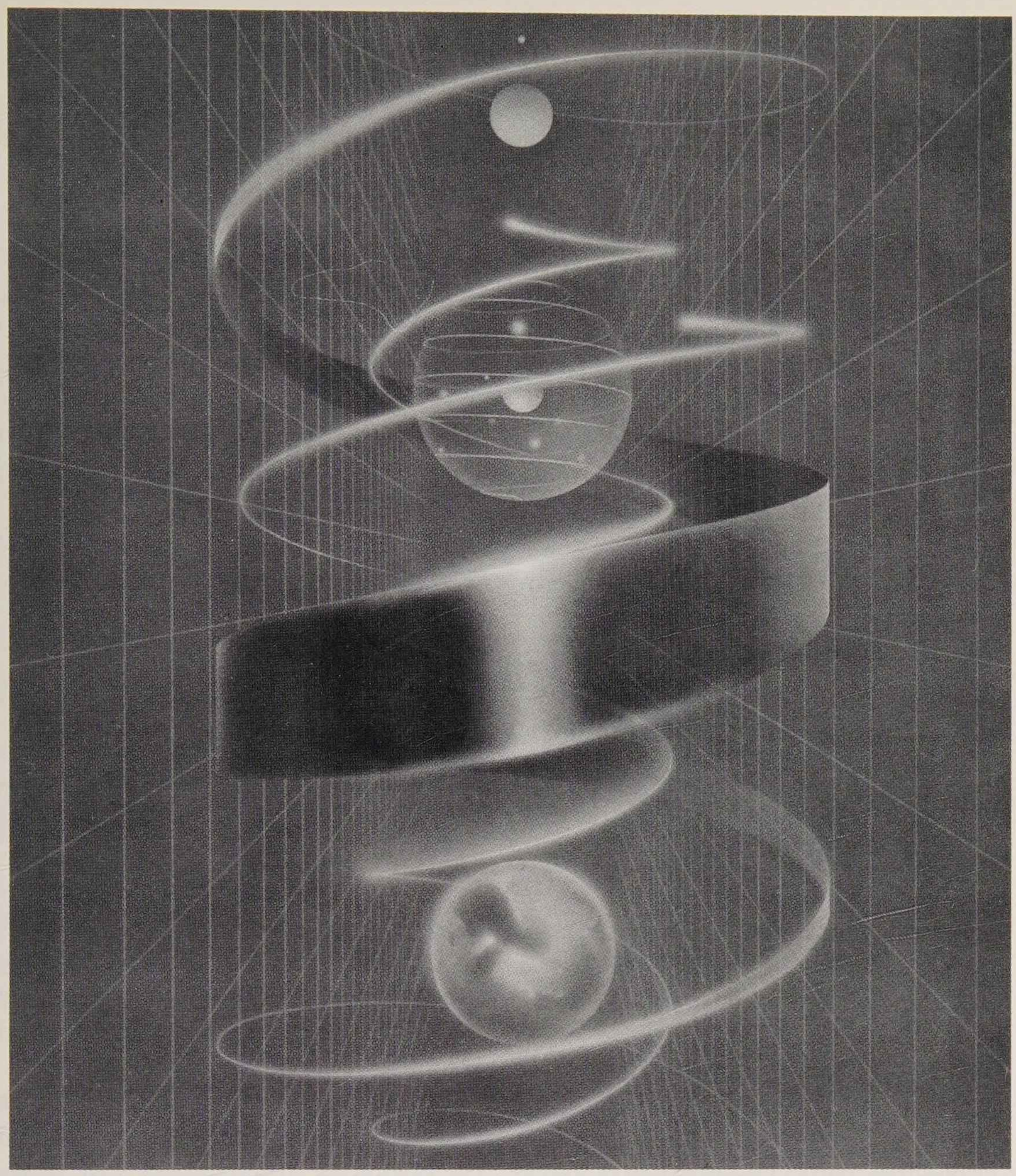
There are also higher stages of enlightenment, according to the Buddhist tradition, and in them one experiences further profound alterations in the stream of consciousness. The roots of suffering, and the experience of suffering, totally disappear. In our research, we studied meditators who had reached the first stage of enlightenment as well as those who had progressed to the higher stages—the masters.

Our Rorschach results with the masters group were most unusual. The meditation masters used the Rorschach as an occasion to teach us about states of mind and the path of meditation. While their responses to each card were appropriate, they were more interested in teaching than in the cards or responses per se. They would also integrate their responses across all ten cards, which in itself is an extraordinary feat. We found no evidence of intrapsychic conflict in any of the Rorshachs from the masters or great saints in the traditions we studied.

Freud once said that the most we could hope for from psychoanalysis or psychotherapy was to replace neurotic conflict with everyday unhappiness. The meditative traditions take up where he left off. They provide a method for focusing on everyday unhappiness and finding a way out. The way involves training attention so that you gain voluntary control over perceptual processes and, eventually, undercut the roots of reactivity in ordinary (and biased) perception. This eliminates suffering, since the basis of suffering was that reactivity. You thus become a master of your own mind and experience.

Enlightenment, or even the experience of extraordinary samadhi, before enlightenment, has profound ethical consequences. The meditator realizes the interconnection of every moment of awareness, and every action, with everything else in the universe. Once that is seen and felt deeply, one can't help but be ethical. Meditation leads to compassion towards others. This leads to a conclusion quite different than Freud's—it shows us a way for civilization to grow beyond its discontents.

Daniel P. Brown, PhD, is Director of Psychology Training and Clinical Services and Director of Behavioral Medicine at Cambridge Hospital, as well as Assistant Professor of Psychology at Harvard Medical School. He is co-author of Transformations of Consciousness, Hypnotherapy and Hypnoanalysis *and* Hypnosis and Behavioral Medicine.



Tetsu Uehara

Hidden Energies: The Mind of the Mental Calculator

An excerpt from Steven Smith

Calculating prodigies, sometimes called "lightning calculators", are those exceedingly rare individuals with an astounding capacity for mental calculation. They range from the retarded, whose calculation may be limited to problems associated with the calendar, to transcendent geniuses like Karl Friedrich Gauss, perhaps the greatest mathematician in history. Typically, however, they are gifted people with a range of interests. Hans Eberstark, the world-class lightning calculator present at The Greater Self conference, is such an individual.

Calculator Zerah Colburn

To provide you with some idea of the talents and methods of calculating prodigies, and to personalize the subject somewhat, I would like to make a brief sojourn into the life and mind of Zerah Colburn.

Zerah was born in Cabot, Vermont, on September 1, 1804, to a poor farming family. Like his father and two of his brothers, he was born with 24 digits, six on each hand and foot. Apart from this bodily peculiarity, he seemed a normal boy, the least precocious of any of the Colburn children.

In early August of 1810, Abia Colburn was working at a joiner's bench. His son, Zerah, not quite six years old, was playing among the wood shavings and talking to himself: "Four times six are twenty-four, five times seven are thirty-five, six times eight are forty-eight..." Where could he have learned thc multiplication table, Abia wondered. He supposed he had picked up a smattering from the older children. He tested Zerah and to his surprise found that his son knew the multiplication table perfectly. Abia must have been a man of some imagination for he now put to Zerah a question that was to change their lives utterly: "What are thirteen times ninety-seven?" "Twelve hundred and sixty-one," came the reply.

Mr. Colburn was often to say, afterward, "I could not have been more surprised if someone had risen out of the earth and stood erect before me."

Four months after the discovery of his talent, Zerah and his father had made their way to Boston, where he answered the following questions:

"How many seconds in 2000 years?" "730,000 days, 1,051,200,000 minutes, 63,072,000,000 seconds."

"Allowing that a clock strikes 156 times in 1 day, how many times will it strike in 2000 years?" "113,880,000 times."

"What is 1449 times itself?" "2,099,601."

"Supposing I have a corn field, in which are 7 acres, having 17 rows to each acre; 64 hills to each row; 8 ears on a hill, and 150 kernels on an ear; how many kernels on the corn field?" "9,139,200."

Such problems are not answered without thought. Mental calculation requires work, and the time of solution is proportional to the difficulty of the prob-

"The human mind is a machine of gigantic powers, and we may well conclude that . . . few of its energies are developed."

—Zerah Colburn

lem. Professor MacNeven, who observed Zerah in New York City the following Spring, remarked: "...very difficult questions fatigue him, and he frequently asks you not to give him such hard sums. While he is making out the answer, you perceive, by his countenance, how much his mind labours. His eye glistens, and his features contract."

It is little wonder that Zerah was regarded with reverential awe, particularly in an age before calculating machines. How could an untutored child quickly solve in his head a problem it had taken the questioner considerable time to calculate and verify? Today we concoct problems with electronic calculators, where the only issue is whether the right buttons are punched in the right order. To gain an appreciation of the feats of calculating prodigies, one should work the problems on paper.

Two Types of Calculators

Calculating prodigies commonly fall into one of two categories: visual or auditory. Visual calculators "see" numbers in their mind's eye, often in their own handwriting. For example, Salo Finkelstein, a Polish calculator who visited the United States in the 1930s, always saw numbers in his own handwriting regardless of the mode of presentation. The numbers looked as though they had been written on a freshly washed blackboard, 5 to 7 centimeters in height, and 35 to 40 centimeters from his eyes. Although he could obtain images with his eyes closed he preferred to have them open, since it aided him in "seeing" the numbers. He liked to have a projection ground, such as a blackboard, on which to imagine the numbers. He preferred this to be a homogeneous gray, corresponding to retinal gray in brightness. If the projection ground were moved away from him, the numbers would grow smaller, just as if they were actually registered on that surface.

Auditory calculators "hear" numbers, rather than "see" them. There are certain typical peculiarities of auditory calculators: They mutter while calculating. They calculate from left to right. They are self-taught. They are precocious; most begin calculating before learning to read or write.

Auditory prodigies frequently have neurological peculiarities. They are often hyperactive. A couple appear to have suffered from prosopagnosia — the inability to recognize faces. Two, Zerah Colburn and an Indian calculator named Arumogam, had extra digits. Several suffered from tics and twitches. A number have been retarded.

The source of such peculiarities seems to vary. Some, such as supernumerary digits, are certainly genetic, but in other cases the peculiarities appear to stem from disease or injury. This is certainly an area that deserves further exploration.

The Language of Numbers

I believe that prodigious ability for mental calculation is potentially present in all children, and to a lesser extent in adults, exactly analogous to the ability of adults and children to learn languages. What is usually absent is the interest required to stimulate the acquisition and internalizing of the methods of calculation. I, for example, am quite familiar with these methods, but I am not motivated to practice them and so soon forget them. I then have to look them up or figure them out all over again.

Any child can learn to speak Hopi, or Norwegian, or Nahuatl, or Ibo, or Cantonese—all that is required is that it be the language that surrounds the child. But children are not surrounded by people doing mental calculation as they are by people talking. Only a very unusual child avidly pursues an activity for which there is no peer support or adult encouragement. If mental calculation had as many devotees as skate-boarding, calculating prodigies would be far less rare.

Isolated children need friends, and calculating prodigies have made numbers their friends. Wim Klein, a very great mental calculator, died tragically last year in Amsterdam. He told me: "Numbers are friends for me, more or less. It doesn't mean the same for you, does it, 3,844? For you it's just a three and an eight and a four and a four. But I say, 'Hi, 62 squared'." Other calculators have made similar remarks. George Parker Bidder, Colburn's English contemporary, wrote of learning to count, by ones and then by tens: "This may appear to you a simple process, but I attach the utmost importance to it, because it made me perfectly familiar with numbers up to 100; they became as it were my friends, and I knew all their relations and acquaintances."

For a calculating prodigy, discovering new meanings for words is a fascinating matter. In fact, calculators commonly speak of the meanings of numbers, by which they refer to various arithmetical properties.

A child must have extensive exposure to a language in order to learn it. Mental calculation is different—all that is required is a knowledge of counting; the standard arithmetic operations can be deduced. A number of calculating prodigies were shepherds, an occupation which requires the ability to count and provides plenty of uninterrupted time to kill. All you have to do is to discover that it is faster to count sheep in pairs rather than singly and you have discovered multiplication. Soon what began as a practical time saver becomes an amusement, even an obsession. With constant practice calculating becomes second nature, as easy as talking in one's native tongue.

Steven B. Smith, PhD, is author of The Great Mental Calculators: The Psychology, Methods and Lives of Calculating Prodigies. *Smith taught linguistics at UCLA and the University of California at Riverside, and has written technical papers on prodigies in mathematics and linguistics. He also consults with computer software firms, for whom he designs programs to translate languages.*

photo by Harry Glixon

Peak Performers in Business

An excerpt from Charles Garfield

If you study, over a 20-year period, the Lee Iacoccas of the world, and the Ted Turners of the world, and many of their counterparts in science, sports, and the arts, you learn there are no secret steps to instant success. Yet we're all capable of far more than we ever dreamed. That's one of the reasons to study peak performance: It's important to you personally, and to the nation and Earth.

The greatest individual accomplishment in the history of sport is Bob Beman's long jump in the 1968 Olympic games. Now, long jumpers are phenomenal athletes, and in that sport even a gain of an inch is a tremendous feat. You break the world record by one inch, and your picture goes on the cover of Sports Illustrated. You are a star. Well, in 1968 Bob Beman broke the world long-jump record by almost two feet. What do you say to the guy after that? "Nice going"? Anybody with any sense said, "What in the world was that?" Beman said, "I don't know, but I'm retiring." You just don't plan to break the world long-jump record by two feet.

Here is the challenge: We are capable of more than Beman. I mean that literally —not philosophically, theoretically or metaphysically.

My introduction to peak performance happened in the context of my very first job. I was trained as a mathematician, and was going to be a scientist. With that in mind, I joined a team involved in realizing what is generally regarded as one of the human species' greatest technological achievements—the Apollo XI mission to the moon.

From my first day on that job, I started hearing stories of people doing the best work in their lives, better work than they had ever done before. I later found, as part of the assessment team, that we were talking about tens of thousands of people, not just a few. I asked why, but nobody could tell me. So I kept trying to figure it out. In multiple facilities around the United States, workers averaged thirty to forty percent increases in productivity. Adequate to good performers were suddenly doing great work. Yet we were paid poorly, and the work conditions were lousy. Why were so many people doing the best work in their lives? I had no idea, and nobody else seemed to know why, either.

One day, out of frustration, I grabbed my boss, who was trained as an engineer. I asked him, "George, what's going on here?" George pulled me out into the parking lot—it was early evening—and said, "Look, kid, you want to know why so many people are doing the best work in their lives? That's the reason"— and he pointed to the moon. He said, "That's the reason. People have been talking about going there for thousands of years, and you and I are going to be a part of making it happen. And I tell you, kid, we may never be part of anything that makes a difference again." Then he used a word that I now think you can take to the bank; he looked at me and said, "You want to know why we're doing so well, Charlie? We've got a *mission*."

Peak performance begins with a mission. John Kennedy, in this situation, challenged the nation by saying, "We will do these things not because they are easy, but because they are hard." It isn't easy, but it all begins with mission. Not one of the 1,500 people we've studied ever said anything else. They all talked about mission, or purpose, as the reason for doing what they do with such passion. For some it was their families, for others it was rising to the top of the organization, for still others it was being the best they could be at their position. For some people it was quality, for other people it was service. Everybody had their own take on it, but

they all started in that same place.

Can everybody be a peak performer? Can everybody have a mission? Well, we have found peak performers at the most modest levels of every organization, and in every walk of life. We have found peak performers who were stuck in jobs you wouldn't believe. In fact, I'll give you the example I prize the most—the example of a man who seemed totally trapped, but whose mission allowed him to succeed in a job that condemned others to a life of utter boredom. I found this man by accident, when I needed a story for my book.

One day I was driving from my home in Northern California to the San Francisco airport, consumed with the talk I was flying to give. I found myself in early morning rush hour traffic, and then a real Manhattan-style traffic jam. I wasn't going anywhere. All of a sudden I heard loud rock music. I looked up and couldn't believe what I saw—the toll taker I was approaching was dancing! I said, "Please, Lord, not this morning. It's not a time for one of your tests." Anyway, I got to the toll booth and gave him my dollar. He gave me my change with a backhanded slap, moving in time with his music. Now, I can't go through life pretending that these amazing things are not happening. So I asked the toll taker a standard, in-depth research question, "What are you doing?" He said, "I'm having a party." I said, "What about the rest of these people?" He said, "They're not invited."

I thought, "This guy is either nuts, or he's going to teach you something." I couldn't find out then, but I made a mental note to find him again. A month later I did. It was during the middle of the day, so there was no traffic, and he was still dancing, the music was still blaring. He insisted he was having a party.

I told him that I studied high achievers for a living, and that I needed a certain kind of story. He said, "You want to study me—great, take me to dinner." After dinner, I asked him what kept him going. I explained the concept of mission. He said, "You want to know my mission? I'm going to be a dancer someday. With what they pay me in that toll booth, I can't afford dance lessons. So I have the same two choices every other person has. I can let my dream die, or I can dance in the toll booth."

Now here is the key issue. There are 16 other people just like him, with the same job—no special privileges—members of what I call the "bitch and moan" school. These are the people who say, "Oh, it's miserable. My boss won't let me do it. The organization won't let me do it. My parents didn't let me do it. The school system ruined me." Yet one guy has managed to see a different world and a different set of possibilities.

He was saying to all of us, "I can let my dream die, or I can make it work anyway." Peak performers are people who will make it work anyway. When everybody else is complaining, or talking about the obstacles, peak performers will make it work anyway. The men and women who founded this country, the immigrants that came and then settled the frontiers, made it work anyway. If you want it badly enough, and if you apply your skills consistently enough, you'll make it work anyway. But what's the mission?

There are no secret steps to instant success—yet we're all capable of far more than we ever dreamed.

People want to be part of the best, part of an organization that makes a contribution. When we ask people across this country what is the number one hindrance to their performance, they all say, "I don't know what this place stands for. I don't know what they want from me." Can you imagine what would happen if we did that at the Olympic level, or in sports? Can you imagine what would happen if we did that in science, or any other significant endeavor? The consequences are just as severe in business. Thus my focus on the basic question: What's the mission?

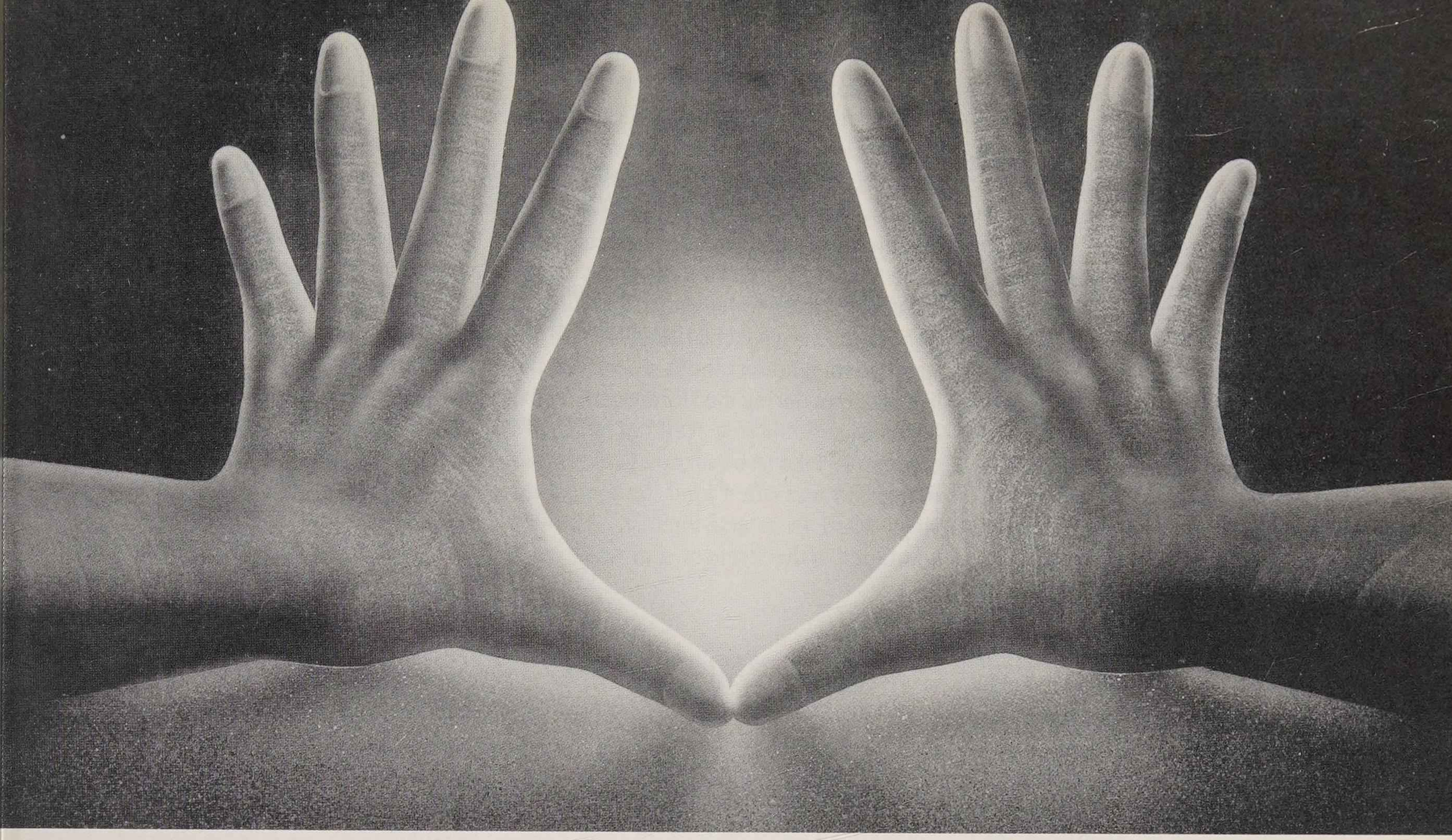
For six years I worked on the faculty of the Cancer Research Institute at the University of California Medical Center in San Francisco. I was there to study one group of people—cancer survivors. These people mystified their doctors, who said, "Those were our spontaneous remissions." Well, you quickly realize that spontaneous remission is a medical euphemism for "damned if we know what happened." So we went to patients and their families and asked, "What did you do to survive? Did you do anything that the rest of us can learn from?" I wanted to see whether the cancer survivors used the same skills as Olympians, as the great leaders in business, as the great scientists and artists.

What they consistently said was, "I drew on resources I never knew I had. I drew on talents I never knew were there. I was tougher than I thought." One man, a nationally known concert pianist, said, "It was my peak performance." That was the first time I ever heard those words. He said, "What I did in that hospital, to stay alive, was the hardest thing I ever did—much harder than any performance on stage. It was my peak performance."

Then I'd ask, "What did you do that the rest of us could learn from?" They said something I didn't understand at the beginning. They'd say, "Sometimes I ask myself, if I had only one hour to live, what would be so important to me that I'd be thinking about it during my last hour on Earth?" It turned out they only talked about two things. They talked about people they loved, and wanted more time to love more, and they talked about work. They were particularly proud of work, as yet unfinished, that made an impact—what we're calling work with a mission. Not one of those people ever said, with an hour left to live, "I thought of my mutual fund." Nobody mentioned possessions of any kind. They talked about love, and they talked about work.

That's the starting point for your own mission. What work are you most proud of, and who are you doing it for? Who do you care about? To love, to work—our country is going to need a lot of that.

Charles Garfield, PhD, is author of the best-selling Peak Performers: The New Heroes of American Business. *An expert on the skills and strategies of high achievers, he lectures and consults widely. Recent consultations have been with the US Olympic Committee and several NASA subcontractors, following the space shuttle disaster.*



Shusei Magaoka

Creativity, Creative Altruism and Cooperation

An excerpt from Howard Gruber

Although I'm not really going to speak about peace today, the underlying thought behind everything that we do really has to be the continuation of the struggle for world peace. That is the indispensible requirement for all human creativity and all future acts of love. Without peace, there will be no survival and no humanity.

My goals are to explore the links between creativity and altruism, and to explore the links between altruism and cooperation, and to try to persuade you that there are certain inevitable logical connections among those three domains.

In considering these domains, one of the first problems we encounter is what I call the Humpty-Dumptyish character of a great deal of contemporary research in the behavioral sciences. We have an enormous investment in the cognitive sciences, which in its own way is all to the good. Relatively little time, energy, money or encouragement is given to the study of creativity, giftedness, altruism, moral judgment and prosocial behavior, however, compared to other areas of cognitive research. That is one great problem we need to face.

A second problem is that within the impoverished parts of the behaviorial sciences there is a great deal of fractionation and fragmentation. The study of creativity has for the most part been isolated from the study of giftedness, and the study of creativity and giftedness has for the most part been isolated from the study of altruism and prosocial behavior. No recent book about giftedness, for example, however comprehensive it purports to be, says anything significant about altruism except to the extent that I have been involved in them.

Now, we're not interested only in the altruism of everyday life, although there is such a thing. It's the substrate out of which creative altruism grows. Everytime you pick up a handkerchief for a lady you risk throwing your back out of joint—so there is risk—but that kind of everyday exchange is not really what we have in mind. We're talking about how to be of some use

in relation to difficult, deep and seemingly intractible human problems.

I have a formula to explain the link between moral and creative behavior. It goes as follows. When you say that something *ought* to be the case, you must mean that it *could* be the case. To speak about impossibilities wouldn't make sense. But what is possible? How do you know what you can do? We don't know unless we extend ourselves to our maximum, in the most creative ways possible. So, *ought* implies *can*, and in the search for the possible, what we *can* do implies *creativity*. Therefore, to fulfill our moral obligations, we really have to search for creative pathways for helping others.

A second "formula" is more difficult to broach. When we speak of altruism, we're speaking of inequality. We're speaking of some disequilibrium in the distribution of human resources—some people have something that others don't, and the ones who don't, need it. It might be encouragement, it might be money, it might be other sorts of resources, and those that do have it could provide it to others if they only decided to do so.

From this inequality or disequilibrium, the altruist has two somewhat different choices. One is to eliminate the immediate problem—the inequity—but then to return to and maintain a status quo. The other choice, the pathway I consider to be creative altruism, is to try to eliminate the source of the problem. Interestingly, that means that creative altruism tries to destroy itself, since destroying the roots of inequality effectively destroys the very situation that makes creative altruism possible. That's my second formula—that creative altruism requires its self-destruction.

The third formula has to do with cooperation. Creative altruism is not something that you can simply do for people. You can only do it *with* people. And that means that you have to understand their point of view, their needs, in their own way. You have to have the humility to see what is good for them, not what you would like if you were in that situation, and to work together with them. Again, in the long run, your goal is to replace your help with self-help for the people in question. They have to be engaged in the actual work that needs to be done—the redistribution of human resources. So creative altruism implies cooperation.

I want to talk about one case of creative altruism. Oskar Schindler was a very self-centered German industrialist who, in Krakow, Poland, early in World War II, became a great creative altruist. He saved more than 1,200 Jews during the Holocaust, and was awarded the title Righteous Gentile (this is a special title by which the state of Israel honors those who saved the lives of Jews during the Holocaust). In the beginning, Schindler was not what we commonly take to be a good person. Although he was often kind, he almost always acted from self-interest. He also commited dishonest acts and was even a member of the Nazi party. It was his creative strength that enabled him to put his shortcomings, as well as his goodness and compassion, into the service of his higher soul, and to rescue as many persecuted human beings as he could.

To fulfill our moral obligations, we have to search for creative pathways for helping others.

Of particular interest are the two dramatic changes he underwent during the Holocaust. He went, first, from being an impulsive and sometimes opportunistic helper to being a compassionate person and finally a principled altruist. Second, he went from being a man whose concern was limited to the people he knew to being someone whose concern included many people he did not know at all.

Schindler had many powers that helped him. One of them was his gambling skill. He could sit up all night playing cards with the Nazi officers with whom he had to deal every day, and contrive to lose exactly the amount of money that would make the officers feel comfortable with him. This allowed him to go about his business of saving Jews. The point I can't emphasize too much is that he didn't start out with the idea of using his industrial position to save people's lives. It was something that grew on him—and grew, and grew. At first he helped a few people with whom he was in direct contact; then his work expanded to the point where he was helping people that he had never seen before.

Schindler didn't do this by himself, of course. He needed help from many people. One of these was Isaac Stern—not the violinist—a chief accountant in a factory Schindler bought. It was Stern who really knew how to get Jews out, and he made many of the most helpful suggestions to Schindler. So Schindler, the Nazi party member, and Stern, the Jew, collaborated in order to accomplish this great work. In the process of working together, they had to slowly develop a trust for each other, which wasn't easy considering the distances that separated them at the beginning.

Creative altruism is not a free gift. It's something you grow into through experience and struggle—through hard work. The work of altruism induces a changing definition of the self which has motivating power so that a developmental spiral is set in motion. The quality of creative altruism induces its own continuation, widening and even accelerating the process of growth.

Howard Gruber, PhD, is Professor of Psychology at the University of Geneva in Switzerland and at Rutgers University, where he directs the Institute for Cognitive Studies. His breakthrough research on the processes underlying creativity resulted in his first book, Darwin on Man: A Psychological Study of Scientific Creativity, *and he is now completing an intellectual biography of his mentor and friend, the late Jean Piaget.*

Supernormal Physical Functioning

An excerpt from Keith Thompson

Extraordinary abilities discovered in research on hypnosis, biofeedback, placebo effects, sports, spiritual healing, and multiple personality can be seen either as interesting side-effects or as latent potentials pressing to be born. It's important to recognize that we are just beginning to assimilate what we believe to be the facts of evolution, and to ponder their enormous significance.

It was a desire to consider the latter hypothesis—that exceptional abilities represent latent potentials—that led Michael Murphy, founder of Esalen Institute, and a few colleagues to begin systematically gathering research material and anecdotes from every domain in which physical transformations of some kind are reported. To date, the Esalen Study of Exceptional Functioning has gathered several thousand accounts of exceptional and supernormal bodily change. The studies and stories pertain to the areas mentioned above as well as to imagery, psychotherapy, somatic education, martial arts, shamanism, research with hallucinogenic drugs, yoga and contemplative practices the world over. They also come from artists and from the everyday experience of people who are not specifically engaged in a systematic practice or discipline of any kind.

In our view, the challenge for our time is to work with exceptional and supernormal mind/body capacities, in the context of a principle Murphy calls integral transformation. New emergent levels of functioning must build upon those which precede them. The emergence of new levels puts the lower levels in a new macroevolutionary context. If, as many believe, humanity is perched at the very earliest stages of the next evolutionary jump—from mind to supermind, from ordinary functioning to supernormal functioning—then we have no reason to believe this would involve a release from embodiment. It might, rather, involve a co-evolution of spirit and mind, and a fully embodied existence. This is one of the major premises of our research. Let me summarize other basic perspectives and assumptions.

First, the human capacity for psychophysical transformation is expressed in pathology such as multiple personality, stigmata, and so forth. The capacity for beneficial transformations is expressed by placebos and various kinds of mind-assisted healing approaches.

Second, to quote Michael Murphy, "Taken in their entirety, these many examples of exceptional functioning suggest that human nature harbors immense capacities that may be cultivated through dedicated practice." Some of the practices which further the development of these capacities are sports, the martial arts and life-encompassing disciplines such as shamanism and contemplative practice.

Third, such practice must be integral, that is, it must take into consideration that the human organism involves the dynamic interplay of spiritual, cognitive, volitional, emotional and physical elements—a hierarchy of energies and awarenesses connected to subliminal activity of many kinds. The goal of integral practice is a richer life upon Earth, instead of release from embodiment.

Fourth, the embodiment of possibilities implicit in high-level functioning, which can appear both beautiful and terrifying, requires serious transformative disciplines to give shape to the psychophysical development pressing to be born in us.

Fifth, transformations of the body require transformations of the mind, the emotions, the will, and the spirit. We exist on many levels at once, like multiple amphibians coming ashore to a kind of larger Earth of possibilities.

What, then, is the shape of an integral practice which allows the life-affirming development and expression of these psychophysical potentials? While we have not yet created an integral practice, Michael Murphy has proposed the following characteristics of any practice that develops:

- Integral practice must be suited to each practitioner's individual make-up. There is no single universal way.
- Integral transformation requires a strong and developing autonomy. One's focus is not on surrendering authority to a group or guru, but on fostering autonomy in a way that is appropriate and commensurate with our traditions in the West.
- It would promote a simultaneous development of spiritual, cognitive, emotional and physical faculties. There must also be a mutual entailment of virtues and of transformational means and modalities.
- Integral practice depends on developing awareness that transcends mental, emotional and physical functioning. This is an essential point. One cultivates a form of choiceless awareness that comes into its own and is self-existent.
- Integral approaches advocate and embody the principle that we surpass

limits by negotiation rather than by force.
- Integral transformation would be facilitated by personal traits that promote creativity in general.

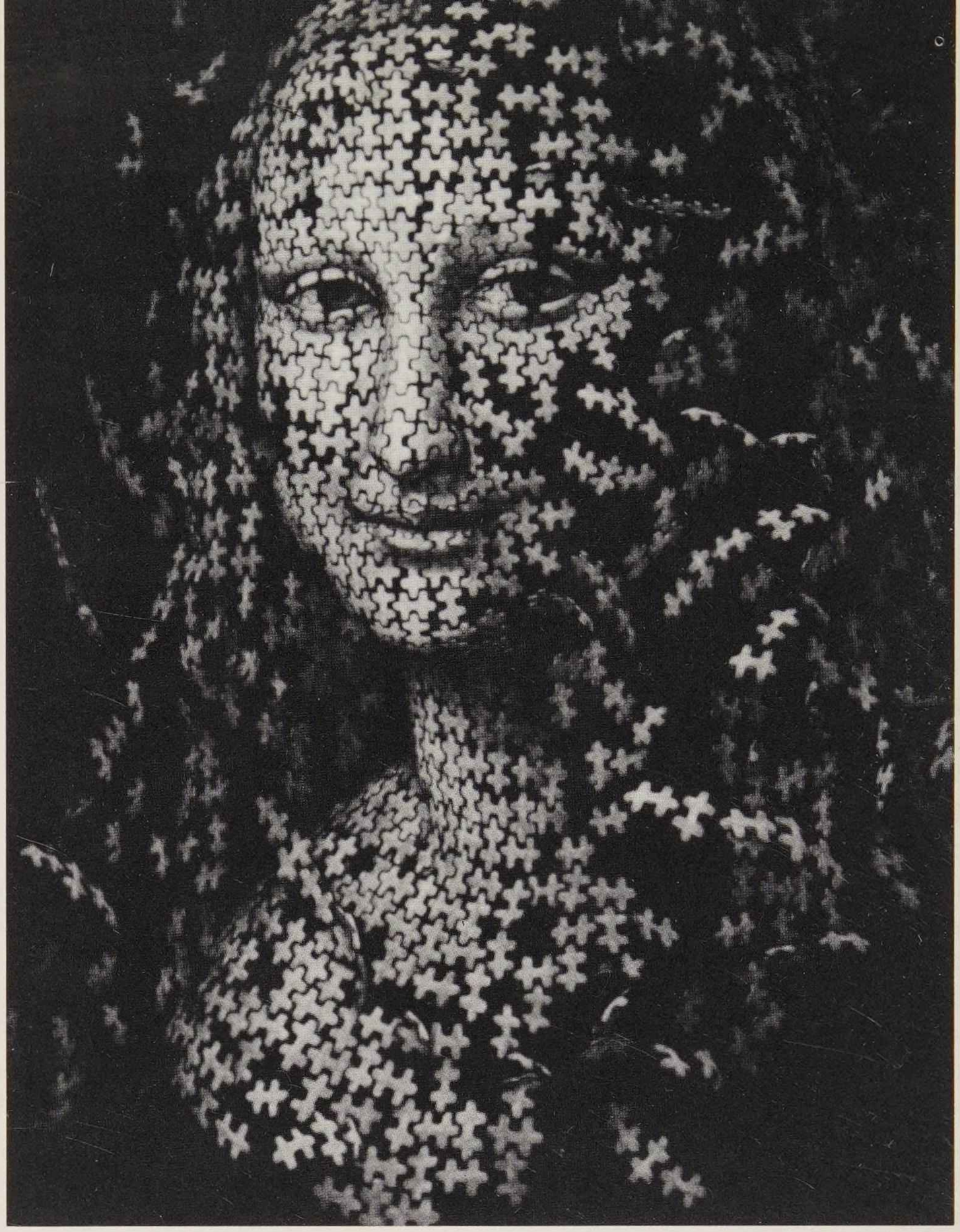
Another broad point to make about this involves the Greek concept antekelu-thia, which means "mutual entailment". The Stoics knew that courage without moderation was a bestial form of courage, just as justice without prudence could not really be considered justice. Yet the mutual entailment of transformative methods is often overlooked. Yogis, while realizing advanced and subtle stages of consciousness, have traditionally paid very little attention to their physical development, and even less to their emotional development. Psychotherapists sometimes foster an obsessive concern with the small corners of the self, while bodyworkers of a particular school may inadvertently impose a particular blueprint on their clients of how the body should be. We thus can appreciate that every practice needs other practices to complete it.

There is a poetic description, from the Upanishads, of the kind of multilevel transformation that we think is possible.

"And the illumined soul goes up and down these worlds, eating the food he desires, assuming the form he wants, chanting 'Oh wonderful, oh wonderful, oh wonderful'."

That is a beautiful description of the potential for integral transformation—transformation that does not leave the body behind, but fulfills it as an evolutionary frontier.

Keith Thompson is Research Associate and Writer for Esalen Institute's Study of Exceptional Functioning, which since 1978 has collected and organized almost 10,000 scientific studies of supernormal human capacities. A hypnotherapist, Thompson is also a freelance journalist and editor whose non-fiction articles have appeared in Esquire *and other magazines.*



Atsuo Sakazume

Methodological Implications of Exceptional Abilities Research

An excerpt from Willis Harman

Why have centuries of scientific research shed so little light on exceptional abilities? To try to answer that, let's consider what sort of "light" is wanted. What is it we want to know?

Consider the familiar example of a person who, under hypnosis, makes his body rigid, such that with head on one chair and feet on another, he becomes a "human bridge" over the space between, supporting a full-size person on his midsection. Surely this qualifies for "exceptional ability", since none of us in our ordinary states of mind can accomplish it. No reductionistic "explanation" is going to suffice, because the

hypnotist's suggestion (a holistic concept, not reducible to more elementary phenomena) is obviously a key aspect of the phenomenon. Nevertheless, we would like to "understand" the phenomenon in some sense. We would like to know if this is a potentially universal capability, and if so, what blocks it and how it is that a mere set of words from another person can bring it forth.

Such scientific "explanations" are not easily forthcoming in the area of exceptional abilities. There are several methodological difficulties which prevent their being understood in the conventional scientific research paradigm. These difficulties are sufficiently interwoven that it seems best to deal with them together rather than separately. Let us, then, ask what would be the characteristics of an extended science which would not experience these difficulties in dealing with the exceptional abilities area. I would like to list seven such characteristics, and then deal with the question of whether this is a reasonable and likely way for science to evolve.

1. Involves a hierarchy of sciences

The first of these seven postulated characteristics is that scientific knowledge is recognized to be hierarchically ordered. Nobel laureate Karl Popper, in his book (written with John Eccles) *The Self and Its Brain*, discusses the following hierarchical arrangement of sciences:

(4) Ecology/Sociology
(3) Biology
(2) Chemistry
(1) Physics

These sciences have a natural hierarchical relationship. Each level contains concepts that are *emergent* in that system level and not pertinent to the levels below. Chemical compounds have emergent properties (for example, taste and color) one would not surmise from the physical structure; living organisms have emergent properties (such as reproductive abilities) not predictable from the physics and chemistry; and mind and conscious experience at the fourth level are of a different order still. The higher levels tend to involve concepts that are more holistic than, and not expressible in terms of, concepts at lower levels (as, for example, the concept of a living organism at level 3, and conscious awareness at level 4).

Statements made at these different levels tend to be *complementary* in their relationship to one another (as opposed to contradictory). Moreover, we should note that acceptance of this hierarchical idea implies that the universe is *not* deterministic.

There exists another domain which is not encompassed by this list. Societies all over the world have valued, and assumed real in some sense, a class of experiences which we may call "spiritual". This class intersects with the area of exceptional abilities (for example, in "miraculous" healings and some examples of channeling). Without passing judgment on just how much of all of this will turn out to be accepted as "real", let us add a fifth level to Popper's hierarchy to include the "spiritual sciences".

It is clear that some spiritual and religious phenomena and experiences have received rather harsh reception by scientists in the past. These include extraordinary healing; visions and voices of what appear to be higher beings; apparent efficacy of prayer; ostensible communication from the dead; apparent "miracles"; and a type of channeling that used to be called "revelation" or "divine inspiration". This realm of experience has played a significant role in history, and in the shaping of our social institutions. It may be necessary for science to be less hasty than in the past in insisting that such phenomena couldn't happen or such experiences have no meaning.

2. Incorporates downward causation

A second characteristic has long been urged by Nobel laureate Roger Sperry—the concept of "downward causation" complementing "upward-causation". In a recent paper he cogently defends the view that "things are controlled not only from below upward by atomic and molecular action but also from above downward by mental, social, political, and other macro properties. [Furthermore,] primacy is [to be] given to the higher level controls rather than to the lowest."

One example Sperry gives of the influence in science of this new recognition of "downward causation" is the causal role of mental images in affecting behavior and the state of the body. In an earlier paper he had emphasized the need for science to accommodate the "downward causation" of conscious awareness and choice.

3. Aware of unconscious processes

Starting with the early researchers in hypnosis, including Freud, we find increasing acceptance of some concept of unconscious mental processes. At this point, few findings in the social sciences are as well established as the discovery (or, perhaps more accurately, the rediscovery) that the greater portion of our mental activity goes on outside of conscious awareness. We believe, value, discriminate, choose, and know unconsciously as well as consciously. Yet we typically live, think, behave, and carry on both education and science without taking seriously the implications of that fact.

The way reality is perceived is strongly affected by unconsciously held beliefs. The phenomena of hypnosis, in particular, emphasize dramatically how changes in unconscious beliefs, brought about in this case by suggestion, can alter perception and experience.

Enculturation is not in essence different from hypnosis. Through repeated and persistent suggestion, especially in infancy when there is a high degree of openness, each one of us is inevitably *culturally hypnotized* to perceive the world in the way our own culture perceives it. We may find it curious that other "primitive" or "traditional" cultures should perceive reality in the ways they do—so obviously discrepant with the modern scientific worldview. It is much harder to entertain the thought that we in modern Western society might have our own cultural peculiarities in our picture of reality.

The fact that some of what we consider "exceptional abilities" are not nearly so exceptional in other cultures (for example, firewalking, high degree of control over "involuntary" bodily processes, clairvoyant remote perception) could be taken as an important clue in the reassessment of our past concept of scientific methodology.

4. Sensitive to observer effect

Research in exceptional abilities is subject to a wide range of subtle variables, such as the subject's desire to cooperate with the experimenter, variability of the subject's responses from day to day, experimenter expectations, etc. One might

anticipate a pervasive and significant observer effect.

Take for example the reported remission of symptoms of cancer and other diseases through systematic use of inner imagery and autosuggestion. (Some of the reports are so remarkable as to qualify for the category of exceptional.) Careful work has been carried out by competent researchers, and the results strongly suggest the existence of a genuine phenomenon. Yet because of the absence of some concept of a "mechanism" to account for the phenomenon, research findings purporting to demonstrate it are expected to meet especially stringent requirements. By these strict standards, they fail to pass the test. Researchers with positive beliefs about the phenomena tend to get positive results, and skeptics tend to get negative results.

The skeptical interpret these characteristics of the research as evidence of the non-existence of the phenomenon. However, they can also be interpreted as indications of inappropriate demands for "objectivity" and "replicability". If one takes the approach of becoming intimately familiar with, and entering into a trusting relationship with, specific individuals who appear to have induced "spontaneous remission" through their own "inner work", one may come to a quite different conclusion than the skeptics. The controlled experiment, honored as it is by tradition, may still not be the best route to understanding exceptional abilities.

5. Provides alternative to control model

As we have noted, Western science has been fundamentally shaped by the implicit goals of European society, particularly the goal of material progress. Scientific knowledge after the mid-nineteenth century came increasingly to serve technology. That knowledge was perceived as useful which led to further technology—that is, knowledge leading to the ability to *predict and control.* With this emphasis the world gradually came to be perceived as subject to that kind of understanding and manipulation; the search for truth came to be equated with the carrying out of controlled experiments.

Part of the frustration in studying exceptional abilities comes from the fact that they do not fit well this model of the controlled experiment. The phenomena are typically erratic and replicability is an elusive goal. Furthermore, by concentrating on the outer phenomena and imposing outer controls, one learns little about the inner dynamics of the phenomena.

Morris Berman, in *The Reenchantment of the World*, argues with particular trenchancy that an adequate science cannot be based on attempting to know Nature from the outside, through controlled experiments in which phenomena are examined in abstraction from their context. In an extended science suited to understanding exceptional abilities, one would understand that Nature is revealed only in our relations with it, and phenomena can be known only in context—that is, through participant observation.

6. Is inclusive

There were good reasons, in the historical development of science, for an initial limiting of the scope of the new inquiry to the aspects of reality that are physically measurable, and to explanations that are nonteleological and reductionistic. One of the consequences of that limiting, however, has been that a tremendous amount of effort has gone into defending the barricades against, or explaining away, a host of phenomena that don't fit within those limits. These outcasts included miraculous healings and psychic phenomena, as well as more ordinary experiences such as volition, intention, conscious awareness, and selective attention.

Reassessing these phenomena leads us to propose that science be reformulated. Instead of starting with a limiting bias and having to defend against the anomalous, what if we start with the assumption that any class of inner experiences that have been reported, or of phenomena that have been observed, down through the ages and across cultures, *apparently in some sense exists*? The need then is for a science to accommodate all that exists.

7. Involves new metaphysical assumptions

For practical and political reasons that were quite valid at the time, the scientific enterprise early became characterized by three basic assumptions: the objectivist assumption; the positivist assumption; and the reductionist assumption. These characteristics have seemed so integral to the scientific method that it is hard to imagine they would ever be displaced. They imply that the fundamental stuff of the universe is the matter-energy with which the physicists deal.

As soon as we recognize that the higher-level sciences in the hierarchical structure cannot be reduced to physical-science concepts, however, it becomes clear that something like "mind" or "consciousness" must be taken account of, along with matter-energy. One attempt to deal with this has been that of dualism. Another, also time-hallowed, approach is panpsychism—the assumption that matter has some sort of mind-like qualities. Roger Sperry argues for "mentalism", essentially the assumption that mind-like qualities, real although not physically measurable, are emergent in the long evolutionary process.

Explorations leading toward the spiritual sciences have been carried on somewhat systematically through the centuries, in various parts of the world, partly in those specialized research laboratories that go by the name of monasteries. The convergence of these explorations has sometimes been termed the "perennial wisdom" of the world's spiritual traditions. It involves a basic implication that the fundamental stuff of the universe is mind-spirit stuff, or consciousness—a universal consciousness in which we all participate, from which come all matter-energy manifestations, and to which we all potentially have access in unlimited degree.

At first thought this assumption seems quite alien to the Western mind. However, it may well be that in another quarter century science will have been recast in this mold, and the levels of science discussed above will be seen in a far more integrated way than before.

Futurist, author and lecturer Willis Harman is President of the Institute of Noetic Sciences; a Senior Social Scientist at SRI International; and a member of the Board of Regents of the University of California. His popular books include An Incomplete Guide to the Future, Global Mind Change, *and (with co-authors)* Higher Creativity, Changing Images of Man *and* Paths to Peace.

Exceptional Abilities in Channeling

An excerpt from Arthur Hastings

Channeling is a situation or a process in which a person purports to communicate messages that are coming to them from the outside—that is, from the outside of their consciousness, although the messages may seem to come from inside of their head. This might occur in several ways.

First, the person may be getting messages through automatic writing. Second, a person may receive information through the Ouija board. Third, there are cases involving what we would call an inner voice. (Some people, for example, experience hearing words spoken inside their head; these words are communicative and *benign*.) Fourth—going a little bit farther on the spectrum of channeling—the person may be in somewhat of a light trance in which they experience, as it were, a kind of overshadowing by another being or another presence inside their own experience. Finally there is what I would call the full-bodied trance personality. During this experience, the person is in a total trance and his or her consciousness steps into the background, as it were, while his or her body is taken over by another being or personality. Often this personality claims to be an independent, outside being.

Regardless of their source—whether it's the inner self, the outer self, or great spirit beings—the messages from "channels" are important ones for our time because they reflect certain needs to which we otherwise would not pay attention.

What are the exceptional abilities that show up in channeling? What are the abilities that we would like to know more about, and that we suspect might tell us something about exceptional human performance and the greater self?

Health and Healing

Let me start with health information. Here I will draw upon the person who is probably the most famous psychic in America, Edgar Cayce. He was born in 1877 and died in 1945; the Association for Research and Enlightenment carries on his work now. He is best known for his clairvoyant readings on people's health, though he actually did many more readings concerning the nature of people's lives and their existential significance.

Cayce's health diagnoses can be summarized as follows: First, he would be given the name of the person to be diagnosed. Then he would go into a trance and describe that person's health condition. His diagnoses might include high blood pressure, circulation or nerve disorders, organ malfunctions, spinal misalignments in the language of chiropractic, and so on. He would also talk about stress, exhaustion, over-exertion, poor mental attitudes, and the mental and spiritual state of the person. Finally, after this diagnosis, he would give various recommendations for treatment. His recommendations usually involved a strong framework of natural remedies (formulas that you would mix up yourself—such things as castor oil packs for skin problems and for stimulation), plus recommendations about exercise, diet and attitude change. He would also recommend surgery in certain cases, even doing this in one case for himself!

Now none of this is necessarily unusual, except that he did this while separated from the person he was diagnosing. He or she might be in the next room, or anywhere from a few miles to a thousand or two thousand miles away. Yet many of the diagnoses were confirmed by physicians or by other people involved, and many of the treatments were reported to be effective—even in some cases in which regular medical treatment had failed. In one sample of one hundred and fifty cases—according to the spontaneous reports that came in afterwards—forty-three percent reported good results, seven percent reported negative results, while fifty percent failed to report. Of those who reported, the success rate was rather high; I think any physician would be satisfied with that kind of response.

Literature

A second ability, besides health diagnosis and treatment, pertains to literature. This is where the channeling mode really stands out. The visionary writing and art of William Blake, for example, were highly responsive to his spiritual perception, and his major prophetic work—a long poem entitled "Jerusalem"—apparently came to him entirely through dictation from an inner voice. He said that he had written "from immediate dictation, twelve or sometimes twenty or thirty lines at a time without premeditation and even against my will, the time it has taken in writing was thus rendered non-existent. And an immense poem exists which seems to be the labor of a long life all produced without labor or study."

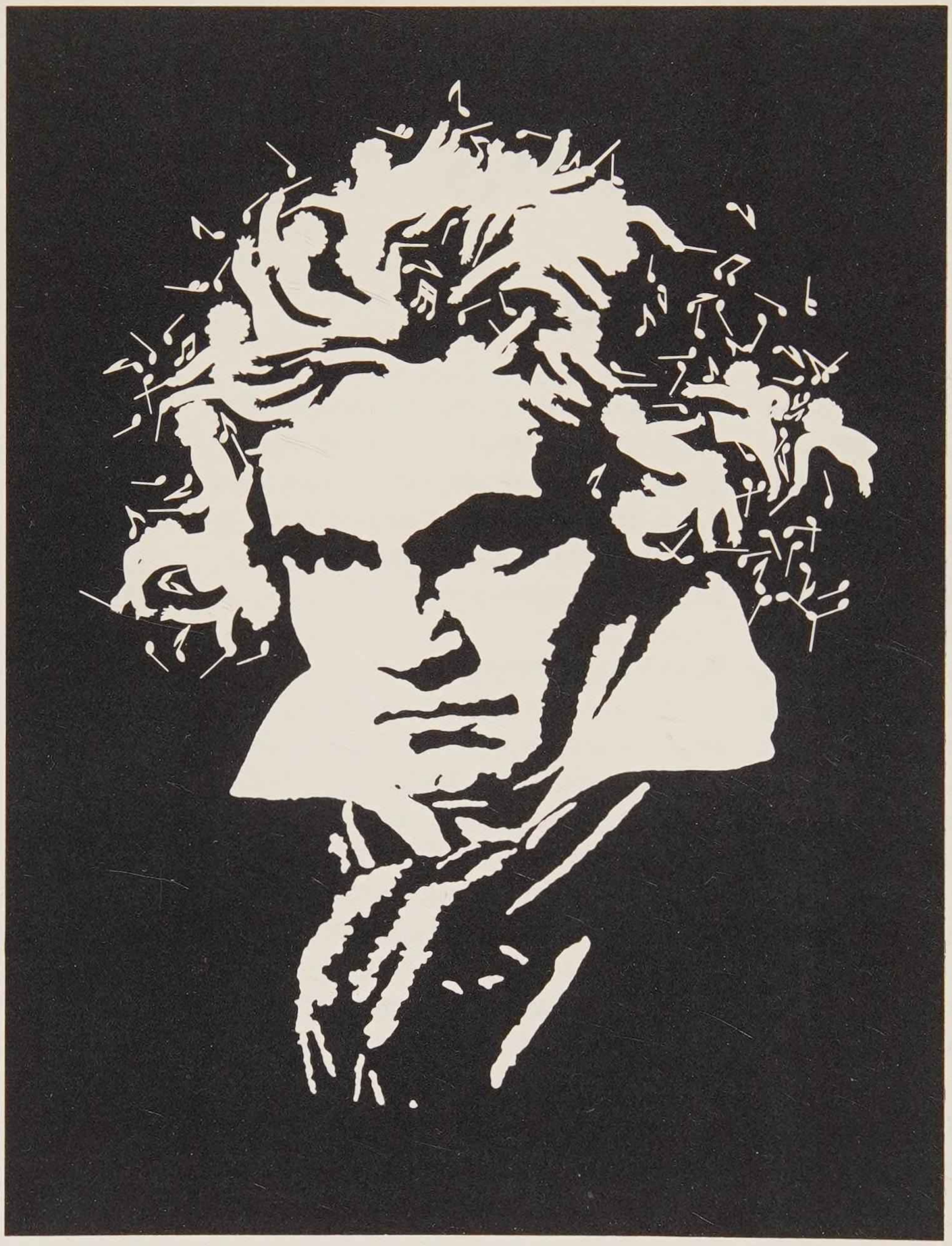
The most striking literary abilities that have been accessed by channeling involved a woman named Pearl Curran, who was not a professional medium at all. She and some friends were playing with a Ouija board in 1913, when a spirit came through claiming to be Patience Worth, an Englishwoman of the seventeenth century. Over the next twenty years, Patience Worth dictated high-quality poems, award-winning short stories and novels which were highly reviewed all over the world. They even received rave reviews

in *The New York Times*. Her poetry was ranked with that of Amy Lowell, Edgar Lee Masters, William Carlos Williams, and other accomplished American poets. It was written in blank verse, but since it's not in style now, her poems are generally forgotten.

Patience was a tour de force. If you said to her, "Patience, give us a poem on such and such a topic," she would produce one with two or three seconds lag time. At first she would spell them out on the Ouija board; later she spoke them directly into Mrs. Curran's mind.

Her novels were quite stunning. One, called *The Sorry Tale*, was a biblical epic set in the time of Christ. It contained 325,000 words, and was very favorably reviewed. Another was *Telka: A Medieval Idyll*, and this was written in an archaic dialect: Ninety-five percent of the words were Anglo-Saxon or had Anglo-Saxon roots. That's very unusual. Shakespeare only had seventy percent to eighty percent Anglo-Saxon roots in his writing. And not only that—much of the prose was actually in iambic pentameter, in verse! So it, in particular, was a really exceptional production. Then there was *Hope Trueblood*, which was a novel about Victorian England. It received favorable reviews in England, where most of the reviewers assumed it was written by an Englishperson rather than by a spirit on the other side of the Atlantic. The book jacket said "By a pre-Victorian writer", which is an interesting comment on the book's source.

The exceptional qualities in channeled literature are several. First, it often involves non-stop dictation without any effort. Second, there is rarely a need for changes or corrections. Third, the channel can stop in mid-stream and then, the next week, start right up with the next sentence as if there had been no break. Patience Worth also could dictate two or three novels in one evening—doing a few hundred words on this one, a few hundred words on that one—compose two or three poems, *and* converse with people, never missing a beat. Those are literary exceptional abilities.



Shingeo Fukuda

The Sciences

There are fewer exceptional capabilities in mathematics and sciences. The most outstanding case was the mathematician Srinivasa Ramanujan. He was born in India in 1887, and died in 1920. He grew up poor and uneducated in a small village. Given an out-of-date mathematical book at the age 16, he promptly devoured it, learning all of its theorems and then making up his own. Eventually he sent some of his work to Cambridge mathematician Godfrey Hardy. When Hardy first saw Ramanujan's formulas he said they must be true, because if they were not true, nobody could have had the imagination to invent them. Ramanujan said that he got many of his mathematical concepts and formulas from the Indian goddess Namagiri, and from Saraswati, who is also Manjusri of language, song, and mathematics.

Ramanujan was considered a real mathematical genius at least the equal of Gauss, Euler, and Jacobi. Yet some of the formulas that Namagiri gave him were incorrect. They were brilliant conceptually, but wrong. Others, of course, were brilliant and correct. So he was channeling extraordinary material, but some of it was simply not accurate. It might have been accurate in an alternate universe, but not in ours.

For the other sciences, there is not a very stunning picture for exceptional abilities through channeling. Almost no channeled materials in fields such as physics, astronomy, evolution, or geology are useful. They tend to be impractical when they are not simply incorrect. Moreover, predictions in a scientific field generally reflect where the science is at that time—they do not carry it forward at all.

This illustrates a very important principle. When channeling occurs, whatever the source, that source has to draw upon the background knowledge and experience of the person doing the channeling. So the more that person is capable of doing personally, the more he or she knows, the more the channel has to draw on.

Music and Arts

A surprising number of high quality music compositions have come through channeling. One of the most famous is "The Devil's Sonata", which was written

Channels, and channeling, show us that the abilities of the self extend beyond the boundaries of our own individual consciousness.

by Guiseppe Tartini after he dreamed that the devil was playing the violin. Tartini said, "How great my astonishment when I heard him play, with such consummate skill, a sonata of such exquisite beauty as surpassed the boldest flights of my imagination." When he woke up, he tried to recapture what he had heard.

Painting is another area in which exceptional artistic abilities are sometimes channeled. William Blake painted figures directly from his own spiritual perception. He could call spirits up, he said, look at them, and then paint them. When the poet Robert Southey said that this "spiritual vision" was just his imagination, Blake commented, "Notice the lengths he will go to deny the value of spiritual perception."

The Brazilian medium Luis Gasparetto brings through paintings that he says are inspired by famous artists such as Picasso, Monet, Manet, Degas, Toulouse-Lautrec, Raphael and so on. Gasparetto goes into a trance, takes pastels or acrylics, and then does very rapid sketches. Sometimes he will do these upside down, and sometimes he will do them in darkened rooms. He almost always plays very loud music, especially Vivaldi, while he does this. The drawings themselves are not exceptional; in this case, it's the ability to draw, at that speed, in the style of different artists, under very difficult conditions, that's exceptional.

Note here that sometimes channeled abilities are truly extraordinary, as in the literary productions mentioned above. In other cases, the ability is no more than that of a reasonably talented person in that area, but the person doing the channeling doesn't have that talent, ordinary or otherwise. So there are very interesting variations to look at.

Philosophy

Finally, there are transpersonally derived philosophical teachings. In the old time, Old Testament prophets such as Jeremiah and Isaiah could be considered channels, while Mohammed was given the Koran by dictation from the Archangel Gabriel. In Buddhism, *The Tibetan Book of the Dead* is a transmitted, or channeled, teaching. In contemporary life, *A Course in Miracles* is probably the most striking example of a transmitted teaching, though not the only one. The Course was dictated to Helen Shucman by an inner voice, over five years. Again, it was dictation which could be simply stopped and picked up again in midsentence, whether a week, day, or month later. The material has a very complex, interlocking structure which leads one to believe that it was all composed right from the beginning, and "rolled out" through Helen's mind. It is very sophisticated psychologically. There are now 440,000 copies in print. The following is lesson number 188 from the workbook.

"The peace of God is shining in me now. Why wait for heaven? Those who seek the light are merely covering their eyes. The light is in them now. Enlightenment is but a recognition, not a change at all. Light is not of the world, yet you who bear the light in you are alien here as well. The light came with you from your native home, and stayed with you because it is your own. It is the only thing you bring with you from Him Who is your Source. It shines in you because it lights your home, and leads you back to where it came from and you are at home."

What conclusions can we draw from these rather unusual modes of accessing exceptional abilities? First, in the channeling mode, there are skills that go beyond the training or the capability of the person who is channeling. Some literary productions, and some compositions in music, are examples. Sometimes, however, the abilities are beyond the normal range, and would be considered exceptional no matter who had them. Second, it is almost effortless creation—it is immediate, spontaneous. There appears to be no mental work involved. Third, there is often transmission of information or concepts of an extraordinary social, spiritual, or transpersonal nature. This is sometimes very sophisticated material and often reflects social patterns or cultural needs in a very significant way.

Now, channeling is not a totally different dimension of human capability, and the people involved are not abnormal. In fact, the models discussed are on a continuum. On one end of that continuum, some channeling seems to involve the person drawing on his or her own deeper self, or on a sub-personality which is part of the landscape of the self just beyond conscious awareness. Just a bit farther along on the continuum are cases in which the person is tapping into archetypal principles or energies. One channel described this as "holding hands with something else", and the result is a personification of the channel's own personality plus some archetypal or more general transpersonal principle. At the end of the continuum, there are cases where the person actually serves to communicate from entities, or from an outside personality, other than his or her conscious self. Yet even in these areas, the outside entities have to use the language, experience and conceptual frameworks of the individual.

What these point to is the presence of greater reaches of the self. There are more principles and powers and forces and processes available to human consciousness than we ordinarily assume. Channeling provides an opportunity, albeit an unusual one, to explore ways of accessing and processing these. So channels, and channeling, show us that the abilities of the self extend beyond the horizons of our own individual consciousness.

Arthur Hastings, PhD, is Professor of Transpersonal Psychology and former Dean of Faculty at the Institute of Transpersonal Psychology in Menlo Park, California, and Adjunct Professor of Psychology at John F. Kennedy University in Orinda, California. His books include Health for the Whole Person, *which he co-edited in 1980.*

Travel News

Eastern Europe
July 11-27

This summer, Stanley Krippner leads a journey for the Institute through Eastern Europe, exploring traditional healing practices. Dr. Krippner heads the Center for Consciousness Studies at Saybrook Institute in San Francisco. The trip balances exploration in cities with visits to alpine countryside and small villages.

In Czechoslovakia, Hungary and Yugoslavia, Dr. Krippner and the group will meet with scientists who are researching the mind and its capabilities. In Yugoslavia, the group will attend an international symposium on shamanism. We will also make frequent visits to some of Eastern Europe's best-known health spas, for massage and healing baths, and explore the meanings of dreams with Dr. Krippner. Let the great scenic beauty of these countries work its healing magic on you. This trip is filling fast and we recommend an early reservation deposit.

China
September 24-October 9

This is the Year of the Dragon in China, an auspicious time to visit this ever-changing country.

Healing, especially the energetic form of healing called QiGong, is the focus of the Institute's journey in September. Tour leader Pamela Murphy has lived in China and studied traditional forms of healing. She is a licensed acupuncturist whose practice includes Chinese herbs, Shiatsu, and other forms of massage.

In China, we'll meet with several QiGong masters and visit traditional medicine hospitals and colleges. We'll observe how the Chinese use traditional medicine to treat illness and talk with physicians about the complementarity of Western medicine and traditional practices.

Japan
October 9-23

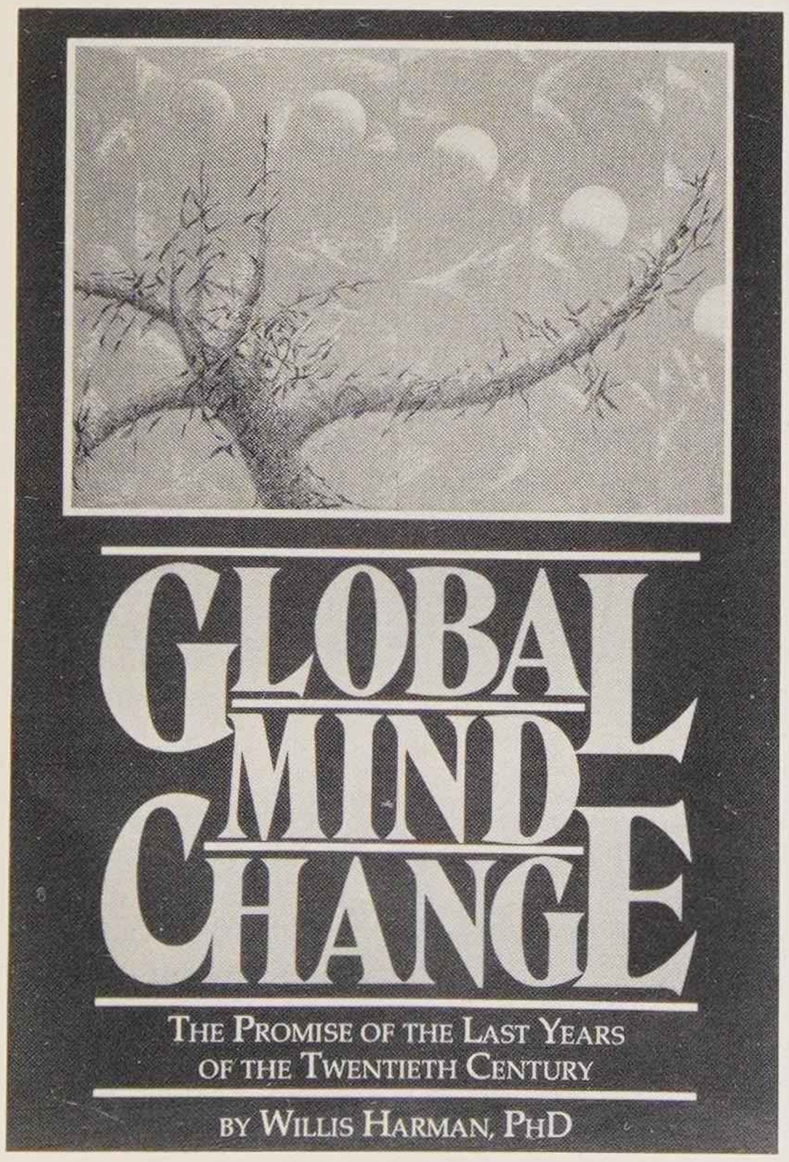
Pamela Murphy also leads our tour of Japan, immediately following the China trip, where we'll also meet with traditional healers. We'll visit several health spas in the Japan Alps, and stay in one for five days. Various forms of health treatment are available, if desired, or one can simply hike and explore the area. We'll see two of Japan's most spectacular Fall Festivals in Kyoto; admire the great temples, imperial palaces and exquisite gardens in Nara, Kyoto and Tokyo; and enjoy Japan's delicate cuisine. It's an opportunity to begin to know this country which has become so important to the USA and the world.

Bali and Beyond
November 6-25

The November journey to Bali and the Spice Islands also offers an opportunity to meet traditional healers, and to be immersed in the esoteric inner world of trance healing, rituals and shamanistic magic. Tour leader Bruce Carpenter has lived in Bali for 10 years, and has researched and written about local healing practices. He has arranged performances with some of Bali's best musicians and dancers, and will introduce us to many interesting local people.

We'll cruise the exotic Spice Islands east of Bali on the new twin-hulled *Island Explorer*, swimming and snorkeling in clear, calm waters. Those who prefer not to cruise have the option of flying to Sulawesi's Torajaland, to visit the villages of animist tribal people, and then to Borneo to see Dayak tribal dances.

For a brochure fully describing any of these trips, write or phone the Institute, or call Marguerite Craig, Director of Travel Programs, at (415) 461-7854.



Global Mind Change: The Promise of the Last Years of the Twentieth Century.
Willis Harman, Knowledge Systems, Inc., 1988.
205 pages.

Throughout history, the really fundamental changes in societies have come about not from dictates of governments and the results of battles but through vast numbers of people changing their minds—sometimes only a little bit. This book, to be published in Spring 1988, suggests that people can change the world by withholding legitimacy from entrenched institutions—such as slavery—and by deliberately changing their internal image of reality. Author Willis Harman is President of the Institute of Noetic Sciences.

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The President's Circle

The President's Circle is a small group of individuals personally supporting President Willis Harman's work at the Institute. This special funding is intended to allow Willis to use his time in the most effective way possible—meeting and exchanging views with individuals and groups, public speaking, and writing. See page 31 for more information, or contact Winston Franklin at the Institute office.

Nominate an Altruist

We invite your nomination for the second annual Temple Award for Creative Altruism. This award of $25,000 honors "those persons whose lives and work embody the inspirational light of unselfish service motivated by love". For more information or a nomination form, see your February "Special Report" or contact the Altruistic Spirit Program at the Institute office.

Prize for Best Student Research

We have established a $5,000 prize fund for the best scientific research, *by students,* of Rupert Sheldrake's hypothesis of formative causation, as described in his 1981 book *A New Science of Life.* Experiments may be conducted in chemistry, biology, animal behavior, or psychology. Entries are sought in three student categories: (1) High school, (2) College undergraduate, (3) College graduate and post-graduate, and may be submitted any time prior to September 30, 1990. For more information see the October-November 1987 *Noetic Sciences Bulletin*, or contact the Morphic Resonance Research Competition at the Institute office. A competition packet is available for $5.00.

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