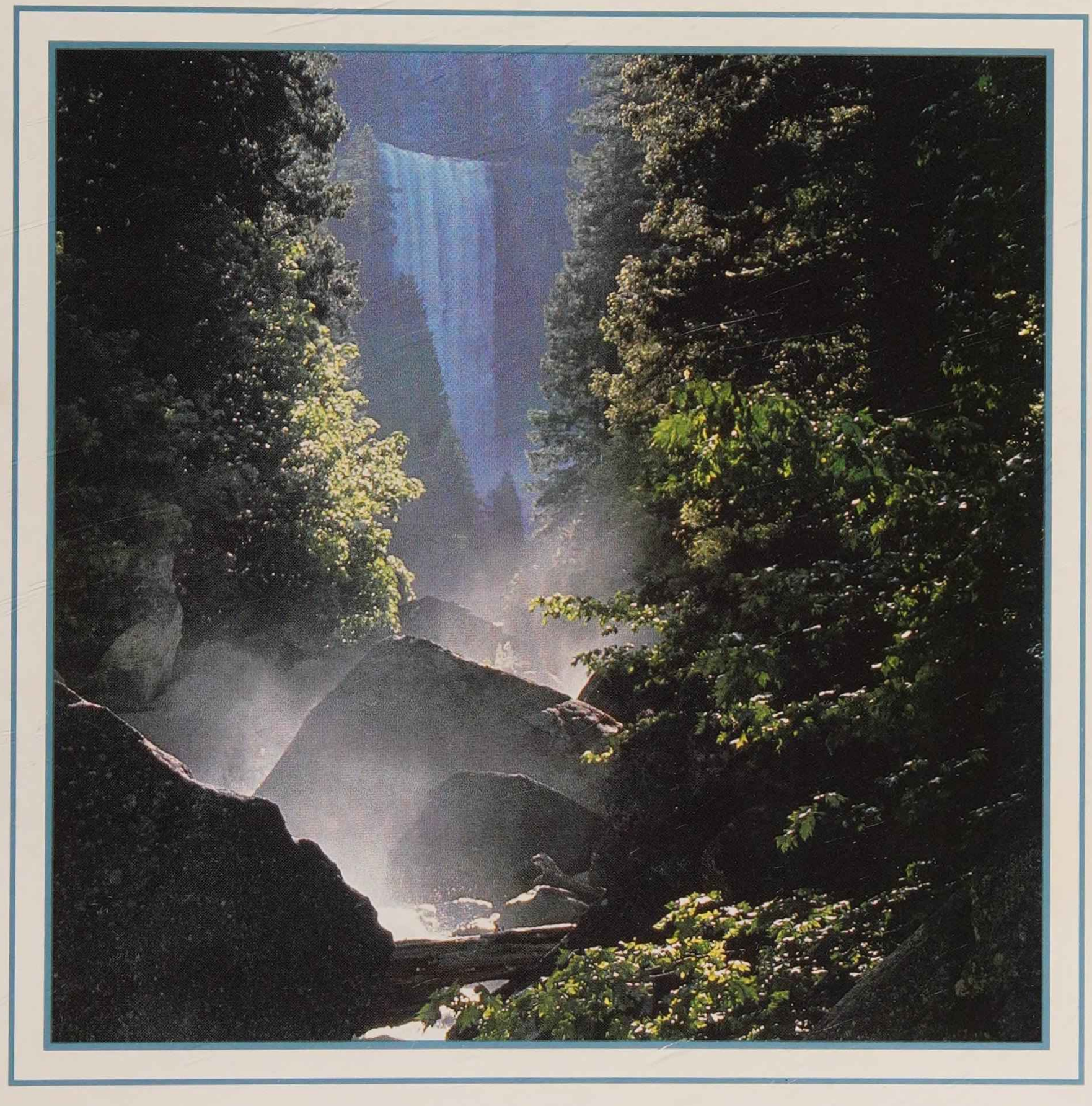
NOETIC SCIENCES REVIEW

NO. 15 1990



SUMMER

Margaret L. Jackson

The Buddhas and the Christs are born complete. They neither seek love nor give love, because they are love itself. But we who are born again and again must discover the meaning of love, must learn to live love as the flower lives beauty.

Henry Miller
Insomnia

INSTITUTE OF
NOETIC
SCIENCES

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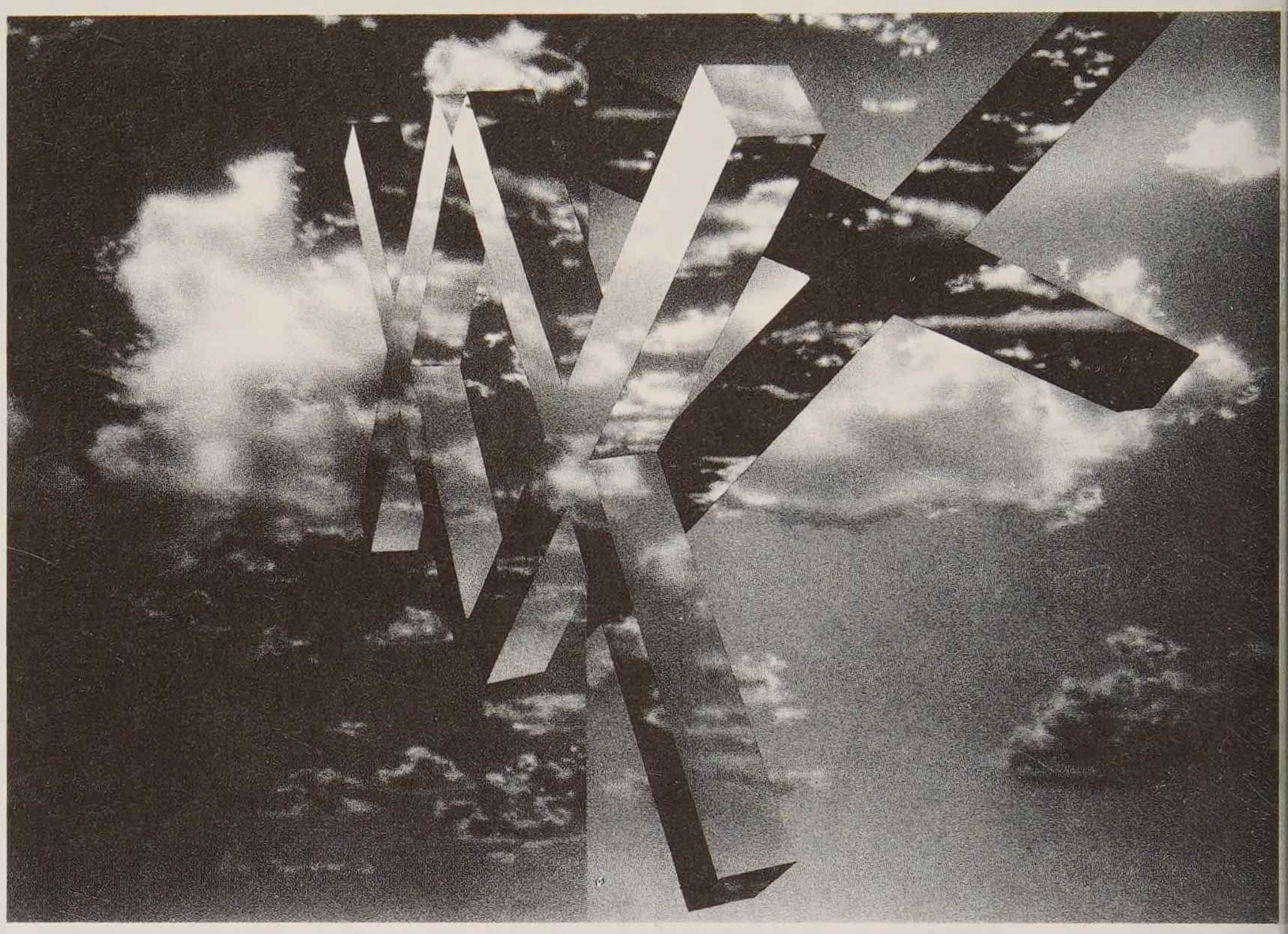
The Institute of Noetic Sciences was founded in 1973 to support research and education on human consciousness. A tax-exempt, non-profit public foundation, the Institute's purposes are to broaden knowledge of the nature and potentials of mind and consciousness, and to apply that knowledge to the enhancement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

Contents



Jim Alf

In this issue we feature three articles on how we create our worldview, eac with a different slant. The three reflect the kinds of issues being explore within the Institute's Causality Project.

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Number 15

ART CREDITS

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The *NOETIC SCIENCES REVIEW* (ISSN 0897-1005) is published quarterly by the Institute of Noetic Sciences, 475 Gate Five Road, Suite 300, Sausalito, California 94965. The *Noetic Sciences Review* is sent free to all members of the Institute of Noetic Sciences. See page 47 for membership information.

In a global world with an expandin
global consciousness, we recogniz
that the worldview of moder
Western culture is not the only way t
understand the world and the univers
in which we liv

With this issue of the *Review* we begi
a series of articles—in this case
trilogy—on different aspects of cor
sciousness and thinking. Each articl
is focused on the same issue . . . from
different perspectiv

photo by T. Harrison Judd

Language and Worldview

by Elisabet Sahtouris

Perhaps the most important discovery of modern science is that *there can be no single true and complete worldview*. Like all species, we have only partial information about the world, and our information changes as our knowledge increases, as our inventions become more sophisticated, and as we and other species actually change our world. We change the world even while we are looking at it, for we are never only observers—we continue being players.

Most of what scientists do is try out—test by experiment—different parts of a scientific worldview, to see where it works and where it needs changing. Archeology and history have become scientific searches now, along with biology and physics, seeking experimental ways of testing theory. It makes good sense to keep improving our worldview as we gain new knowledge, even though it will never be completely "right". . . .

Today's dominant scientific worldview evolved in European languages with common roots and close relationships—languages which happen to be structured in a way that forces us, in talking or writing about our world, to think and speak of it in terms of thing-nouns and action-verbs. This language structure gives us a worldview, as soon as we begin speaking as children, in which we actually *see* the world as made of separate things that stay still (nouns) or move or are moved in relation to one another (verbs). The reasoning, the logic, and the mathematics of scientists are all based on this way of dividing up the world.

It can come as a great surprise to us that all people do not see the world in this way. Some human languages do not make our kind of distinction between nouns and verbs—all the world is seen through certain languages as a pattern of interwoven processes in time more than as a pattern of separate things in space. Speakers of Hopi or Nootka, for example, cannot imagine things without their motion, change, aging, or other aspects of coming into and out of being. Instead of saying, for example, "The light shines," or "The water falls," they have single-word expressions that do not separate the light from its shining or the water from its falling. In such process languages, people do not think of time as made up of a series of "things" called seconds, minutes, and hours. They see time as the change in things, which is the way physicists now understand time.

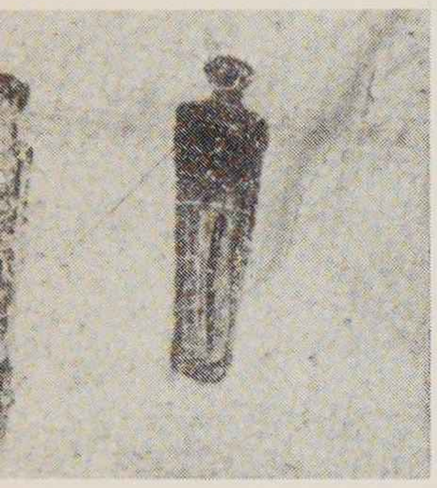
These are only a very few examples of the way in which a language can determine how we see our world, yet they are enough to make us think about what the scientific worldview might be like if it had been developed in a very different set of languages. Einstein once agreed it might be easier to describe the discoveries of modern physics in the Hopi language than in English, because we would not face the contradictions of a world made at once of particle-things and wave-actions, of matter-

things and energy-actions, never having separated thing from action in the first place.

Process-language cultures are better suited to organic than mechanical worldviews. Perhaps such cultures did not develop mechanical technologies because machinery is necessarily conceived and built as the interactions of separate and, insofar as possible, unchanging parts. As it happened, science developed most fully in European-language cultures. . . .

Anthropology and linguistics, the sciences of human cultures and languages, are relatively new parts of science as a whole, but they have taught us that human experience is very varied and rich. They have made us realize that the scientific worldview, which was developed mainly in industrializing Western countries, is based on and represents only a limited part of human experience. Many scientists, especially physicists and physicians, have begun to use ideas and practices from Eastern worldviews to enrich their Western science, while Western science has become an important part of Eastern life, especially in Japan and China. Unfortunately, just as we dominant humans have worked at killing off other intelligent species, so have our dominant technological cultures worked at killing off nontechnological human cultures. Every culture and language lost seriously diminishes the variety and richness of human experience. This variety and richness is as essential to our cultural health as is genetic variety to the health of any species and species variety to the health of any natural ecosystem.

Reprinted, with permission, from Gaia: The Human Journey From Chaos to Cosmos, *by Elisabet Sahtouris (Pocket Books; ©1989 by Dr. Elisabet Sahtouris).*



Remember that the "reality" we humans see as ourselves and our relationship to the world around us is our creation, our conscious imagery. . . . The meaning we give things comes from the context in which we see them.

Language has played an enormously important role in the building of human societies and cultures. The human mind itself is largely a product of our social language community. Language is without doubt at the heart of our humanity. And written language may have been the invention that changed our mental images of ourselves and our world more than any other.

It was very likely writing that changed the way we saw ourselves in relation to the world in which we live—that permitted us to be observers of as well as participants in life's play. . . .

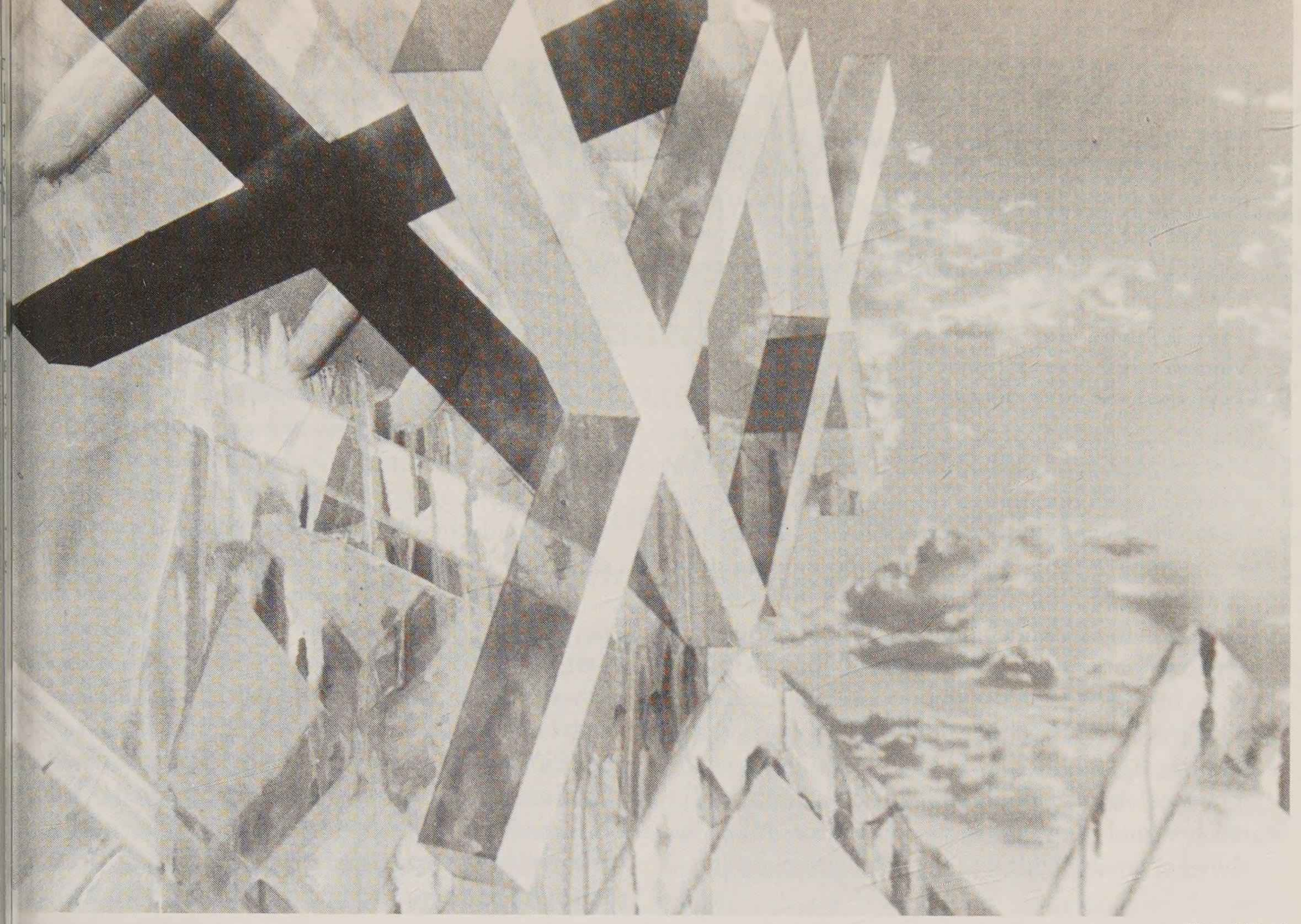
It's hard for us to imagine what it must have been like not to have separated ourselves from the world as observers of it, not to think of ourselves as separate from our knowledge, not to think of our languages as languages and our minds as minds, or our world as something to know *about* in our minds. Yet all of us were like this as small children before we were taught to read and to think about the world. In this sense, human infancy even today repeats something of the infancy of our species.

Before we invented writing, the script of Gaian creation was stored in geological records, in DNA, in the development of embryos, in nervous systems, to some extent in human minds constructed by language. Through writing we began to separate our knowledge and ideas about the dance from the dance itself—in a sense, to separate the script from its playing out.

But remember that the "reality" we humans see as ourselves and our relationship to the world around us is our creation, our conscious imagery. Our worldviews are rich in the images that language makes possible—an ever increasing wealth of linguistic portrayals of our human interactions with one another and with the rest of nature, accumulated in time and over cultures through written records. . . .

The meaning we give things comes from the context in which we see them, and we supply this context not from the sense impressions we receive from our world but from the patterns ever evolving inside our nervous system—patterns which reveal themselves as that richly complex self-organizing and partly conscious mind which ever composes and recomposes itself through individual and cultural experience.

It is our human heritage to continually work at making conscious, thoughtful sense of all these patterns. We embed all new information into existing brain-mind patterns, put these patterns into categories or contexts of meaning, add to them, change them, rearrange, distort, and enrich them until they make sense to us as part of our overall worldview.



Jim Alford

Scientific Analysis and the Recovery of the Natural World

by Richard Dixey

"In the last analysis, the ultimate picture that an age forms of the nature of the world is its most fundamental possession. It is the final controlling factor in all thinking whatever."

This wonderful statement about the ultimate meaning of science is by Edwin Arthur Burtt (in *The Metaphysical Foundations of Modern Science)*.

In other words, the way we see our world is the very essence of our culture. When we look back in history, we see that what really lasts about previous cultures is their views of their world. They may leave pyramids or other buildings and bits and pieces of stuff, but what counts, essentially, is how they saw their own world. That tells us far more about them than any building ever could—and, of course, is far more important to the generations that follow.

So how *do* we see the world from a Western point of view? For if Burtt's premise is correct, this question is one of the most important we can ask, and its answer offers the possibility of insight into a myriad of problems and opportunities. How then can we get at this issue?

It is my contention that the *scientific* worldview is a major key to Western culture, particularly Christendom (as it would have been called in the medieval world). Further, that in understanding some of the *preconceptions* of modern Western science, we are approaching an understanding of Western culture itself. So, forming an under-

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An Essay on the History and Meaning of the Western Scientific Tradition Based on a Talk at The Institute of Noetic Sciences

standing of such preconceptions is a project that gives tremendous rewards—rewards which arise from asking questions that initially may seem hardly relevant, faced with modern science in all its glamour and power. But the answers, far from weakening or marginalizing our grip on the world, actually offer a real deepening of appreciation about what our culture has offered to humankind.

Metaphysics may be defined as the preconceptions one brings to any experience. . . . Our views of the world are colored by the world in which we live.

Metaphysical Foundations

This inquiry into the meaning of science brings us into the area of metaphysics. So, let's define metaphysics. Metaphysics has been defined in a lot of different ways. Aristotle, who first coined the subject if not the word, described metaphysics as a study of being qua being, that is, the study of being itself. Even today one can still use that definition. But I think it is more helpful in this discussion to define metaphysics in terms of the preconceptions that one brings to any experience. Because it's just a historical fact that the world into which we are born pre-dates us. There you go! The world that we perceive is given to us. Inevitably. And our views about it are colored by the views of our parents and our teachers and the world in which we live. All of those things are metaphysical to our conception, prior to it.

Now it's a major claim of science that this type of subjective coloring is removed by the objective analytical techniques it employs. But despite these claims I think it is now certain that it just isn't possible to conceive the world without some preconception. This conclusion is of quite universal importance, and has been reached by all philosophers who have examined it in recent times. Further, such a conception seems to arise from the very bowels of modern science itself, in both its biological and quantum mechanical applications.

Could there be alternatives to the way science represents the world?

So could there perhaps be alternatives to the way science represents the world? Might there be other ways of seeing that would be compatible with the body of knowledge as we have it today? What I shall be hoping to show is that the world of science is metaphysically colored, due to events that occurred primarily in the seventeenth century. And we've inherited that worldview lock, stock and barrel. With, unfortunately, a set of philosophical ideas that make the study of those metaphysical conceptions very difficult. But if we can get at these concepts and understand them—get below them in the sense of standing under them—then we can explore the possibility that there might be ways of broadening the appeal and application of science, which is, after all, one of the central themes of technological culture, rather than just rejecting the whole process altogether as some sort of dreadful mistake.

History is Verily the Queen of the Sciences

One way to explore the worldview of any age is by noting the recurrent problems of its philosophers. For t modern world a major concern is what is known as "t problem of knowledge". Since Descartes the main cu rent of speculative inquiry takes for granted that inquiry into the nature and possibility of knowled itself is preliminary to the investigation of any oth issue. That's to say that the question of whether we c know anything at all comes before all other issues. N that's rather strange because if you look at the medie world or the ancient world, this just was not the ca The "problem of knowledge" was not a problem! On t face of it that seems rather strange, given the expone tial increase in factual information over the past 6 years. One would have thought it would be them rath than us with this difficulty. So what has happened to compared to our medieval forebears?

For example the world of a philosopher of the medie period—of St. Thomas Aquinas or Robert Grossete —was a world in which nature existed for man's sake a was immediately and fully intelligible to him. "Su stance" and "essence" and "quality" were the categor used to organize facts and relations observed by man his unaided sense perception. That is to say, the world the medieval was a world which was instantly perce able. There was no gap between man and what he sa

The world of modern science, on the other hand, i highly counter-intuitive world, in which what scien tells us about the world and what we see the world to are in two completely separate camps. Scientific categ ries have now become "space", "time", "mass" a "energy". Man is just a temporary and chance product a blind and purposeless nature. His ideals, hopes a aspirations are his own creation and have no place nature. Mother Earth is but a speck on the outer rim a not very significant galaxy. And even man's place it is recent, temporary, precarious.

How has this happened? How is it that we've dispossess ourselves of the world? How is it that in developing technology and a modern science we've lost our place nature? I propose to discuss briefly some of the even that led up to this. Because although it seems as if t world as described by science—the world of mathem ical number and shape—is an inevitable world, it by means is. When you look historically at how these ide have occurred, you can see that the origins of the categories lie not in some profound insight into t nature of reality, but rather as starting points, toc methodological decisions, that have been taken people to help them in their task of analyzing the wor

So, to start, I would suggest that history rather th philosophy is the best way to try to understand t process. There are countless books of philosophi analysis that argue about the inevitability of theoreti concepts in experimental discourse, and how prec

ceptions color everything we see. One can read Thomas Kuhn, say, or any philosophical historian and find these arguments laid out in great detail.

I'm convinced, however, that a much easier way to approach this issue is to try to get into the mind state of various scientists who lived before the present day. Because it's my contention that those people did have complete worldviews. And if you can understand their worldview, you can see how ours has grown by accretion, so to speak, from theirs. So what I'd like to present here is a brief history of how the chief scientific preconceptions have come to be from the earliest times and then discuss what insights about science and humankind's relation to nature such a historical treatment could give us today. I'll take the notion of the ideas that one generation has bequeathed to the next as a way of guiding us through the material, but even so the rich tapestry that unfolds must make mention of the many social and religious influences such a central activity has inevitably entailed.

Although it seems as if the world as described by science—the world of mathematical number and shape—is an inevitable world, it by no means is. When examined historically the origins of these categories are found to lie not in some profound insight into the nature of reality, but rather as starting points, tools, methodological decisions . . .

The Archeology of Knowledge

One of the most intriguing questions is to ask how scientific thinking came about at all. Can we find, for example, a point in time where it began? Surely that at least will give us clues to its nature. Not surprisingly, many people have indeed asked this question, and a great deal of information has been obtained about how the ancient cultures viewed the world. Unfortunately actual texts are scant, particularly for the early Greeks, due to the tragic loss of the great library at Alexandria in which so many of their writings were held.

Probably the first people to mention are the Babylonians. Their own culture dates from about 2500 BC to 500 BC, and they founded the mathematical description of the movements in the heavens and the systematic use of herbs in situations of illness. Please excuse these rather cumbersome ways of expressing their legacy, but you see they are not normally called scientific in any formal sense. The reason is that, although they gathered an enormous amount of information, there was no attempt to order the information into any causal category that we might accept as scientific today. Specifically, they saw the explanation for what they observed in the heavens in terms of the behavior and habits of their gods (whether, for example, there was discord or harmony in the heavens), rather than in terms of the natural rhythms and laws that we would understand as scientific today.

That way of looking at nature changed, and changed very dramatically, in the beginning of the sixth century BC in the Milesian colonies on the edge of mainland Turkey. What had happened was that the ancient Greek world had been invaded from the north by the Dorians. The indigenous people had been pushed farther and farther down into the Greek peninsula, and some had been pushed out of Greece altogether to form new colonies on the edge of Asia Minor. These were refugee cultures, made up of many peoples thrown together from all over mainland Greece. This is perhaps the reason why, rather than the theocratic kingdoms that were universal in the ancient world, these communities formed themselves into an early form of democratic government in which important issues were put to a vote in an assembly of the founding elite, and city and land were called the polis.

So these people were disconnected from the old world, the world of natural magic ruled by god-kings. And it seems more than a coincidence that with the democratic structures they then formed, places where they could debate political issues, issues about citizenship, issues about law, they also originated what to a modern eye is the first attempt to create a science of nature. In a direct analogy to their own society, they saw the natural world as no longer just in the lap of the gods, but a kosmos, a lawlike world, similar in kind to the new world of human lawlikeness and order.

Now this conception of the essential lawlikeness of the natural world is the first metaphysical conception that underlies all of the Western scientific endeavor. It has been challenged many times, in the medieval period as we shall see later, and of course by the many systems of natural magic that are so important today. But a belief in the regularity of natural processes independent of man's endeavors is the oldest determinant of the Western conception of nature, and is correspondingly deeply held. Not surprising is the seemingly irrational resistance of many modern people to a different way of seeing their world. ➢

Belief in the regularity of natural processes independent of man's endeavors is the oldest determinant of the Western conception of nature—though it has been challenged many times.

The desire to discover an enduring reality behind the changing world of the senses became a dominant concern.

The belief in regularity leads to two other questions, and in a way the triumvirate so created has played like a fugue through the millennia that have followed. The first of these concerns the nature of substance, and discussions about what matter—physical stuff—is, concerned the early thinkers in this tradition. What lies behind astronomical phenomena, earthquakes, winds and rains? Is it one thing or many? Indeed the desire to discover an enduring and unchanging reality behind the changing world of the senses was a dominant concern of all the scientific thinkers that have followed.

The first great thinker in this tradition was called Thales, a semi-mythic figure, a land surveyor, astronomer and geographer. Although remnants of the writings of this man are scant, it is clear that he proposed that underlying all phenomena was indeed one primal stuff, and that he called "the moist". Water could form ice, a hard solid, and steam, a vapor like the air, as well as the liquid in which it was normally found. Such a transformation seemed to be the essence of natural phenomena. Others who followed him proposed other solutions—air in one system, other systems even invoking the concept of the void, the boundless. But in all these systems the universe was conceived of as a living thing, in which the rearrangement of the primal stuff gave birth to all forms. And abstract and philosophical though such ideas were, there was a continued attempt to justify them, not in terms of belief, but in commonsense analogies to natural processes. Science was being born.

But if there was just one stuff underlying all, how could change happen?

Not long after, however, the other great issue entered the picture, the concept of change. And it did so not as a further development of the early ideas, but as a criticism of them. If there was indeed just one stuff underlying all things, then how could change happen at all? Surely change as such would be impossible. Such issues were raised in what are now known as the Eleatic dilemmas, named after the town in Italy where the first great Eleatic philosopher, Parmenedes, lived and taught. He argued, for example, that an arrow can't move even though it is flying through the air. The logic was simple. At any time it's occupying its own space, and since space is stationary, it must therefore be resting moment to moment. When indeed can it move? Change, as we observe it, must therefore be an illusion. He put forward other arguments too, such as those showing the infinite size of any object, and of the famous puzzle of Achilles and the Tortoise, to show that the simple analysis of phenomena in terms of just substance could not do justice to what was to be observed in the everyday world. Arguments of this sort evidence a new rigor entering the current of Greek thought, a rigor that, combined with the continued inquiry into the nature of things, formed the background to the two giants who followed, Plato and Aristotle.

The Problem of Change

For there were two solutions in Greek philosophy to th problem of change. The Eleatics had shown that th conception of substance had to be broadened to allo for its identity to persist through change.

Plato's Solution (Mathematical Proof)

One answer to the problem came from the Platoni approach. Plato talked of the world of the senses, th experienced outer world, as the source of an illusion, th illusion of change. Of this outer world, ultimatel nothing can be said. But at the same time Plato was ver influenced by the ideas of Pythagoras, and therefo developed the concept of mathematical proof as a mean by which one *could* obtain certain knowledge. Howeve this certain knowledge was of an inner, ideal world—t world that lay behind the sensory world and gave ultimate meaning. Certain knowledge could only b obtained through mathematical expression and proo the evidence of the senses was merely a shadow of th ultimate reality. Change was accounted for by the simpl rearrangement of the physical, seen in terms of fiv fundamental forms, themselves modeled on the fiv regular solids. Mathematical certainty was reflected i the physical world.

This idea was espoused in his cosmology called th *Timaeus*, which is a wonderful emanative system i which ideas taken from first principles, from the ideas o the roundness of shape, or the unity of number, a followed to their ultimate manifestation in the world o matter. Indeed such an enthusiasm for mathematics an the belief that stuff is ultimately mathematical can sti be seen in the world of the physicist today.

Aristotle's Solution (Logical Categories)

But there is another possible approach to the problem o change and the extraordinary multiplicity of the pe ceived world, and this was explored by Plato's studen and successor, Aristotle. He argued that the qualitativ differences seen in the natural world—the colors, th shapes, and the smells, for example—could not b accounted for solely in terms of mathematics; othe essential attributes must be included. And it was Aristotl who was the first person to realize that you could link definition of a thing to its substance by using th concept of form, and so approach certain knowledg even through the evidence of the senses. That is to sa that he realized that the shape and appearance of thing although changing, could be a source of knowledg Both Plato and the early thinkers had looked for wha lay behind the world, be it some single substance or mathematical reality. Aristotle rejected that; know edge for him was right in front of his eyes.

You could define things in terms of their characteristic then arrange such characteristics in taxonomic hiera chies, and come to quite general statements, statemen

rue of many things, the so-called niversals, in terms of which any particular thing could be defined. So nstead of retreating from the possiility that certain knowledge could e had from the sensory world, and positing the only true knowledge as eing the mathematical, Aristotle et out a program by which the uniersal could be discerned in the paricular, and hence true knowledge ound.

This line of thought is the other major route that has come down to us in the other great pole of the sciences, the study of biology. Although the ultimate substance may be unknowable, by classifying things in terms of their shape and size, et cetera, you can organize them nto logical categories. And those categories can tell you he essence of the things themselves.

Aristotle was a wonderfully rigorous thinker, and cre-ted the methodology, the mental technology if you ike, to enable his researches to be carried out. In a real ense, one can say that although in Plato one sees the irst dialectic argument, it was Aristotle who system-tized, perhaps even invented, logic itself. Aristotle was he first scientist in this tradition to develop a logical tructure for scientific knowledge wherein one can see ow general principles underlie the given sense experi-nce, and it is through Aristotle that the main structure of modern science comes.

n fact it is Aristotle and Aristotelean science that first oined the word "science". Scientia. Scientia means reasoned knowledge through causes". However, causes or Aristotle are not causes as we might understand hem. Aristotle was a biologist interested in taxonomy nd shape; and Plato was a physicist interested in math-matical structure (isn't it extraordinary that these two pproaches are still very much with us!). But in the ncient world these two modes of scientific knowledge were both fundamentally classificatory. For Aristotle, it was logical classification and for Plato it was mathemati-al classification. But in no sense was there any attempt o get at causes beyond the level of classification.

The Structure of Greek Science

The overall structure of Greek science shows this posi-ion clearly. It was organized into three parts: the study of physics, being the study of all things that change; the tudy of mathematics, the study of abstract quantity; and he study of metaphysics, the study of being as such.

Truly universal knowledge, simple yet profound. Thus it was that Plato could write, in three dialogues, not only complete cosmogenesis (the *Timaeus*), from the Godhead to physical matter, but also a complete history

Aristotle was interested in taxonomy and shape—a biologist. Plato was interested in mathematical structure—a physicist. Isn't it extraordinary that these two approaches are still very much with us!

of how all institutions of human society have come into existence from the beginning of time to the present (the *Phaedo*), and a treatment of the ideal society, from first principles to the formulation of just laws (the *Republic*). Aristotle was equally encyclopedic in his inquiries, with 146 works covering our modern categories of mechanics, biological topics, ethics, politics, aesthetics and metaphysics. Amazing.

This body of knowledge was added to but never surpassed in the ancient world. Aristotle's academy ran on to the fourth century AD; Plato's thought was similarly influential, and indeed was added to in the late revival called Neoplatonism that was also very important in the Roman world. Other philosophies, notably Stoicism and Epicureanism, came and went as the Greek city-states gained Empire under Alexander the Great, but for our story it is the rise of Christianity in the late Roman Empire and its survival through the ages of chaos that followed the final fall of Rome that must hold our focus.

In the tremendous upheavals that followed the fall of Rome, much of the ancient corpus was lost from its homelands of Greece and Italy, but it had spread by then, and major translations had been made into the Syrian and Arabic tongues from the great centers of learning established in Pergamon and Aleppo and other cities in the Middle East. A continuity was thus maintained via the world of Islam, and it was translations back from the Arabic, notably in Salerno in Italy and the Islamic cities of southern Spain, that reintroduced the works of first Plato, and then Aristotle, to an awakening European world.

The Natural versus the Creator

But the Europe that recovered Greek knowledge in the twelfth century was fundamentally different from the world the Greeks lived in. The early Christian church had been actively antagonistic to the secular knowledge of the Greeks, evidenced in the famous quote from the early patriarch Tertullian:

> What has Athens to do with Jerusalem, the Academy with the Church? We have no need for curiosity since Jesus Christ, nor for inquiry since the Evangel. ➢

The Europe that recovered Greek knowledge in the twelfth century was fundamentally different from the Greek's world.

The Church posited a "Creator God" who could change the rules of physical reality; whereas for the Greeks these laws had been inviolable.

In particular, the Church posited a world made by a "Creator God", a world in which physical reality was subordinate to the human, and the human to the Almighty. Thus God could change the rules of physical reality any time. He could stop the Earth. He could make the Earth go backwards. He could move the planets around. The creator was both active and omnipotent in his creation.

This important element in the Christian dogma gave the medievals a real problem assimilating the earlier Greek knowledge. They could see, on the one hand, that Greek knowledge had a logical coherence that they needed. Europe was a burgeoning society, with a growing merchant class displacing the traditional structure of serf and noble that had sustained Europe through the so-called Dark Ages with their continuous invasions from the peoples of the North and East. But the invasions had stopped and the population was growing in new ways. A more coherent, more universal form of knowledge was called for to supplement the traditional diet of faith and morality.

The Greeks were the obvious source to go to, but their worldview was based on a conception of order in which the natural laws were inviolable, untainted by the Creator who was seen as outside his creation. Neither could man effect them, for he was merely a part. How could such a view not be seen as essentially atheistic—a challenge to the power of the sacraments and the role of the Church?

As we have seen, there were, in effect, two strands in Greek knowledge: the Platonic and the Aristotelean. And indeed there were two strands of European reaction to them. The first strand that was recovered came from the Platonic corpus. Plato's writings, particularly the *Timaeus*, were far more congenial to Christianity than the Aristotelean writings. Because the *Timaeus* was emanative it inherently postulated a Godhead that had created the world.

St. Thomas Aquinas tried very hard to work around these problems but all his works were banned shortly before his death.

So the medievals didn't have that many problems in Christianizing this particular Greek idea. Indeed, the later developments of Plato's thought—the Neoplatonic and Gnostic teachings that were current at the time of Christ—were so similar to the Christian faith that the early Christian church had a lot of trouble keeping the Christian Faith a separate entity. And although these teachings had undergone further development in the world of Islam, they were nonetheless readily assimilated into what was a very different belief system.

The Metaphysics of Light

The first people in Europe to assimilate Greek ideas, particularly Platonic ideas, into a scientific structure worked in Oxford in the twelfth century and were called the Oxford Platonists. Strongly influenced by St. Augustine, the fourth-century Church father who attempte an early synopsis of Christian teaching in the presenc of Neoplatonic ideas, the physics of light assumed central importance as a symbol of the link between Gc and man.

Most famous of these twelfth-century thinkers was Rol ert Grosseteste, Bishop of Lincoln. In his writings h discussed both the ideas of the *Timaeus* and the an lytical scheme laid down by Aristotle. But somethin new can also be found in his writings. For although h accepted the Greek model that one can, through indu tion, express the particular in terms of the general, h added something else.

He added that one can confirm what one has discovere through the process of analysis by checking the ne results against the natural world. That somehow one ca put one's general inductions about the physical world t experimental test. This was a novel addition to th ancient writings. And yet it emerged in the work of th chap as if it's a perfectly normal conclusion to come t He said it's obvious that one's general inductions can be checked in any obvious sense; they're classificato things, so how are we to know if they're really true? Th only way we can know is to somehow or other put the to experiment.

Why this should have occurred is a central question if v are to understand how the modern scientific view cam into being. It has been often overlooked in past histori of scientific development, which place the beginning modern science, the process whereby nature was a tively investigated rather than merely classified, firm in the sixteenth century, in what is called the scientif revolution. They point out that it is precisely th willingness to investigate rather than merely analyze th physical that is a crucial break with the older ways seeing the world.

Now this may in part be right, for it is certain that th experimental interrogation of nature, although seen a logical and methodological necessity by these twelftl century thinkers, did not in fact occupy much of the time. Grosseteste, for example, although giving th clearest examples of how experimental verifications a to be carried out, and indeed discussing the consequer problem of knowledge a full five centuries before Hum did not mention the possibility of an exploration nature beyond the mere confirmation of analytical co clusions. His main concern, in his high ecclesiastic position as bishop, was to make sure that the Gree knowledge did not somehow contradict the receive knowledge of Christendom.

But why should the possibility of experimental verific tion be an important issue for him at all? Answers a hard to come by. One strand is the contribution of th

Arab commentators on the ancient writings, particularly Avicenna and Averroës. These authors, whose works became available before those of the Greeks themselves, stressed the importance of the different styles of analysis needed in order to understand the functioning of natural objects as apart from the pure logic used in mathematics and geometry. But the Arabs didn't cross the boundary between the analytic and the exploratory either.

For Aristotle the natural was sacrosanct. To alter it through experiment would have implied unnatural influence. But for the Christian, the natural was a created entity—made for the use of man. It was this fundamental difference that made possible the development of experiment.

The key, I believe, for this centrally important development lies in the different conception of nature that occurred in the Christian world. The process starts in St. Augustine, who replaced the ancient interest in the study of nature as an end in itself with a different conception, that nature should be studied as a "sign" of God. Since God had created the natural, some knowledge of him could be had from its study.

For Aristotle, the natural was sacrosanct, the key to true knowledge. But for the Christian, the natural was a created entity, created perhaps in the image of God, but made for the use of man. It was this fundamental downgrading that made possible the later development of experiment. Nature was not an end in itself, it was there to be used. For Aristotle, even though he supported the observation of the physical world, the alteration of it through experiment would have implied an unnatural interference with the physical world, and hence be barred as a source of true knowledge. So verification through experimental test became a possibility for the first time in the work of these early medievals. And although it took another four hundred years, exploration using the same metaphysical justification, with all its attendant benefits and problems, was to follow.

The Synthesis of St. Thomas Aquinas

But I run ahead of events. The main interest in the medieval assimilation of the ancient writings was one of religious orthodoxy rather than scientific exploration. And Aristotle posed a much greater problem than Plato in this respect. The medieval who tried to Christianize them was, of course, St. Thomas Aquinas, and problems arose because Aristotle's categories and his ways of examining nature allowed no room for a Creator God. His forms are immanent in nature. They're not mathematical, outside of nature. His categories belong in the thing he's studying. So from the very start, Aristotle's thought was threatening to the Church authorities. In fact Church officials were quite concerned that the scholastic corpus of Aristotle's thought would lead straight away to materialism, a view of nature in which no other realm than the physical existed, with no place at all for God the Creator.

Aquinas tried very hard to work around these problems. He wrote extensively on transubstantiation (how the body of Christ is meant to appear in the bread and wine at Mass), on the resurrection of the dead, on the existence of miracles—all of which were things important to the medieval Catholic Church and yet specifically disallowed in Aristotle's writings. And indeed, in the end, it seemed that Aquinas had failed, for all his works were banned shortly before his death in 1277. But perhaps it is the way of things, for it was not long after that that he was canonized by the same authorities!

With the banning of Aquinas, interest again centered on issues of method, issues of proof.

The banning of Aquinas was an epoch-making event, however. The Church fathers had realized that they would never incorporate these Greek ideas into any thoroughgoing Christianized view of nature and they really put the brakes on the further assimilation of Greek knowledge. But something very interesting happened as a result. Rather, as in the case of the Arab commentators, interest centered again on issues of method, issues of proof. What slowly developed was the logical apparatus that was to underwrite the developments to come.

The first immediate phase saw a skeptical reaction to the overwhelming reliance on logic and proof that had characterized the writings of Aquinas. Duns Scotus and perhaps more famously William of Ockham began to stress the separation of man from nature—that there was no necessary relation between God and his creation save the impossibility of his acting in contradiction to Himself. There was no solid and unalterable base from which He and his creation could be derived, that ultimately the stuff of the outer world was unknowable and could only be studied without any preconception whatsoever. Knowledge could only come from direct awareness (of the physical) and inner guidance (for the spiritual).

William of Ockham began to stress the separation of man from nature.

It's worth pausing for a moment to dwell on the worldview of these people. The universe was believed to be a set of

to page 33 . . .

It's possible
that there is no minimum,
there is no smallest thing.
It's possible that [the universe]
is like an infinite onion
that you can keep on
peeling layers off,
and every time you probe
to smaller distances
using a higher energy tool,
you'll discover still another
layer of the onion.

Burton Richter, Director
Stanford Linear Accelerator Center

There is nothing so small
but that there is something smaller.
There is nothing so large
but that there is something larger.

Native American saying

photo by Steele Photograp

A Native American Worldview

Based on a Presentation to the Board of Directors of The Institute of Noetic Sciences

by Paula Underwood Spencer

Paula Underwood Spencer is responsible for one traditional way of knowing. Passed down with what she calls "meticulous care" from her grandfather's Oneida grandmother, this tradition contains vast oral histories, some related to the first settling of North America; an extensive educational structure, part of which has been declared "an Exemplary Educational Program" by the US Department of Education; and a specific shamanic tradition called The Strong Spirit Path. In this article she relates her Native American educational and shamanic trainings to Western science. Paula Spencer also holds an MA in International Affairs/Communications and has extensive experience with organizations and government in Washington, DC. She describes herself as "still looking for words and phrases with which to share more effectively the ancient tradition".

First I want to explain to you the base from whi
I'm speaking. My grandfather's grandmother w
Oneida. She became responsible for an ancie
tradition and for passing it along. She did this becau
she was both a Healer and a Spirit Healer. During wh
was, in effect, her internship, she was assigned a m
who was slowly dying. That man, as it turned out, w
dying of grief. She learned this very quickly.

This was a test for her, by the equivalent of the Comm
nity Medical Board, to determine what kind of heal
she was, and what she would do.

She pinpointed the cause of his grief: He was the Keep
of the Old Things. He had not been able to find, duri

his very long life, anyone at all who would take the time to sit with him and learn all of these ancient treasures. This was because of the oncoming tide of the Pale Ones.

Therefore as part of this man's therapy, my grandfather's grandmother began to learn these things from him. And immediately his condition improved. He got better and better.

Now her purpose in life had always been to be a Healer. So during this therapy she thought she would find somebody else to learn all these things from him and pass on the responsibility. But she was never able, in three decades of trying, to find anyone at all who could learn this from him or from her. So she finally accepted maintaining this tradition as a family responsibility. The idea was to perpetuate this ancient wisdom as far into the future as necessary, until Earth's children grew Listening Ears.

Black Elk, whom some of you will know, said that it was the fifth generation that would grow Listening Ears. In this specific tradition, I am the fifth generation. In my own lifetime I have discovered that people have indeed grown Listening Ears.

Now—my father's idea was that I should wait until I developed some grandmother wisdom before writing this down. In other words, I needed to live through the life cycle before trying to commit to paper all of these ancient understandings. My grandfather had given up a career in medicine to spend his time learning all this from his grandmother. He then passed it on to my father after a great deal of testing.

I don't want to give you the impression that this transmittal is based on automatic lineal descent. It's not. In this tradition a man learns these things from a woman, if possible, and a woman learns them from a man. That way you keep things in balance. It gives you an understanding of the other half of life and prevents some of the competition that can often come in when you learn from someone who is also male, also female.

My father's responsibility was to find someone who would have the natural proclivity, the motivation, and the latent skills to learn all this. I went through extended periods of testing with my father, not pass/fail tests, but evaluations. There's a lot of evaluative testing that goes on in this tradition. (See accompanying box.)

As a result of 15 years of careful exploration of ways to share these things, the first book to be published out of the three Basic Learning Stories has received three national awards, one of them being recognition by the US Department of Education as part of an Exemplary Educational Program. The three Learning Stories represent Body, Mind, and Spirit. We hope to publish them together soon. ➢

Learnings in Sensitization

There are many kinds of sensitization processes that you have the opportunity to go through if you choose. You get many kinds of testing to evaluate how you think. The idea is that everybody learns, but you need to figure out *how* a child learns in order to design a learning circumstance in which each individual can teach themselves. The idea is always to teach yourself. In fact there is no word "teach", or there didn't used to be, in the fundamental language.

Then you go through mind transfer situations. One of the ways oral history can be handed down is in visual form. How do you do that? When my father was teaching me we sat in the garage. You have to have a sacred place for learning, and the fire laws of California prevented us from having a traditional sacred place, so we had to settle for the garage. My dad would be just sitting there staring at the back wall, and he would say, "What am I looking at?" It wouldn't take me very long to figure out he wasn't looking at the wall, and he wasn't looking at the gunny sack that was hanging there, or the hoe, or the rake, and all of a sudden I said, "Oh, you're looking at a mountain." "What kind of mountain?" And then we would go through a long process of description of every inch of the mountain.

Then, he would say, "Try this," and all of a sudden I realized I was looking at a tree, one I hadn't seen before. Then he would take me for a little walk maybe several days later, and all of a sudden I would say, "Oh look, there it is!" So, you test whether this is working all the time. Then he would come home from work and he would say, "You know what I was thinking about today?" and that would just click and I would say, "Yes I do—you were thinking about . . ."

My dad was functionally illiterate, he was so dyslexic. This worked out very well because his mind wasn't distracted with academic things, as my grandfather's mind had been, because he was a very educated man. My father had a very simple job, where he didn't have to do anything but physical labor. He'd get himself into the swing of his work, and then he'd just start figuring things out, maybe my lesson for the next day, or maybe "Let's see if she can pick this up." So the thought would just come to me. And then he would find some way of establishing whether or not I had picked up his thinking accurately.

Then at that point, when you've checked, double checked, triple checked, quadruple checked, at that point you begin trying to hand down some of the visual information. So I have stored visual information to which I would give a very high probability of accuracy, maybe 96%. And I went through all these excruciatingly detailed testing processes first.

The Consensual Oral History, under the title *The Walking People*, has also been written down. It is about 700 pages long. It goes back to before what logically must be the crossing of the Bering Strait, which was called at that time Walk by Waters. There is a great deal that precedes that event, so it is indeed an ancient history, which has been maintained down all these generations.

Now—one of the difficulties of my path through life has been to find ways to express these ancient ways of knowing. I knew from the time I was a child that I would need to take the step in my generation of stating these things in English. I wrote a thought piece a while ago which refers to the problem of "catching a concept in a net of sound patterns called English". Sometimes you can do that and sometimes you can't. I want to speak to that briefly.

Years ago I took a class in parapsychological research. The idea was to get an updating on all of the latest in Western scientific studies. I had a terrible time. I wanted to get up and run screaming from the room. Often! And I thought, what's going on? What is my problem?

Then I realized that the problem was language. The language was driving me crazy. In my tradition, for instance, the process of going somewhere when your body stays here is called Spirit Walking—because that's what happens. The Spirit Walks. It *feels* like moving forward, like walking. In English it's called Out-of-Body Experience. Well, in my tradition, that's considered dangerous. You don't want your whole Spirit out of your body because you may not find your way back. You handle it in a different way and you speak in terms of Spirit, rather than Body. So, all of these body-related terms bothered me.

Finally I went to the teacher and told her my problem. She asked me to make a presentation to the whole class explaining this. The whole class spent some time making up new terms in English. Over the years I have found ways to deal with this, which do not include leaving the room. And this has worked reasonably well.

When you talk to Native American people you need to understand that most Indian languages are much more verbal—that is, verb-oriented—than English. English has worlds of nouns. The Iroquoian languages—which is my tradition—have nouns also, but not so many. The Hopi, I understand, have no nouns at all. Everything is described in verbal terms.

You would not for example call Paul Temple over there the Chair as much as you would call him Man who sits at head of table. This tells you something. You go through the thought process of placing him at the head of the table (in the North) and thinking about his behavior, rather than just announcing who Paul is, what his title is. It becomes extremely difficult, painful, agc nizing sometimes, to try to say things in English, becaus you're forever jamming things into categories that don work and making yourself think in ways that aren natural to you.

Now—the tradition that I come out of says: If you wan to be truly understood, you need to say everything thre times, in three different ways. Once for each ear . . . an once for the heart. The right ear represents the ability t apprehend the nature of the Whole, the wholeness c the circumstance, the forest. The left ear represents th ability to select a sequential path. And the heart repre sents a balance between the two.

How do you choose a Path if you haven't looked at th Forest?

If you've only admired the Forest, where are you going i Life?

The distinction that I want to make between Wester science and the approach to science which my traditio and perhaps other Native traditions, have found usefu . . . is that first you look at the Forest . . . and *then* you loo at the Path. We had a speaker earlier, Michael Murph who described a process of acquiring sensory data an then testing it. This is the reverse of my tradition, whic is that you first acquire an intuitive, whole understanc ing, and then you focus on a Specificity and examine i and then you *always* put it *back* into the Whole.

Now—when you examine anything, you examine it firs with your mind. When I was a child, if I were trying t understand the process of a leaf growing, for example the idea was to sit and think, allow my thoughts to flo into the leaf. Only after I was completely satisfied wit my explanation would I ask the plant's permission an hold it in my hand. So you go through sort of a mirro image, a reversed image of the process of Wester science.

We were talking earlier about the difference betwee the Western way of understanding, the Eastern way, an the Indigenous way—the Native American perspec tives and approaches. It strikes me that the Wester tradition represents body because it's always looking a things out here at arm's length. It's using microscope it's using all kinds of tools to look at things, to take ther apart. That's changing, but this has been the under standing. The Eastern approach uses Spirit—yo meditate, you breathe, you apprehend the nature of th Universe through your Spirit. I think the Nativ American tradition, at least the one that I understan and grew up in, represents Mind. Because, as I say, yo let your thoughts precede you. You let your thought flow into that circumstance to understand it.

to page 19 . .

Hawk and Eagle Both are Singing

A Comparison Between Western and Indigenous Science

—in which the author attempts to share the relevance of her shamanic training to Western science—

As a part of the Native American training I received from my father, one of the aspects of perception that I was asked to understand was the distinction between Hawk and Eagle, between the way Hawk perceives and the way Eagle perceives. In this shamanic tradition, you gain that appreciation by what is considered to be direct experience. However, the distinction—once learned—is easily translated into Western logical sequential language structure.

Dictionary definition of "science" - "Originally, state . . . of knowing"

When hunting, Hawk sees Mouse . . . and dives directly for it.

When hunting, Eagle sees the whole pattern . . . sees movement in the general pattern . . . and dives for the movement, learning only later that it is Mouse.

What we are talking about here is Specificity and Wholeness.

Western science deals from the specific to generalities about the whole.

Indigenous science begins with an apprehension of the Whole, only very carefully and on close inspection reaching tentative conclusions about any Specificity.

Indigenous science is based on a profound immersion in and awareness of the whole circumstance. Rather than mistrusting personal experience, Indigenous science has learned to thrive on it. The standards for personal honesty are excruciatingly exact and taught from earliest childhood. Educational structures like the Vision Quest have as one goal coming to terms with accuracy outside of or devoid of your own assumptions or the assumptions of your society. The idea is that you are always — if you are wise — moving toward enhanced accuracy. You will never entirely arrive at complete accuracy, but you are constantly trying to move in that direction.

As to the efficacy of Indigenous science, let me give you one example.

Since Universe is Energy, part of the process of understanding, at least as I experienced it, is to learn to "see" flows of energy and specificities of energy. Both are necessary. Because, you see, Universe is both Whole and Specific. Western science is beginning to understand this through explorations of theories about particle and wave. Both the particle/ particularity/specificity of Universe and the wave/flow of Universe were aspects I was encouraged as a child to apprehend and understand. I was asked to "see" the "dancing points of light" and then to apprehend the shift from location to flow. Much of shamanic practice has to do with developing the ability to enter and use this shift.

So when I read that the Western science of physics was looking at particle/wave theories, I had no trouble with that at all. Instead of being startled or surprised, I was given a wonderful gift—the ability to communicate more easily some of the things I learned in the shamanic process of understanding Universe.

To the extent that Universe is Whole, location/time is irrelevant. To the extent that it's Specific, relationship is a better construct than either time or location for purposes of accurate understanding.

The process of Indigenous science allows you to learn about and to experience the flow of Energy through Universe. You quickly come to understand (well, maybe it takes a while!) that Universe has a kind of binary on/off structure, which can certainly be stated as particle/wave. In the particle state, particles can be understood in terms of "location". But "location" requires a point of reference which is more or less fixed in relation to that particle.

Tell me now, where is that point of reference? Is it not also moving? Are you not also moving?

The Indigenous scientific approach understands Universe—or All Things—as constantly in motion. Even the particles are "dancing", already moving toward the flow state. Since everything is in motion all the time (oops, time is irrelevant!)—since everything is constantly in motion, any location is in constant flux in relation to everything else.

Ah . . . in relation to!

"All Things, All Things, All Things are Related" is not just a charming chant, designed to put you in touch with "all your relations", it is a profound evaluation of the nature of Universe. ➢

Language predicts the conclusions that we reach therein.

There is a great contrast between Native American languages in general and that logical, sequential construct called English. In general, it can and has been explained that Indian languages are much more verbal—that is, verb-oriented—than English. English uses an extensive noun/category structure which requires you to constantly decide which "category" whatever you are describing belongs in. Thus, in English, we constantly divide a whole Universe into semi-relevant parts. Indian languages in general don't do this.

Language predicts the conclusions reached therein. Understanding this, my ancestors consistently examined new words the way the Commerce Department examines applications for new patents, except that their usefulness was also explored, as was their impact on the culture as a whole. The Academie Francaise limits itself to examining the accuracy of French. My ancestors required a detailed cultural Environmental Impact Report!

That which enables, disables also.

From an Indian perspective, the "priesthood" nature of Western science is anathema. My own tradition disbelieves in "experts". "That which enables, disables also" means that a physicist will fail in understanding in many other areas, perhaps in too many other areas, precisely because of the amount of time she/he spends on physics and therefore not on other things. Such people are not considered "experts", but "those extensively informed on part of the whole". They are listened to not on a priesthood basis, but on the basis of their having information others may not yet have—just as vice versa.

The search for greater wholeness — which has no room for "expertise"— is unending!

Any highly trained person will of course have a particular view—and therefore has a *special* responsibility to listen before speaking in any discussion of what the people may choose to do. Any person in a group who gets out of touch with his, with her community, is separated therefrom. Although I don't think there is the same negative connotation as there is in English, a shaman out of touch with her, with his community takes on aspects of the wizard—an isolated person who can inadvertently or on purpose do things that are harmful to the community. The process of Western "expertise" would be seen as a process of encouraging people to be isolated from the rest of their community in some way.

If Universe is Whole, what causes what?

As I have said, Universe in its particle state has the quality of relatedness. Universe in its wave state partakes of flow. The particle state can be said, then, to have a quality of location. The wave state can be said to have a quality of direction. It is this movingness of Energy, this direction, that produces Change.

But look, if everything is in motion, what causes what? How can we say that this drop of ocean water pushes that drop of ocean—and that's why it moves! Rather, direction, flow, the movingness of Energy of its nature produces Change.

And here we have a problem with English. "Produces" means "causes". It doesn't mean that in my tradition. There is more a sense of evolution, a sense of cooperative evolvingness, of the Universal Reality acting through you and with you and with everything else—all at once. Perhaps "engenders" is a better term. Perhaps a better term has yet to be invented. In any event, in any shift from one language to another, much is lost in translation.

It seems to me that there are two aspects here that make Western science's preoccupation with causality sometimes counterproductive. (Remember, that which enables, disables also.) One is the probability of multiple causation. Laboratory experiments obsessively select out "causative" factors for experimental demonstration. This clarifies and obscures, both at once. It leads to situations in which, for example, a blood test run to determine "causation" of some dis-ease may not reveal the culprit, as "we weren't screening for that condition"!

It also leads to situations in which the results of isolated experiments are applied to the broader community with disastrous or semi-disastrous results. Mistakes are not ruled out by any discipline. But this kind of mistake (Love Canal, nuclear waste disposal) would be less likely in any Indigenous, Whole way of understanding the Universe in which we exist.

The other aspect I see that seems to me to question the relevance of Western science's preoccupation with causality, is: In a sea of constant movement/change—which the wave aspect of Universe certainly seems to imply—is causation a really viable way of understanding? ➢

So Hawk—the tendency to look at the Specific—and Eagle—the tendency to look at the Whole—have something to say to one another. And if they both listen, what is engendered is what is called in my tradition an Interactive Circle. Like Yin-and-Yang, each encourages the other toward heightened acuity.

In cultural terms, this has been going on for a long time. Renaissance Europe was preceded by the Crusades, during which Europeans developed a taste for foreign knowledge/science and technology—and they just kept it up! Much of "Western" science is truly based on earlier explorations by other peoples—Chinese, Muslim, Native American. According to my own oral history, for instance, Benjamin Franklin's famous key-and-kite experiment was his effort to try to demonstrate and understand better what he was hearing from some of his Iroquois friends—which was that Universe is Energy . . . and so on.

To learn to demonstrate through replicable, quantifiable experiments to those unwilling to spend the time to acquire shamanic skills—or whose culture has chosen to forego these skills—some of the things that can be learned through this Whole approach to Life . . . is no small thing! It is an invaluable contribution to human understanding . . . a second eye opened on the Universe to help give us some greater depth perception.

For me, Western science was and is that second eye.

Perhaps Indigenous science can provide that second eye for the West, to the greater benefit of one and all.

Hawk and Eagle—both are singing.

Let us hope they are listening to one another.

Kind thoughts come . . .

. . *from page 16*

Specificity and Wholeness

Now—there are general similarities in Native American approaches to life. But they are similar the same way European circumstances are similar as you go from Ireland to Turkey. There are enormous variations. But to a certain extent it's the same dance, from one end of Europe to the other. The similarities I see in many Native American cultures include such things as an absolute sense of the Wholeness of Things. One of the problems that Indian children often have in this educational system is that in school people are always talking about specific and separate things, but the Indian children may understand that it's really one interrelated whole. And this passion for separation just sounds crazy. You try to translate it from English into an Indian language and it literally sounds crazy.

So it's very hard for them to take this seriously. Very difficult. This was hard for me, when I began school, but my father kept saying, learn the system, learn the system. How can you learn to say what we understand in an intelligible way if you don't learn the system? So the idea is, learn the system and contribute in that way. And it *is* a very viable way of understanding life. What becomes dangerous is when any one way of understanding life is considered to be the only way, or the Right Way.

The idea of relatedness runs throughout all Native American thinking. Everything is related to everything else, everything is attached to everything else. So everything affects everything else. This gets into the causality issue that you've been examining here at the Institute. The idea that this-causes-that is simply impossible in Indian understanding, because everything is attached; everything has its own gravitational attraction. So you can say what I say comes out of my tradition, but what Michael said this morning has already affected what I say and the presence of the people on each side of me also affects what I say in an ongoing way, and that's the way the world works.

The way that this is stated in mythic terms is that Spider Woman created the world, and she did it in this way: In the beginning all that existed was Thought Woman. She was the totality of all that existed until Spider Woman came and took from that Whole Thought the specificities that were implicit in it and from these she spun the world in which we live.

You see how it is? Every place where a thread crosses a thread, that is an Individuation. And the continuing thread connects every Individuation to every other.

The idea of how Universe functions that comes out of my tradition, and I hear echoes of it in other Indian traditions, is that Universe is Space which contains Energy. Energy of its nature moves. As it moves it produces Change.

In the Western world we call that Change "time"—past, present, and future. But the idea is that it isn't time at all. It is Change—it was, it is, it will be.

Part of the process I'm describing is what I hear discussed in scientific terms at the present time as the distinction between wave and particle—is it wave or is it particle? And the answer is: yes!

In the shamanic tradition you understand the distinction and the interrelationship of Specificity and Wholeness. Particle is Specificity. Wave is Wholeness, the

direction that the energy takes. And you spend a great deal of time looking at each. I can't speak for all shamanic traditions. I suspect there may be something similar. But in the shamanic tradition that I'm familiar with you understand the world as binary. Now that's not good/evil, any more than light is right and dark is wrong. Dark is not wrong in relation to light. Light is not wrong in relation to dark. In fact, we need both. We need both.

So the binary nature of life gives us a multiplicity of yes/no choices from which we choose our path, constantly branching in the direction of our yes decisions. Each minute yes/no decision is a binary decision. Understanding this helps you understand another binary, co-equal aspect of Life. When you want to enter a different aspect of Life, you wait for the point at which Particle becomes Wave. And just at that split second before the Particle is gone and the Wave takes over, you enter between, and you become Energy. At the point where the wave becomes Particle again, you enter between, and you re-become who you were or you make a different choice. Which is also possible. I think it is that space in which healing occurs.

The critical thing is to understand that Particle and Wave co-exist.

In one of your papers on Perennial Wisdom it says that the Native tradition is nature-focused. I would like to modify that a little. I would like to say that Indian traditions are nature-inclusive. You do not see man and nature as separate from each other, but you see yourself in the context of an interrelated whole instead.

The Rule of Six

One of the attitudes taught in my tradition is the Rule of Six. The Rule of Six says that for each apparent phenomenon, devise at least six plausible explanations, every one of which can indeed explain the phenomenon. There are probably sixty, but if you devise six, this will sensitize you to how many there may yet be and prevent you from locking in on the first thing that sounds right as The Truth.

But your task isn't over yet. Because you can't just float on a multiple option basis. Now your task is to apply your life experience, which is unique to yourself, and use it as a base to evaluate each of those options. Now you assign a probability factor. That probability factor can never be 100% . . . and absolutely never zero.

You keep a floating attitude toward life, but you constantly know where you are in that context.

When I was very young my father would stand me on m left foot and say, "Answer this question in the manner c the people." Wholeness. And then he would stand m on my right foot and say, "Explain this in a way that you mother would understand." Sequence.

Then he would stand me on both feet and ask, "What d you see now?" Because it isn't enough to do only one only the other. The critical thing is to strike a balanc between the two.

In my tradition you get mind puzzles a lot. One of th questions that my dad gave me as a mind puzzle wa "What is the sound of one hand clapping?" When discovered that that is also a Zen question, I was de lighted. I'm reasonably confident that they come fro the same source. I spent months trying to come up wit an answer, and I came up with all kinds of differen things. My father would say, "No, that's not really th sound of one hand clapping, that's . . ." Then, "No, that not really the sound either." And finally he suggested t me the kind of clue that you get under this pedagogi structure—"Maybe Eagle has the answer." And I kne immediately he was right, because of course Eagle woul understand the sound of one hand clapping.

As with all of his suggestions, I taught myself. Th process is called go-and-be-Eagle. You become Eagle i your mind and heart, and look at the world from Eagle perspective. As a result of that, you may come up with a entirely different concept of what the answer might b which limited to *this* body you could not have come u with, because this body doesn't work that way.

In this pedagogic tradition, nobody tells you what t think or how to process information. Instead, you dis cover it for yourself, you keep discovering it for yourse And only at the other end of this long process of sel discovery would my father say, "That's another genera tion that's reached that conclusion." In this case however, he said that my answer was a whole ne answer, that he knew of eight others, but that was whole new answer to the question. He didn't tell m what the other eight were at the time, and I won't te you what mine is now, because if I did, that woul prevent you from ever discovering it for yourself.

The basis of the learning, the basis of the pedagogy, is t cease preventing people from learning things for them selves. This way of thinking, what goes on in here, ca really be taught only from the inside out. When it taught from the outside in, someone else comes betwee you and yourself, and that's not considered a wise ide That's the tradition.

Hisako Naiki

The Case Against Competition Part II

by Alfie Kohn

Here is the conclusion from Alfie Kohn's talk at the symposium Beyond Conflict: Transcending Us vs. Them, held June 24-25, 1989, in Washington, DC (sponsored by Washington, DC, Institute members).

In Part I (Spring *Noetic Sciences Review*) Kohn cited extensive research which shows that competition—no matter in what amount it exists—is always destructive; that it is *cooperation* that promotes success, on the job as well as in the schools. He says, "Not only are external rewards ineffective as motivators, but they undermine intrinsic motivation—what's valuable in the task itself."

And he broadened the view of "human nature": "Nobody ever says, 'Why of course she helped him; it's just human nature to be generous.' That is why I moved on from my work on competition and cooperation to my next book, *The Brighter Side of Human Nature*, which deals with issues like altruism and empathy, and the extent to which these too are natural parts of human nature. I think the overall message I'm trying to urge with respect to competition and 'human nature' is not only that we should change, but that we can."

➢

A woman and two little boys in their swimming trunks got on the hotel elevator I was riding, obviously on their way to the pool. She said to them, "So, who's going to jump into the pool fastest?" And they said, "We both are!" I thought, How long can they hold out?

Where does competition come from? I have been working on this topic for about seven years, and I have not found a shred of evidence to support the common assertion that competition is an inevitable part of "human nature".

We have all the evidence we need to explain the way we subtly (and not so subtly) make sure it's reproduced from generation to generation. You heard the evidence about nature [see *The New Biology* by Robert Augros and George Stanciu in the Winter *Noetic Sciences Review*]. We can't appeal to nature to justify why competition exists—in spite of those exciting nature documentaries on TV.

Where does competition come from? I have been working on this topic for about seven years, and I have not found a shred of evidence to support the common assertion that competition is an inevitable part of "human nature".

(When I'd watch these shows, I'd think, well, nature is certainly red in tooth and claw—look at them going at each other. Of course, I'm not suggesting those things shown on TV didn't really happen; it's not like they had highly paid stunt wolves or something.) One reason we persist in the belief that competition is natural, despite all the evidence to the contrary, is that scientists live in this culture just as you and I do. *We take our understandin about social interaction and project it onto nature, and the read it back from nature to justify our own cultural practices* Friedrich Engels said that a hundred years ago, and it' no less true today. You can't use nature to explai competition.

If you look at cross-cultural evidence you find the sam thing. There are some cultures without any competi tion—in recreation, in education, in economics. Thos cultures are sometimes rather rudely called primitiv cultures, or, as I prefer to call them, non-VCR culture

This doesn't mean that we can or should be like them What it does mean is that we need another explanatio besides "something innate about us" to explain compe tition. If anything, we'd expect them to be closer t nature, so if it were indeed in human nature to b competitive and aggressive, they should be more so, nc less so, as Erich Fromm pointed out. In other words, *our* are the primitive cultures.

Needed: Another Explanation

The idea that aggression too is a part of our nature an thus unavoidable makes about as much sense as sayin that because oxygen blankets the Earth and fires nee oxygen that it's the nature of the planet for buildings t burn down. It makes no sense.

Even if aggression were universal, we could not conclud from that universality that it's in the genes; that's just clever and facile way to explain things away. Certainli there are some parts of the brain that, when stimulated make humans or other animals more aggressive, but tha doesn't mean that it is a matter of self-enclosed organ isms with a self-contained reservoir of aggressive energ that has to be let out somehow. That notion, popularize by Freud and Konrad Lorenz, has been more decisivel refuted than any other single old wives' tale on huma behavior I know.

And the idea that war is just part of human nature—tha is even more absurd. Rousseau said that war is not relation between man and man, but between state an state, and individuals are enemies accidentally. That why propaganda is needed, because otherwise w wouldn't be inclined to kill. There is no innate need fo an enemy. There is a need to understand social an political and economic structures, and why states g involved in this sort of process.

Alfie Kohn's new book, The Brighter Side of Human Nature: Altruism and Empathy in Everyday Life *(Basic Books) was published in May. He is also author of* No Contest: The Case against Competition *(Houghton Mifflin, 1986), which received the National Psychology Award for 1987 and is being translated into German, Hebrew, Japanese and Swedish.*

But even if we move beyond competition and aggression, we need to be very careful about the way we use that phrase "human nature". Whom does it benefit? Arguments that competition and aggression are part of human nature are profoundly conservative arguments masquerading as realism. Human nature arguments are used to silence dissent. "I like your idea for changing the way we do things, but the way we do things has been legislated by nature. It's just *the way life is*."

Why do we think this? For one thing, it's the easiest assumption available to us. If you look around and see everybody around you living in a particular way, you say, well, it must be human nature to live this way.

Another reason is that the people turning out the studies have been trained in terms of genes and hormones and neurotransmitters, and, as Abe Maslow used to say, if the only tool you have is a hammer, you will treat everything as if it's a nail.

The media are partly responsible, too, and to the extent that I write articles for popular culture I try to make a point of addressing this fact.

In 1986 experts in all social and natural sciences from more than a dozen countries met in Seville, and concluded that aggression is not an innate fixed form of human nature. Have you heard about the Seville statement? I sure hadn't. That's because nobody in the media was interested in covering it. One of the organizers told me that when he talked to reporters about the importance of this finding, one of them said to him, "Call us back when you find a gene for war." That is the bias that we keep getting.

As Jeff Goldstein of Temple University says, "If all you know about aggression is what you see on TV, what you know is nineteenth-century biology." That's what we get. There are many other, complex reasons as well.

The Reasons for Our Cynicism

Not only do we assume that there is a fixed human nature, we also assume there is a bad human nature. It's a two-step argument. The first is a kind of crass biological determinism, and the other is the specific belief that this nature we have is fundamentally flawed. You will recognize some of the contributors to the latter, in various ideologies ranging from orthodox psychoanalysis to Konrad Lorenz—to the notion of original sin, for that matter.

Leon Eisenberg, in an article in *Science* in 1972, put it very well:

> To believe that man's aggressiveness or territoriality is in the nature of the beast is to mistake some men for all men, contemporary society for all possible societies, and, by a remarkable transformation, to justify what is as what needs must be. Social repression becomes a response to rather than a cause of human violence. Pessimism about man serves to maintain the status quo. It is a luxury for the affluent, a sop to the guilt of the politically inactive, a comfort to those who continue to enjoy the amenities of privilege.

It's not only a mistaken belief but a politically loaded belief.

It has become cool to be cynical. You really risk if you say, I think there's something good here—that empathy, that helping, is as natural as hurting.

Dostoevski had one of his characters say, "The higher the stage of development a man reaches the more prone he becomes to cynicism, if only because of the increasing complexity of his makeup." A lot of us believe that to be "cool", in the sense of fashionable, is also to be "cool" in the sense of disdainfully skeptical.

And then there's a false dichotomy we set up. On the one hand we have those people who say that we're basically bad by nature. On the other hand we have smiley-faced Pollyannas who say everything is lovely and human nature is terrific, and anybody who acts badly just hasn't gotten in touch with his or her real nature.

We have to eliminate this false dichotomy. We have to understand that we're not denying the real evil that is done in our society and in other societies by affirming that there is more to us than just the competitiveness and the aggressiveness and the selfishness. It's time now that we debunk the debunkers.

The audiotape of this talk and others from the Beyond Conflict symposium are available through the Institute's mailorder service. Please write or call the Institute for ordering information.

See page 39 for a response from Olympian competitor Marilyn King.

The Institute is especially grateful to the Washington, DC, members and the symposium speakers who gave so generously of their time and resources to make this meeting a success.

Simple is Better

Simple is better.
The wave washes up on the beach, and then goes back.
Then the next wave comes.
Raccoons will drag away a fish you leave out.
The sun shines every day.

If left to themselves . . . people will find each other.
Simple is better.

Complications creep in . . . when we forget
simple is better.

Simple truth is . . . we already have everything.

The sun shines.
The wind blows.
The river runs.
The earth turns.

Time goes bye . . . space exists, for us
to <u>be</u> in.

Food grows on trees,
or sticks its head up out of holes at us.
And if left to themselves,
people find each other.

If you don't think simple is better . . .
O.K.

—Tony Basilio

photo by
Margaret L. Jackson

Signs of a World Awakening:

by Carol Guion

From birds eating overripe pyracantha berries to children whirling 'round and 'round, major species seem to delight in finding ways to alte consciousness. But lack of control, addiction—to food, tobacco, drugs—occurs in four out of ten people in the US. The problem of addiction addressed in many ways: from psychotherapy, nutrition, acupuncture to substitute drugs and incarceration. Perhaps the world is now awakenin to seeing basic prevention of basic human problems, by spending its physical and emotional capital on human health and happiness. Here are few chips off the iceberg, plus: a story on programs a Florida couple set up to memorialize their son, killed by a drugged driver; and a summar of the findings of California's Task Force to Promote Self-Esteem.

• Joseph Biden, chairman of the US Senate Judiciary Committee, citing their recent report that nearly 2.2 million Americans (1 out of 100) are cocaine addicts, points up the urgency for diverting funds from pursuit of casual users to more treatment for the 90% of the addicts who are not now receiving it (more than a few because there are not enough programs).

• US drug policy director William Bennett claimed the findings were based on faulty evidence. It certainly must be difficult to count addicts. Even Biden said that the report did not adequately measure the number of addicts in prison, in drug treatment centers or among the homeless. So in this Bennett is right: The findings may be wrong—only they probably should be much higher.

• "Learning Factors in Substance Abuse", a research monograph published by the National Institute on Drug Abuse in 1988, did teach us something—it listed these figures on annual deaths in the United States from substance abuse: tobacco, 346,000; alcohol, 125,000; alcohol and drugs, 4,000; heroin/morphine, 4,000; cocaine, 2,000; marijuana, 75.

• So what are we doing about all this, besides counting? Researchers Jonathan Shedler and Jack Block of the University of Callifornia at Berkeley recently released their 15-year study which concluded that drug abuse is a symptom of deep-seated psychological problems originating in early childhood, not merely "lack of education" or peer pressure. Therefore, efforts should be "aimed at encouraging sensitive and emphatic parenting, at building childhood self-esteem, at fostering sound interpersonal relationships and at promoting involvement and commitment to meaningful goals".

• "The war on drugs calls for more police and bigger prisons," says Washington writer Andrew Schmookler, "while the real work of healing broken lives is treated as a mere afterthought. Never mind that those with the biggest problem with drugs are generally those whose needs our society has most failed to meet—the young, the minorities, those with shattered families and schools that lead nowhere."

• Even Ann Landers is stumped: "The real question is why are millions of people so unhappy, so bored, so unfulfilled that they are willing to drink, snort, inject or inhale any substance that might blot out reality and give them a bit of temporary relief."

• "We are a nation of addicts," says Anne Wilson-Schaef, psychotherapist and author. Her portrait of the addictive type: someone with frozen feelings, fear, rigidity, judgmentalism, and low self-esteem.

• California Assemblyman John Vasconcellos and his California Task Force to Promote Self-Esteem have just finished a three-year study of self-esteem, which pointed out that virtually all American institutions, especially government an media, seem to promote personal helples ness to foster greater dependency. It sai that as individuals improve their own live society benefits. Back to good old sel reliance! Self-esteem, our secret "weapon No, no more war words. Our secret resourc Our great potential. See page 28 for report.

• Meanwhile, the papers are full of excitin stories of women, men, children, familie communities, who stand up for what the want—clean, safe neighborhoods. At, ala great risk, they shout at corner drug-dealer with bullhorns, they write down licens numbers of buyers, and as the activity move down the block, that part of the block inspired to reach for their bullhorns an pens.

• But is there not another secret resourc that we have right at hand? The Reveren Cecil Williams of San Francisco has foun it in "unconditional love". Neighborhoo once infested with drug-trafficking ar brightening up since Williams and othe crusaders marched down the streets in show of strength. "They didn't come t punish us," said a former crack dealer wh today leads cleanup efforts. "They reache out with hugs to help us. Many of us ar looking for a way out of drugs. We just nee people to give us a hand and show us th way."

• And *unconditional* love begins at hom No one said it was going to be easy.

The Institute of Noetic Sciences was founded in 1973 with the twin aims of fostering research on human consciousness and exploring its relevance for human affairs. As we have grown over the last seventeen years, we have watched people around the world also growing—both individuals awakening to a more profound understanding of themselves and groups creatively finding ways to link our social, ecological and spiritual visions through action. To broaden awareness of these changes, we are reporting on people, projects, trends and ideas that embody a blend of action and awareness and give us renewed hope for the Earth. They may be, we think, signs of a world awakening.

"To paraphrase an old saying, respect begins at home. If you do not hold yourself in high esteem, how can anyone else?" asks Rick Gelinas of the Delphi Foundation (see below).

"Let us be clear what we mean by high self-esteem. For a good definition I borrow words from my good friend from Santa Clara, California, Assemblyman John Vasconcellos: '. . . we are not talking about that narcissistic touchy-feely hot tub nonsense some people think is self-esteem. We are talking about a well-substantiated psychological and sociological reality that has everything to do with a person's ability to live a satisifying and meaningful life and to be a productive member of society.'

"High self-esteem begins, perhaps, with the affirmation that I am worthy of the best, I expect the best, I give the best. Living in that mode must yield, I think, the eventual conviction that I am the best. That doesn't mean I am better than someone else. It means I settle for nothing which doesn't measure up, and I give nothing of myself which doesn't measure up to the best that I can give. It doesn't mean that I am without flaw. But it does mean that I keep my flaws so well in focus, and I know myself so well, that my flaws do not pollute my love of others."

"Mighty Oaks" from "Lucky Acorns"

A Florida Foundation Promotes Self-Esteem and Responsibility

Family counselor Rick Gelinas and teacher Linda Gelinas began a highly innovative—and quickly successful—series of programs in teaching self-esteem "as an antidote to the pain of losing a twelve-year-old son, killed riding his bike when hit by a drugged car driver. The antidote is working and our son is alive and well in our work," Rick says.

How do you teach self-esteem? You start by stressing certain realities, they say. One reality is that life isn't luck, that we're shapers of our own destiny. Another is that life is too precious to throw away, on drugs, self-indulgence or by dropping out.

Through Delphi Foundation Institute (a not-for-profit community-based organization in Miami, Florida) the Gelinas' programs include:

Lucky Acorns

Originally titled "Little Acorns", this is a training program for elementary school children ("lucky" because they consider themselves fortunate to be in the "club") *and* their parents (who are required to attend a nine-week parenting class). The training strengthens the children so they are better able to resist temptation to do anything which might be harmful to themselves or anyone else. Values and ethics are part of what is taught. Good self-esteem is one of the results. As one mother said, "The things [my son's] shared have created a real breakthrough in our relationship. There's a lot more love and I was able to stop a lot of unnecessary anger flowing his way. Thank you very much!" Another mother said, "We can discuss things in an open manner. Lucky Acorns is the best preventive medicine . . . it can help children before their problems become such that they affect the community at large."

Mighty Oaks

Linda Gelinas says the Acorns' sadness at graduation sparked the program Mighty Oaks. In this program, sharing ideas and values and discussing problems is made safe. Parents get ongoing support and continue to learn from one another. As Linda Gelinas put it, "Many parents think they've failed, lacking control of their kids. We teach that control is a two-way street; real control also involves trust. The family unit is collapsing, and we've got to do something to strengthen it." Activities bring together families from many different schools and neighborhoods, and kids learn how to find ways to reach out and help the community.

Self-Esteem Training for Educators

Educators need good self-esteem and a wholesome self-image too. This intensive workshop offers training in these skills, for K-12 teachers, counselors, psychologists and administrators.

The Alliance for a World Safe for Children

This is a five-year series of conferences and workshops to improve K-12 education, teaching self-esteem, leadership, and team-building. The second will be January 11-12, 1991, in Miami. (In recognition of its successful production this January, 1990, of the first conference on A World Safe for Children, Delphi has been named the first Charter Chapter member of the National Council on Self-Esteem.)

And in the spring of 1993, Delphi will produce The First Global Congress of Educators to Promote a World Safe for Children, in Vienna.

The Florida Alliance to Promote Self-Esteem and Personal and Social Responsibility

The Florida Alliance will explore how self-esteem (or its absence) is reflected in seven most serious and costly social ills: crime and violence, drug abuse, alcohol abuse, teenage pregnancy, child and spousal abuse, chronic welfare dependency, and the failure to achieve at school. One of their first projects is to submit for formal academic examination the more than six hundred scientific studies published within the last fifteen years showing a causal relationship between poor self-esteem and problematic behavior. The Florida state university sys-

tem will then be asked to conduct an overview and report on this literature's apparent relevance to Florida's seven social problems just mentioned.

Just Like Me

In this program the youngsters meet some of Miami's successful people. Hearing their stories inspire the youngsters to make the most of their own talents.

Rick Gelinas and Linda Gelinas have just been nominated "Man and Woman of the Year in Education" by the University of Miami Chapter of the prestigious international honors association for educators, Phi Delta Kappa.

"Life is a series of consequences that are unavoidable in everything we do," says Rick Gelinas. "We are responsible for ourselves." He and his teacher/wife have made enormous progress in teaching that to many, many others.

Delphi Foundation Institute, 8601 South Dixie Highway, #409, Miami, FL 33143, (305) 666-3502.

Toward a State of Esteem

Toward a State of Esteem is the final report of the California Task Force to Promote Self-Esteem and Personal and Social Responsibility, submitted to the California Legislature in January 1990. Assemblyman John Vasconcellos was author of the bill which set up the Task Force. Here is a summary of its findings:

Self-Esteem is

- Appreciating my own worth and importance
- and having the character to be accountable for myself
- and to act responsibly toward others.

Key Principles

To fulfill the legislative mandate to compile research "regarding how healthy self-esteem is nurtured, harmed or reduced, and rehabilitated", the Task Force carefully developed a "Key Principles" document. Organized in sections which correspond to the primary elements in the definition, this document provides practical guidance to those who want a better understanding of self-esteem and how it is nurtured.

"Appreciating our Worth and Importance" involves accepting ourselves, setting realistic expectations, forgiving ourselves and others, taking risks, trusting, and expressing feelings. It also rests on appreciating our creativity, our minds, our bodies, and our spiritual beings.

"Appreciating the Worth and Importance of Others" means affirming each person's unique worth, giving personal attention, and demonstrating respect, acceptance, and support. This principle also means setting realistic expectations, providing a sensible structure, forgiving others, taking risks, appreciating the benefits of a multi-cultural society, accepting emotional expressions, and negotiating rather than being abusive.

"Affirming Accountability for Ourselves" requires taking responsibility for our decisions and actions, being a person of integrity, understanding and affirming our values, attending to our physical health, and taking responsibility for our actions as parents.

"Affirming our Responsibility Toward Others" means respecting the dignity of being human, encouraging independence, creating a sense of belonging, developing basic skills, providing physical support and safety, fostering a democratic environment, recognizing the balance between freedom and responsibility, balancing cooperation and competition, and serving humanity.

Key Findings

- Self-esteem is the likeliest candidate for a *social vaccine*, something that empowers us to live responsibly and that inoculates us against the lures of crime, violence, substance abuse, teen pregnancy, child abuse, chronic welfare dependency, and educational failure. The lack of self-esteem is central to most personal and social ills plaguing our state and nation as we approach the end of the century.
- The family is the incubator of self-esteem and the most crucial social unit in a child's life and development. The early months and years of a child's life are the most decisive in establishing a solid base for authentic, abiding self-esteem and depth of personal character.
- The parent's high self-esteem is vital to his or her ability to provide a healthy environment for the child. We need to extend great effort to assist parents to develop their own self-esteem and to become more knowledgeable, capable, and effective in nurturing children's positive self-esteem and personal responsibility.
- Since children spend so much of their time in school, the environment of the school also plays a major role in the development of self-esteem. Schools that feature self-esteem as a clearly stated component of their goals, policies, and practices are more successful academically as well as in developing healthy self-esteem.
- Experiencing our spiritual side is part of being human. Nourishing our spirit is necessary if we want healthy self-esteem.
- Every person is potentially creative, and appreciating our creativity is crucial for healthy self-esteem.

- Young people who are self-esteeming are less likely to become pregnant as teenagers.
- People who esteem themselves are less likely to engage in destructive and self-destructive behavior, including child abuse, alcohol abuse, abuse of other drugs (legal and illegal), violence, crime, and so on. Without discounting the importance of those early years, people can achieve healthier self-esteem at any age. So information and opportunities for choosing to do so must be made available to citizens of all ages and circumstances. Again, it is not simply new knowledge that we need, but a new awareness of ourselves as we experience new kinds of affirmation and acceptance.
- Regardless of age, race, creed, sex, or sexual orientation, an affirming environment in the home, school, workplace, and community is crucial for nurturing self-esteem. This is a personal and public responsibility that we need to recognize, accept, and undertake. The choice to esteem ourselves is also a decision for which each of us, ultimately, is personally responsible, no matter what our back grounds may have been.

Recommendations in Brief Form

The Family, Teenage Pregnancy and Child Abuse

1. Highlight the important role of parents through a media campaign.
2. Include child-rearing courses in the school curriculum.
3. Make courses on child rearing available to all.
4. Make self-esteem-enhancing child care available to all.
5. Provide health education for expectant mothers and fathers.
6. Provide self-esteem and responsibility training for all foster parents and institutional-care staff.
7. Reduce the number of teenage pregnancies through self-esteem training.
8. Provide family life programs for adolescents.
9. Provide programs to encourage responsibility of teenage fathers.
10. Provide support programs for parents at risk of abusing children.
11. Provide women's shelters that contain a self-esteem and responsibility component.

Education and Academic Failure

1. Weave self-esteem and responsibility into the total education program.
2. Educate every educator through pre-service and in-service training in self-esteem and responsibility.
3. Give students opportunities to do community service.
4. Formulate a real-life skills curriculum.
5. Promote more parent involvement.
6. Be sensitive to the needs of students at risk of failure.
7. Use the arts to help develop self-esteem and responsibility.
8. Expand counseling and peer counseling services for students.
9. Provide cooperative learning opportunities.
10. Reduce class size or student:adult ratios.
11. Implement programs to counteract bigotry and prejudice.

Drugs and Alcohol Abuse

1. Create prevention councils in every community.
2. Expand treatment programs.
3. Create culturally sensitive prevention strategies.
4. Educate parents.
5. Expand school prevention programs.
6. Encourage responsible media.

Crime and Violence

1. Hold juveniles accountable for crime.
2. Replicate programs that foster self-esteem and responsibility.
3. Combat gangs with self-esteem programs in schools.
4. Create community partnerships to develop after-school activities.
5. Establish self-esteem programs in correctional facilities.
6. Develop self-esteem programs for criminal justice agencies.
7. Provide self-management and coping skills for inmates.
8. Promote arts programs in institutional settings.
9. Establish community correctional facilities.

Poverty and Chronic Welfare Dependency

1. Support programs that assist long-term welfare recipients towards independence.
2. Encourage programs that provide parents with the tools to be good parents.
3. Encourage programs that establish peer support groups.
4. Provide in-service self-esteem training to staff who work with welfare recipients.
5. Implement welfare reform programs that alter attitudes and enhance motivation.
6. Provide incentives for communities and businesses to work together to promote youth programs.

The Workplace

1. Promote affirming workplace environments.
2. Provide employer support for employee/parents and families.
3. Encourage more businesses to get involved in their communities.

Copies of the full report are available for $4 each plus sales tax for California residents, from the Bureau of Publications, California State Department of Education, PO Box 271, Sacramento, CA 95802-0271.

People who would like to join John Vasconcellos in the National Council for Self-Esteem, to "become a full and active partner in carrying forward the historic and hopeful work of the Task Force", can write him at PO Box 301, Santa Clara, CA 95052; dues are $25 a year.

People Who Care:

by Mary Luck

In every community there are people who care. Some feed the hungry, help the homeless, work with children or families at risk. Others reveal their genius in everyday acts of kindness and compassion. Their work, however great or small, and their presence are healing. Their altruism inspires us all.

How is community created? How are wounds healed? How can people know their own dignity, worth and power? Let us learn from the people who care, the people whose lives are devoted to helping. Here are their stories.

—Thomas J. Hurley III, Director, Altruistic Spirit Program

A Living Sculpture *photo by Fletcher Drake*

Robert Alexander
"Everyone is an Artist"

With the philosophy that everyone is an artist, actor-director Bob Alexander founded Living Stage in 1966 as a social outreach theater company. Living Stage works in the heart of Washington, DC, with community members who are forced to struggle against systems that tear at the foundation of their self-worth. Alexander does "work which heals" with inner-city teenagers, handicapped children, the elderly poor, and inmates at Lorton Prison, using scripts built up from their own life stories. Since the theatrical content comes from the feelings and thoughts of the participants, the subjects of improvisation range from drug addiction, AIDS, racism, teenage pregnancy and suicide, through the special problems of the aged and handicapped.

Whenever staff at Community Services have a teenager that everyone else has given up on, they say, "Send him over to Living Stage." The key to Alexander's success is that he seeks out people who have a history of failure and then he gives them his unconditional love along with opportunities for personal expression and success. All of Alexander's drama exercises are designed to encourage participants to use their bodies, voices, imagination, and souls to express and communicate what is most important to them. "We take all of their suggestions, all of their choices very seriously. We find that the validation of their feelings and their ideas gives them a true sense of the rightness of themselves. It makes them feel worthwhile and important," said Alexander.

Among other efforts, Alexander runs a weekly program for crack-addicted teenagers, and works with a group of 20 fourteen-year-olds from I Have A Dream, a program designed to encourage "at risk" youths to complete school.

He is always looking for more effective ways of getting and keeping inner-city youth involved with this work—providing rides, meals, ways for parents to participate and support their kids—and he is always taking on tougher and tougher cases.

For the past thirteen years Living Stage has been working with blind, deaf, and physically handicapped children. "I have seen true poets who have been labeled as 'vegetables'. I have felt the genius of these

Mary Luck is Research Assistant in the Altruistic Spirit Program.

children's hearts and minds. There is a crying need for ongoing support to further explore these handicapped people's creativity," said Alexander. Through special workshops, Living Stage introduces artists, parents, educators and human service professionals to the art of improvisational theater as an effective vehicle for developing the creative abilities and self-esteem of children, teens and adults.

Instead of working on a traditional stage, Alexander's theater company uses a flat, open space so that the interaction of the actors and the audience-participants is a very intimate one. Living Stage audiences are drawn into actively creating improvised music, song, dance, poetry and plays, based on the deep mythic themes in their lives. This artistry is devoted to revealing the magnificent power of all people's imaginations and providing skills which enhance their creativity, self-esteem and communication abilities.

"There are some warriors out here, a few radiant lights who are making a difference in this city. One of these warriors is Robert Alexander who, with his Living Stage Theatre Company, has been reaching out to love, serve, empower and transform the forgotten and dispossessed of our nation's capital," said Joan M. Pierotti, an educator in the Washington, DC, public schools.

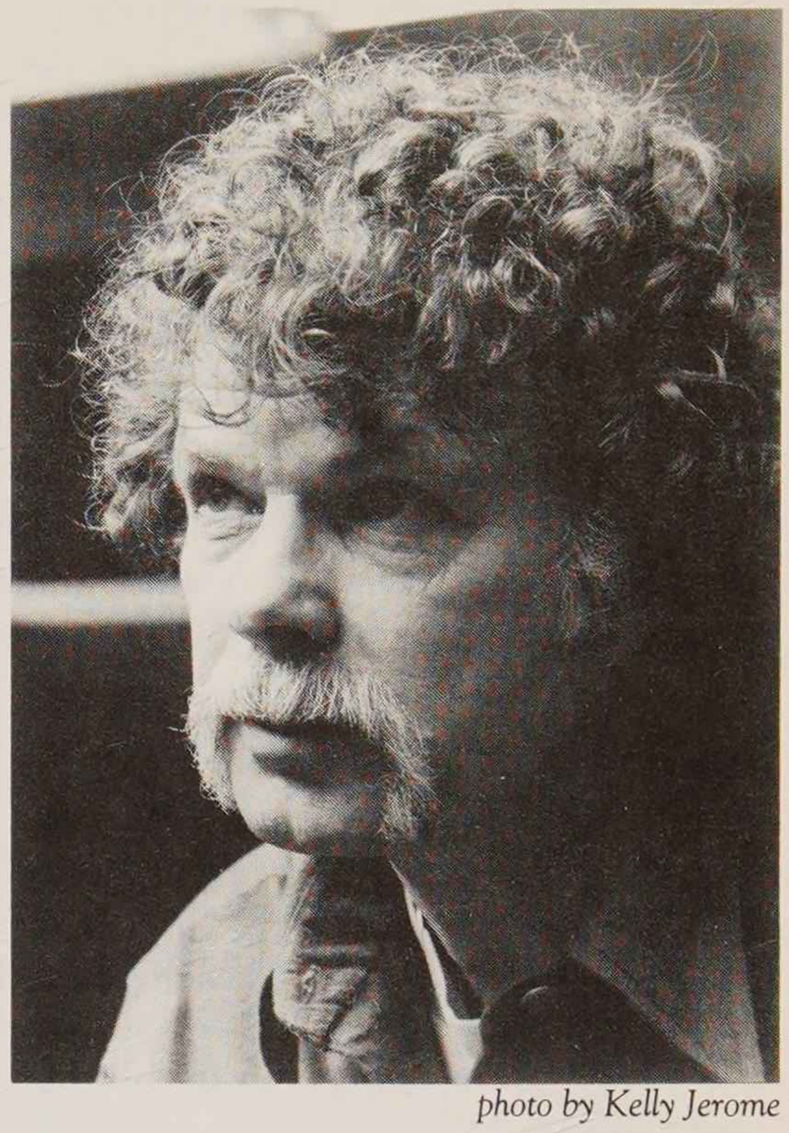
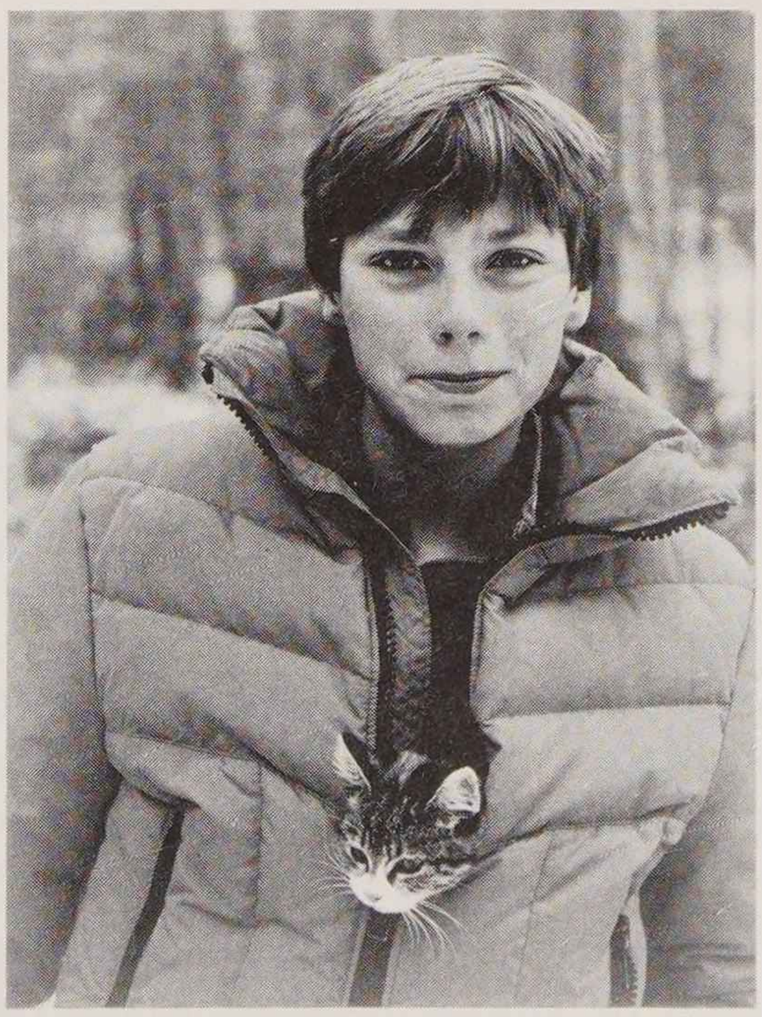


photo by Kelly Jerome

Bill Burke-White "S.O.S"

As an Eagle Scout Service Project, thirteen-year-old Bill Burke-White created a volunteer organization called SOS (Student Organized Sharing) at Saratoga Springs Junior High School in New York State. Even though apathy is "in" among students, Bill has inspired more than forty peers to volunteer several hours of their time each week. As matchmaker, Bill coordinates community needs with seventh, eighth and ninth grade recruits who are eager to give their energy and skills to fill these needs.

Student volunteers are currently committed to service activities like reading to elderly people in nursing homes, serving meals at soup kitchens, tutoring young children in math and reading, helping out at the animal shelter and taking handicapped people out for walks and recreation. Bill is trying to help the community become more creative in thinking of things that young teenagers can do. He spends his afternoons talking with volunteers on the phone. And his evenings are spent working on the SOS computer database.

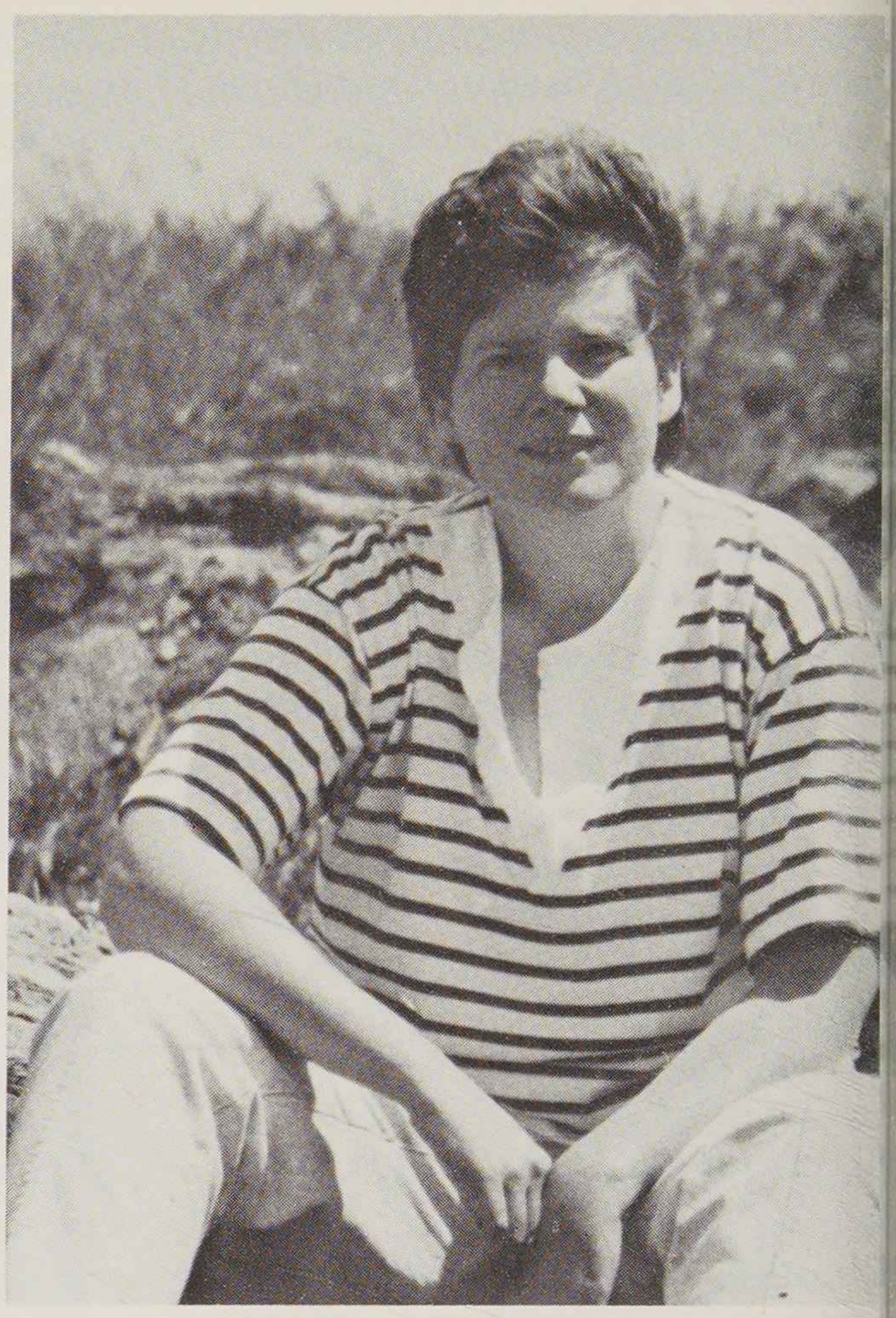


When Bill was in fifth grade his teacher asked him to prepare an entry for the NY State Martin Luther King Jr. Arts and Science Contest. As he researched, Bill learned that King had studied and emulated Gandhi's teachings on non-violent action. This philosophy made sense to Bill, who tried out these methods for conflict resolution with his school mates and found that "they really work better than hitting back." Bill won second place in the state contest for his speech, which combined King's "I Have A Dream" with Bill's own hopes and vision.

This year Bill gave his speech at the National Symposium on Non-Violence. He was also invited to take the stage and speak with New York's Governor Cuomo. This summer he will deliver his speech in Russian when he travels to the World Peace Camp in the Soviet Union.

Why does Bill spend so much time helping other people? He says, "I feel like I'm making a contribution and I know we can make a difference." ➢

Mary Kelly Sohm
"Project Dignity"



What would you do if your doctor said you had an incurable disease, one that progressively cripples your health? Where would you turn for help? Who would guide you through the maze of red tape and service agencies as your illness progresses?

Mary Kelly Sohm learned first hand how to deal with these problems in 1984 when she developed multiple sclerosis, a progressive disease of the central nervous system that left her unable to walk, eat, or swallow for two years. Sohm learned everything she could about MS and related diseases, including what services were and were not available. During her rehabilitation, she began reaching out to help others facing a lifetime of chronic illness. She founded the Multiple Sclerosis and Related Disease Support Services and another program called Project Dignity to ease patients' anguish by guiding them to the right services, helping them learn more about their diseases, and assisting with their finances.

"Through personal tragedy I learned that I could complain about the 'system' (and rightly so), or I could help create the kind of 'system' I envisioned would build a better and more compassionate community," said Sohm, who works tirelessly to improve the support systems in New Hampshire.

"The needs of a person who becomes suddenly and chronically ill are overwhelming, and almost impossible to coordinate. We realize that the well-being of the entire family must be considered. MSRD Support Service was built on the belief that no matter how ill or disabled a person becomes, they can, and must, maintain their pride, dignity, self-respect, and independence," said Sohm. For patients and their families, Sohm coordinates financial planning, counseling, education and medical treatment. Sohm knows of no other agencies that are set up to accomplish Project Dignity's goals.

She has a warm and humorous way with people. On a first visit with new clients, Mary gives them a hard hat and says, "You will need this hard hat, because this is going to be hard work!"

"Just listening to people is so healing that much of the time that's all I have to do," she said. "The cases can be devastating. There's a lot of sadness in doing the work. . . . On the other hand, the work has taken the fear of my illness away from me. I know I can handle anything and do it well."

Sohm insists, "It is critical that there never be a charge for our services. Part of the healing happens when people realize that, in my eyes, they are the most important people in the world. I am on their side without any expectations," she said. Mary and her husband, Robert, who has a progressive lung disease, pay most of the expenses themselves. Those who get help are expected to help others in return. Mary is proudest of the fact that last year she gave direct service to 250 people with chronic illness and their families for the modest expense of $960. "That's $3.85 a head!" she exclaimed.

"People have often asked me why I work so hard on behalf of others whom the community gave up on long ago. All I ca say is that I grew up in a time when it wa honorable to serve the poor. It was a tim when I learned to ask what I could do for m country. It was a time when I remember m aunt, a Catholic nun, and my fathe conspiring to smuggle medical equipmen undetected into Haiti to treat the sick an injured of an oppressive regime. Back the the call to service was heard by all," sai Sohm.

Before the onset of her illness, Sohm was marketing specialist. Now that the MS ha gone into remission, she has new plans fo her future. In addition to her work wit Project Diginity, she is working on graduate degree in rehabilitationa counseling.

"I am honored to have been able to serve s many, and privileged to have been give the talents to serve," said Mary Sohm. □

. . . Dixey – continued from page 13

crystal spheres, with Earth at its center, each sphere supporting a planet, with the outermost the sphere of the fixed stars. This conception, a simplified and Christianized version of the Ptolomaic scheme of antiquity, placed man at the center of the created universe, and so combined the needs of theology with the simple requirements of navigation and astrological prediction. The size of the entire universe was small, some thousands of miles from its center (the Earth) to its periphery. Man lived in a man-sized world under the gaze of the Creator God.

But that gaze was not always beneficent. This, after all, was the age of persistent famines, social upheaval, the millenarianism of the crusades. The calm categories of the ancients had to find their expression in a far more turbulent world.

The Idealization of the Natural World (Copernicus and Keppler)

The high medieval world came to an abrupt end with the Black Death, 1346. A third of the European population was decimated. Wars followed. Dispossession followed. Chaos ensued. The result was a total rejection of any interest in Christianizing Greek thought, a rejection of any concern about the struggle between the ancient and the Christian views of the world. The period that followed saw the Renaissance, and a movement away from an interest in the categorization of nature toward a more Platonic interest in mathematical expression of natural objects. Idealized expression and concepts of harmony and beauty once again replaced the need for an accurate description of what was actually observed.

Now this liberation from the complex efforts of the scholastics had some startling consequences. Why was it, for example, that in the fifteenth century Copernicus could have proposed that the Earth moved around the sun? And in the face of the most overwhelming evidence to the contrary? Isn't it just extraordinary that this chap could have written a book which proposed such an absurd idea? Why wasn't the idea just knocked out of court instantly because it went against so much of what was known? It's perfectly obvious the Earth is not moving because when you jump up and down on the Earth it doesn't move away from you! There were a lot of very good physically based arguments as to why the Earth doesn't move. And yet Copernicus wrote this book because he was convinced, and he convinced other people as well.

How could Copernicus have proposed such an absurd idea? It's perfectly obvious the Earth isn't moving because when you jump it doesn't move away. . . . The reason he was convinced was because his scheme was <u>mathematically</u> more <u>harmonious</u> than the earlier Aristotelean and Ptolemaic schema.

The reason he was convinced, the reason he put the idea forward, was because his scheme was more harmonious than the earlier Aristotelean and Ptolemaic schema. The idea of mathematical harmony in its Platonic sense had again become causal in Western culture.

In his model of the heavens, there were only 34 cyclical devices compared to something like 90 in the Ptolemaic. It was still a complicated scheme, and was actually less accurate than its predecessor as a description of what happened in the heavens. But because it was mathematicaly simpler, that was enough to convince him and others that his scheme was nearer the truth—true because the truth must be mathematically harmonious in some way.

The idea of mathematical harmony in its Platonic sense had again become causal in Western culture.

Copernicus and then Keppler, with their interest in mathematical harmony, gathered more and more adherents against the massive knowledge of Greek science and its scholastic supporters. And within these two people's work lies the first root of what one can call the modern conception of scientific causality, the modern conception of the world. ➢

Yet the "problem" of physical change still remained.

The New Science (Galileo and Descartes)

Galileo argued you don't have to analyze the object in front of you. You can idealize its activity.

But to place mathematics at the center of the physical world rather than in the ideal was far from easy. Whilst mathematical ideas could have total sway in the activities of the heavens, events of the Earth were a much more complicated matter. The science of mechanics, the old problem of physical change, was where the main development took place, and it did so in the work of two crucial figures, Galileo and Descartes.

Motion and change: Here we have the old problems coming back. For the Aristoteleans there were terrible problems in looking at the causes of motion. Aristotelean science had trouble in describing mechanical motion as apart from growth. What was motion? Was motion a quality? How can one even talk about something in motion? After all, if it is moving, it is changing all the time—so in what sense is it one thing at all (see the Eleatic dilemmas above)? The Aristotelean world had difficulty describing motion in any sense other than the biological—using the analogy of biological growth and development—and their definition of it, whilst logically coherent, expresses well the difficulty they were in. The scholastic definition of motion was that "Motion was the actuality of a potentiality that actualized itself, whilst retaining the potential for further actualization" (that is, further motion)! The notions of potentiality and actuality were fine in accounting for how the actual acorn contains the potential oak but they provided a poor basis for the study of mechanical objects.

In Galilean science all that exists is a mathematical reality—number, shape and mass. Color, smell, taste, beauty are not real in any absolute sense.

Galileo swept all that away. He did so in the most extraordinary fashion, which has influenced so much of what has happened since. He argued that you don't have to analyze the object in front of you. You can idealize its activity and then, having idealized its activity, analyze its activity in the idealized world and add to that idealized world extra variables—things you propose exist—to account for its actual activity in this one. You can thus go beyond the physical world to account for it, and explain it, if you like, backwards.

And that is exactly what he did. He mathematically idealized motion. Instead of trying to describe the motion of a ball as it rolled along, as the scholastics had done, accounting for its motion in terms of forces that lost their impetus—wore out as time went on—Galileo *imagined* the ball rolling on forever in an ideal world and then proposed a countering force of friction to account for its actual behavior in this one. The scholastics, in their description, had said, well look, it rolls to a halt, s whatever keeps it rolling must wear out in some wa Galileo said, that's not true; if you could imagine perfect, infinitely large plane, and you rolled the ball o it, it would never stop moving. What happens when i rolls to a halt in the real world is that another force i added to it that brings it to a halt. So instead of th obvious intuition that when things move they come t a halt because whatever makes them move runs out (perfectly commonsensical statement) Galileo came u with a very counter-intuitive statement: Things wi move forever if you give motion to them. The onl reason they stop is that something brings them to a hal

Now this form of analysis which takes the Platonic us of mathematics into the world of sensory experience wa a difficult thing to justify. The problem, in particular, i that it downgrades the experience of the senses in favo of the logical analysis of mathematics, but claims, unlik the Platonic model, to provide true and accurate infor mation as a result.

Galileo's solution to the problem was simple. He saic well, all that exists is a mathematical reality—not a idealized reality as in Plato—but an actual mathemat cal reality. What we experience in the senses are th consequence of mathematical objects hitting our sense We are not experiencing actual reality at all. And sinc our perceived world is an illusion, it is therefore perfectl OK to substitute an idealized mathematical one for it i order to perfect our analysis. In Galilean science, th only things that exist are number, shape and mas That's all that exist. Color, smell, taste, beauty—a these things are nonexistent. They are not real in an absolute sense.

How was it, why was it, that this decision was taken? Th reason for trying to split reality down the middle, t break up the perceived world into a world of mathemat cal form as opposed to that of the senses, was in order t enable the mathematical analysis of nature to go ahea without having to account for those awkward qualita tive aspects of experience, aspects that resisted such mathematical assault.

His medieval predecessors had made no such distinc tions between the inner and the outer world—indee in the previous attempts to quantify the qualities, ex amples of motion would, in one sentence, cover both th motion of a ball down an inclined plane and the move ment of Grace in the heart; the falling of a stone and th

ripening of an apple. Such an all-encompassing vision seemed a necessity to express the richness of the Creation of God. But Galileo had different aims. Universality was to give way to precision in the late fifteenth century. There was no way you could mathematically express the beauty of a sunset or the rising of an emotion; it just couldn't be done.

This form of analysis which takes the Platonic use of mathematics into the world of sensory experience was a difficult thing to justify. The problem is that it downgrades the experiences of the senses in favor of the logical analysis of mathematics, but claims, unlike the Platonic model, to provide true and accurate information as a result.

And the philosopher who followed him, Descartes, raised Galileo's split between the sensory and the actual into a complete metaphysical system. In his writings there are primary qualities (number, shape and motion) and secondary qualities (colors, feelings and the sensory world). All that exists are bodies in motion and in collision (the primary). All we perceive is the result, colored and given meaning as a sensory hallucination (the secondary). You can mathematically express the motion of a ball down an inclined plane, as you can mathematically express the parabolic arc of a projectile from a gun. Thus the simple decision was taken to split reality down the middle. You say, OK, the things we cannot mathematically express are not real. Mathematical expression is a criterion for reality.

Thus in Cartesian science there is a complete duality that emerges in the perceptual world of man. In Cartesian science, the ego, the mind stuff, the thing that experiences, is completely cut away from the physical realm. Not only is man to be told that what he perceives isn't real, but further, the perceiver has only the most limited access to the physical world. For Descartes, consciousness is located at only one place in the physical body, the pineal gland, in the center of the brain.

Man is thus dispossessed entirely from the physical world. At the same time, with Cartesian science a completely mathematical yet certain science was a possibility. But the price of mathematically expressing the whole of the natural world was the dispossession of man from it. Simple as that.

The Great Synthesis (Newton)

If mathematical science of Descartes was the foundation, it was his chief critic, Isaac Newton, who created the first totally universal mathematical expression of Nature, an expression which had the power to predict new phenomena and explain unexpected interrelationships. In his treatment of the movement of the planets, he proposed the existence of a force so universal that it could be evoked to explain phenomena as diverse as the movement of a comet in the heavens, the swinging of a pendulum or even the notorious dropping of an apple, the famous story of how Newton came to his discovery.

Descartes raised the split between sensory and "actual" into a complete metaphysical system.

Now this story of his discovery, of him sleeping in an orchard when a falling apple struck him on the head and woke him up, is worth examining for a moment. For it wasn't that Newton was the first person to see an apple fall—or ponder on the weight of physical objects. What he did was more subtle, and yet more profound. He unified all these phenomena by conceiving of a force that combined events on Earth with the movements in the heavens, proposing one force alone that linked man with the stars. And in the same set of equations, he found a place for the tides, the seasons, even the effect of the atmosphere. It must have seemed to his contemporaries that true knowledge was available for the first time.

Newton unified phenomena by conceiving a force that combined events on Earth with the movements in the heavens.

However it must be stressed that Newton, like Descartes, was no mathematical technician; they both saw their models of the universe as complete statements of what is—ultimately religious statements of how the Creator was linked to his creation. Newton, for example, was a deeply religious man, a thinker who wrote more on alchemy and biblical prediction than on mathematical physics, and who saw in his universal force of gravity the "sensorium of God", the very means by which the

Were it not for the success of mechanical cosmologies, it seems unlikely they would have been accepted at all.

Almighty communicated with his creation. And again, like Descartes, God the Creator had no merely passive role, for the so-called magnetic phenomena, and the anomalies that could be observed in the heavens, were both places where Newton saw God in action, maintaining his universe for the general good of all.

But the metaphysical grounds that made their analysis possible were there nonetheless: a conception of linear time and geometric space; a physical reality devoid of all qualities, with man, the observer, maintained by the constant vigilance of the Almighty. So unnatural are these proposals that, were it not for the extraordinary success of the mechanical cosmologies to which they gave rise, it seems unlikely that they would have been accepted at all.

The Recovery of Experiment (Bacon)

In Baconian science the physical world became something you can mess around with. Information from that process was real information.

Coincident with these developments in the mathematical analysis of nature came another crucial break with the ancient world. Building, as the mathematicians had done, on the work in the twelfth century, it concerned a further reappraisal of man's relation to the natural world. The development started with Francis Bacon. For Bacon, man's role was no longer to understand nature; man's role was to change it. In the brave new world of the Reformation there was a complete departure from the motivation which had inspired Greek science. As Bacon put it, "That wisdom that we have derived principally from the Greeks is but like the boyhood of knowledge, and has the characteristic property of boys: It can talk, but it cannot generate."

Bacon saw the scientific endeavor as an attempt to wrest the secrets of Nature from her, not through the contemplative analysis that had informed the previous two millennia, but through alteration in experiment. And during the seventeenth century a whole generation of scientists began an ever-widening set of investigations, manipulating their world in the name of knowledge. In such investigators as Boyle, Huygens, Hooke, Harvey, experimental science seemed a source of endless opportunity.

Again, a highly significant development for the modern world. In Baconian science nature was no longer a given as it was for the Greeks. The physical world was something you can mess around with—alter by putting it in apparatuses, or tearing it to bits. Whatever information you got from that process was real information, independent of how it was obtained. The idea of the natural, so central to the schemata of the Aristoteleans, was utterly rejected. And with it, of course, was the claim that science gave definite and true knowledge, as the philosophers that followed, notably Berkeley and Hume, were quick to point out.

Again, with the possible exception of Bacon, these experimenters were deeply devout men. Like Newton and Descartes, they saw their studies as revealing more of what God had written in the Book of Nature. Consonant with the recurrent preconception in Christianity of the last times, millenial sentiments were widely expressed that man had at last been forgiven for the Fall and had been allowed back to the Garden of Eden. And like Adam, who knew all things, it seemed that the new science would reveal all to the wondering eyes of the Mechanical Philosophers.

It is said that after pride comes a fall, after hubris nemesis. And despite the devout intentions of these three generations of workers, the metaphysical ground of Western man's relation to nature had been radically altered. The natural had lost all meaning; man was an onlooker to a world almost inconceivably alien, where atomic particles interacted across the empty void despite all appearance to the contrary. His place in a natural order was lost and, as the great Newtonian scholar Alexander Koyre put it: "In solving the riddle of the Universe, man had found another enigma—himself."

Back to the Future

The enigma took its time to develop, of course. The eighteenth century saw the complete victory of Newtonian mechanics, and its full working out, particularly by the French. One by one the anomalies that found a role for God were worked out in the Newtonian universe, and even the Almighty was written out of the cosmic equation. Newtonian mechanics was a conspicuous failure in the biological sciences, and the following one hundred years saw a return, in biology at least, to the categorizing activities of the ancients—the work of a Linneaus or a Cuvier was still in the old tradition of the logical analysis of form rather than in the new scientific mold of drawing mechanical analogies for biological processes. But then, after that lag, an abrupt arrival of the mechanical ideas did take hold in the life sciences and indeed society as a whole.

The French Revolution—a discontinuity in every sense in the social, the political, the medical, the biological—

can be seen as the arrival of the Newtonian analytical scheme finally displacing the qualitative world of the Enlightenment. Cell theory saw the emergence of mechanism in the bowels of living tissue, and, of course, Darwinism completed the retreat of the Divine from Nature. With that final retreat came the final disillusion; one only has to read Thomas Huxley's despairing attempt to reconcile Darwinism with Humanism in his Oxford lectures of the 1890s to see how futile the grounds for hope had become.

Perhaps a reformulation of underlying metaphysic is again overdue. That is one reason why these issues of metaphysical preconception, and the attempt to analyze causality, seem so timely. We may be living through another great change in humankind's conception of our world.

Yet it is perhaps ironic, for the events of the seventeenth century had all but removed the overarching truth claim in which the scientific endeavor had had its origin. A split between man and nature was perhaps inevitable if natural science and deistic theology were to be bedfellows, but as I hope I have indicated, there are strong grounds for believing that without that combination modern science, and much, if not all, of modern technology might never have happened. How much of our technology is indeed dependent on our scientific outlook is a moot point, and an interesting one to ponder, but this is not the place.

What is certain is that our century has seen the gradual dawning of the realization that the truth claim of science is not what the classical world gave to it, and many have turned away to belief systems more congenial to their actual experience. Coupled with that, there is a growing sense of alarm about our world. For there is no way you can turn the clock back to find out what Nature was before we messed with it. There is no way to turn back the clock to unsplit the atom before we split it. In an all too real sense, the scientific enterprise has made man himself part of its own experiment. We are no longer independent of what we have done. The problem of knowledge has caught up with us for real.

May You Live in Interesting Times

Classical mechanics, of course, was itself overthrown by quantum mechanics and relativity. Now, some eighty years later, we are perhaps witnessing the arrival of these new ideas in the biological realm, with the attendant social and political changes that have accompanied such events in the past. What is intriguing is that the quantum mechanical conception yet again reintroduces into nature those qualitative essences, inherent forces, that the classical mechanics of the seventeenth century tried so hard to remove. At the present state of knowledge at least, subatomic particles have inherent powers apart from the Cartesian velocities and mass, qualities that cannot be further reduced. Perhaps a reformulation of the underlying metaphysic is again overdue. That, in a sense, is the historical reason why these issues of metaphysical preconception, and the attempt to analyze causality, in fact the Institute of Noetic Sciences' Causality Project itself, seem so timely. We may be living through another great change in humankind's conception of our world.

Surely it is time for us to take our place again in the natural world . . . now, as preserver of our fellows of all species.

So where are we now in the still surviving Newtonian model of the biological world? It is still accepted good taste to attempt to analyze all the features of living systems in terms of the underlying chemistry, and ultimately physics. Observed qualities must be explained in terms of quantities, even if this places the level of explanation at a large conceptual remove from the actual phenomena. How common it is to hear that when we have completely unravelled the genetic code, that miracle of mechanical function in the center of every cell, we will have finally come to a true understanding of the biological realm!

But the mechanical model carries with it the other features of the Newtonian metaphysic: Man is still an onlooker into his world, and his own internal workings are, as a result, banished from polite scientific society. Not only does this serve to trivialize the issues science

Our fundamental physical theories, our ecological insights and our increasing knowledge . . . all point to the power of the observing and interacting agent in the makeup of reality.

can address, but it further isolates it from our world, even though it is one of the most important features of our culture. It is not surprising that pragmatic, and ultimately defensive, realpolitik is the only response the West can give to peoples who seem to have other, often aggressively different, beliefs.

For where can the deep sources rise in our culture? Where are the cracks in our armor through which they can seep? These sources, metaphysically isolated from the world of the natural, and lost in the main from the religious orthodoxy that replaced it, can only find a home in the modern world in the realms of fantasy and myth—always peripheral, like man himself, to our hard and alienating worldview.

But the qualitative dragon is rumbling in the depths of the subatomic particles, the rock bottom of the universal machine. Could it reawaken and yet again inhabit the observed universe? Could man, indeed, climb on its back and find a place for himself in such a reconception of the world? That is on offer if a new metaphysical synthesis is indeed a possibility: That our own being might find a home again in the expression of our culture; and consciousness itself could become a power amongst powers, a quality amongst qualities.

In conclusion, it might be worth anticipating a little as to what such a reinclusion would entail. One problem concerns our vision of life, for if we are to reenter the world as living powers, then that must entail all our fellow creatures too. After all, there is enough evidence for it, evidence that we can quite unromantically see our planet as alive, filled with life, and that life itself is a power, not just a chemical byproduct. Such is surely the reempowering of the Parable of the Beast.

Should not this power receive attention in the only place we experience it—ourselves?

But we are the eyes of the world, our world, and here too our present preconceptions serve us poorly. Since the seventeenth century there has been a progressive impoverishment of the subjective, a lack of emphasis on the arts of memory, observation and recall. It's as though we have handed over to machines to do our living for us, as though we cannot trust ourselves. If our fundamental physical theories, our ecological insights and our increasing knowledge of the sophistication of the natura world all point to the power of the observing an interacting agent in the makeup of reality, should no this power receive attention in the only place we expe rience it, ourselves?

Metaphysical conceptions are powerful; they lead t changes in how all of us will live. History shows time an time again that education, institutions, human possi bilities are all integrated around concepts that lie at th root of our perceptual frame, the cultural worldview Surely it is time for us to take our place again in th natural world, but now, with our tremendous power, t take it as manager, protector, preserver of our fellows c all species. And surely it is also time for us to do the sam for ourselves, to work with the inner as well as the outer And again, this time, to develop an awareness of ou inner workings, our inner potential, rather than lose i all to dogma. One has only to see the incredible richnes discovered by the insight meditators of the East—th richness and sophistication contained in the Tantra and Sutras of Tibet, for example—and see, indeed, th signs of its study and development in the churches of th Orthodox tradition of the Christian Church, to wonde what potential would be released if such an activity di not fly in the face of the dominant metaphysic.

Meaning can find a home beside mechanism; this, believe, is what an understanding of the history of ou metaphysical preconceptions offers us. And with tha revisioning, science may once again assume its historica role.

The Chinese have a proverb: "May you live in interest ing times". Perhaps we are.

Richard Dixey is Director of the Bioelectronic Research Uni St. Bartholomew's Hospital, London, and Scientific Office for the Confederation of Healing Organizations.

This article is based on a talk given at the Institute of Noet Sciences, July 1989. Extended and reworked at Isola d Ponza, Italy, June 1990.

Produced and edited by Barbara McNeill.

Letter to the Editor

I am concerned that Alfie Kohn, in his article "The Case Against Competition" [Spring *Noetic Sciences Review*] perpetuates erroneous notions about the true nature and value of competition. One of the things he says is that competition is destructive by its very nature. This argument is based on the premise that no amount of competition is healthy.

I think his definition of competition as "mutually exclusive goal attainment" is a pretty narrow one. It's based a lot on the popular culture which is perpetuated by a media whose main purpose is selling air time or magazines, and that definition of competition has gotten us into a lot of trouble.

A perfect example of that occurred the day that Carl Lewis and Ben Johnson both broke the world's record in the 100-meters. What the media emphasized was the *winner*. In fact, both men had run faster in that race than any one man had run in the *history of the world*. All the media portrayed was the winner/loser aspect of it. I propose that that's where the problem is, not in the nature of competition but in the context within which competition occurs.

This problem is pervasive in our culture. In his article, Mr. Kohn is taking something that is not inherently good or bad, and taking it to its worst extreme. He makes some very valid points about competition. If you set it up as winner/loser, then yes, it is bad in that sense. And I certainly do not want to perpetuate that approach.

But I have derived a wholly different notion about competition based on my experience as an athlete. I would define competition as using your environment—whether it's the space race, or another athlete—to help extract your "best self". I was not particularly a gifted or talented athlete, but I was a great competitor. I knew that the reason I would compete at the highest levels of my sport was how I thought about things, how I used my mind.

For example, when Mr. Kohn talks about competition poisoning our relationships, I am reminded of the Olympic trials of 1976. In order to be in the Olympic Games you have to place in the top three; but in the trials my primary competitor was a woman who placed first most of the year that I competed. She was a taller, stronger, bigger, better athlete than I and she usually beat me. But she began to miss her high jumps. By then it was only the two of us left in the competition. When she missed on her third attempt I went across the field to her and said, "Jane, what are you doing? You left me here by myself. There is no one else in the competition for me. What am I going to do? *I need you in order to jump higher!*"

How many times have I seen two athletes—who have been pitted against each other for four years for the Olympic gold medal—cross the finish line at the Games and not just shake hands and walk away, but embrace each other? On some level they know that the other person is responsible for their being as good as they are, that without that other person they would not have pushed and become as good.

Being in my first Olympic competition (Munich 1972) was the highest attainment that I could even imagine. Winning a medal was not even in my thoughts—the East Germans, the Russians, were much bigger, stronger, faster. But just to be on the Olympic team was to me a tremendous accomplishment, it was my goal.

But if you frame competition in the context where there is only one gold medal and everybody else is a loser, I would agree that competition is destructive. When I came back from Munich, friends would introduce me: "This is my friend Marilyn King. She was in the Olympics." Of course, my chest would swell with pride. But the next question people would ask was, "Oh, you were in the Olympics. Did you win a medal?" When I said I didn't win a medal, they didn't have anything else to say—that was the end of the conversation. And as a 19-year-old I was pretty devastated by that.

An example of how competition can be healthy is the Special Olympics, where *everybody* gets awards and medals and congratulations for just crossing the finish line, for just participating.

When you contrast competition with cooperation, I agree with Mr. Kohn that in many instances, cooperation fosters good things and many times competition can be very negative, destructive and inappropriate. But I believe that cooperation and competition are called for at different times; they are processes that are appropriate in certain instances and not in others.

—Marilyn King

Alfie Kohn responds:

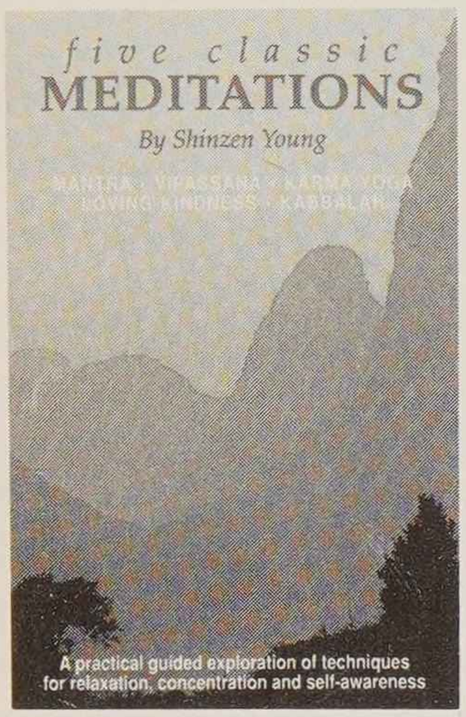
King's argument turns entirely on her definition of competition as "using your environment—to help extract your 'best self'." This definition seems dubious to me, first, because it is so broad and elastic as to include lots of things unrelated to what we normally think of as competition and, second, because it makes competition valuable by definition instead of relying on arguments or evidence to prove its value.

Maintaining a constructive attitude toward opponents (or focusing on personal excellence instead of victory) is a lovely ideal; unfortunately, it runs smack against the built-in requirement of any competition, which is to win. The structure inherent in contests ranging from spelling bees to the Olympics specifies that one can succeed only if others fail. It is this structure, and not merely our individual attitudes, that will have to be changed if we seek a healthier and more productive way to work, to play, to learn, and to live.

We welcome responses to any articles featured in the Review. *The editor reserves the right to edit any letter we choose to print.*

Audiotape Review

by Charles T. Tart



Five Classic Meditations

by Shinzen Young
Audio Renaissance Tapes; 1989
60 minutes, audiotape
To order see page 45.

Readers of the *Review* will recall reading (*Noetic Sciences Review*, Autumn 1988) excerpts of a stimulating conversation between Shinzen Young and me on the practice of meditation[1] and other mindfulness techniques. Shinzen Young is an American who studied classical meditation practices in the East for many years before beginning to teach in the Los Angeles area. I have always been impressed by the depth of his understanding and consider him one of the leading pioneers in adapting the vital essence of meditative practice to contemporary Westerners.

Five Classic Meditations is an excellent series of guided meditations for those who want to practice, rather than just think about, meditation. After general instructions applicable to most forms of meditation, Shinzen guides the listener through classic concentrative meditation in the form of mantra (special sound) meditation and then into traditional mindfulness (Vipassana) meditation where we learn to objectively observe and flow with the natural processes of mind and body instead of psychologically freezing around them.

Concentrative and *mindfulness* meditations are the foundations o classic Buddhist practice and are found in some form in almost al the great spiritual traditions. They can produce an increase ability to focus that applies in all areas of life, not just forma meditation, and increased insight into and understanding of al our life. These instructions alone, with Shinzen's excellen guidance, would be sufficient to call this an excellent tape. Ye there are three other guided meditations to further flesh out th spectrum of meditation.

The third is *metta*, a meditation on loving kindness, which infuse a vital human warmth into life and practice which might otherwis be too "cool" and detached. The fourth is *karma yoga*, whic further integrates meditative practice with the rest of life b showing how your daily activities can lead to concentration an insight. This direction is strengthened in the fifth meditation fron the Jewish *Kabbalah* tradition on accepting and integrating th forces of the flow of life in and around us.

If you are a beginner to meditative practice, this tape will get yo off to a good start in a way a book alone cannot. If you are alread accomplished in meditation, you will appreciate the knowledg and caring that come through in Shinzen's guidance and probabl want to give this tape to friends who are just starting.

Charles Tart is a Fellow of the Institute.

1. The full dialogue appears in Chapter 25 of *Open Mind, Discriminating Mind: Reflections on Human Possibilities*, C. Tart (Harper and Row, 1989) To order see page 45.

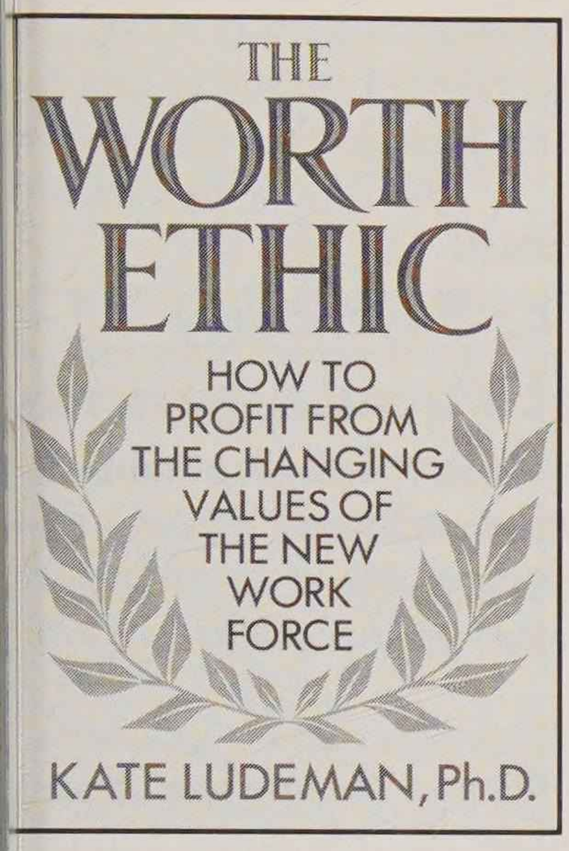
Update: Conscious Living, Conscious Dying Project

Helen Ansley's proposal for a "Last Resort", as reported in the Spring *Noetic Sciences Bulletin*, has materialized into an eighteen-month exploratory project called Conscious Living/Conscious Dying. Its principals are Helen Ansley and Susannah Arnold, who are being assisted by the Institute of Noetic Sciences in getting it organized.

The purpose of the project is to explore innovative ideas on conscious living and dying, including Helen Ansley's ideas on setting up an "Ultimate Finishing School", "A Way Out Inn", where she can live while she explores the way to die "with style".

The ideas will be disseminated many ways, including a videotape and a book by Helen which the Institute will publish in the fall. Both will be distributed through the Institute's order service. An announcement will be forthcoming.

by Nola Lewis



The Worth Ethic: How to Profit from the Changing Values of the New Work Force

by Kate Ludeman
E. P. Dutton; 1989
240 pages, Hb.
To order see page 45.

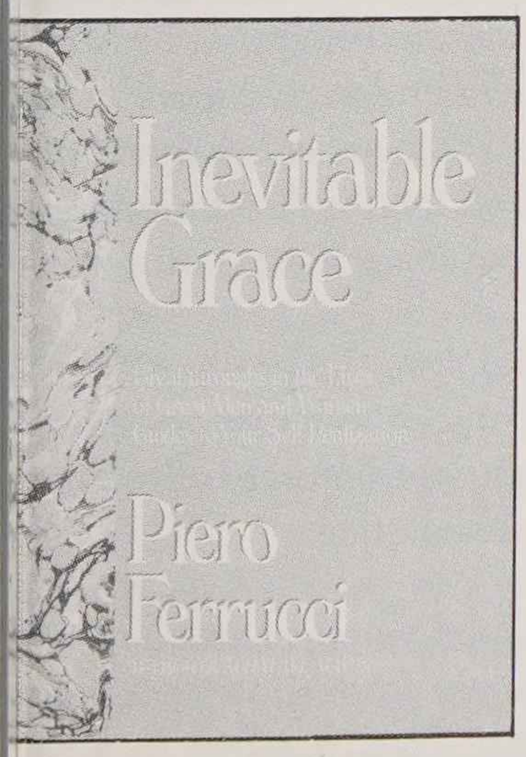
The single best predictor of longevity is satisfaction with one's work in life. Yet we can't all conduct symphonies, as our longest lived professionals do, and even the most exalted work contains menial or boring moments. In these changing times, how can the working world be restructured so as to enhance satisfaction, and reduce stress and the waste of a precious human resource—time?

The Worth Ethic brings a fresh answer to these familiar questions. Designed as a management resource by a successful consultant in the field, the book points out that we live in a time when the character of the work force has changed radically. Money, prestige, and other benefits which formerly motivated workers are now insufficient incentives to secure and satisfy members of the new workforce.

According to Ludeman, a complementary transition is required on the part of those whose task it is to motivate and coordinate the activities of today's worker. The new approach must see the worker as a human resource to be nurtured, rather than a commodity to be accessed. The new workers are demanding, but committed—and they expect their jobs to give them a sense of personal fulfillment and identity not expected in the old days of "9 to 5".

To bring out the best in this new breed of individuals, Ludeman stresses that managers must dedicate themselves to building self-esteem—their own and that of their employees. Ultimately, motivation must come from the core element of worth. The growth and development of the individual is defined as the key to organizational well-being. Techniques of manipulation and pressuring to ensure performance must be replaced with genuine support for risk, innovation, and growth so as to provide a climate in which employees feel free and challenged to put forth their best efforts.

The book communicates its message clearly and succinctly, with specific suggestions on how to set and achieve goals, recognize blocks to growth, and create and manage change in a cooperative and responsible way. The principles involved are not limited to work alone, nor to managers, but apply equally well to other contexts of change.



Inevitable Grace: Breakthroughs in the Lives of Great Men and Women: Guides to Your Self-Realization

by Pierro Ferrucci
Jeremy P. Tarcher; 1990
272 pages, Hb.
To order see page 45.

When Abraham Maslow undertook to explore the nature of "peak experience" he departed radically from the psychology of his time, which was then preoccupied with the psychopathology of the mind. Ferrucci's *Inevitable Grace* shares this inspired rationale as it turns our attention to the lives of over 500 great men and women of various times and cultures, and searches for moments of truth within those lives which crystalize their meaning.

Inevitable Grace is an exploration of excellence in all fields of human endeavor—sages, artists, scientists, mystics, educators, pioneers, philanthropists, and political leaders are all included. Ferrucci presents his research into these lives, and discusses in detail the exceptional abilities they illustrate, including such transpersonal phenomena as creative inspiration, ecstasy, and illumination. ➢

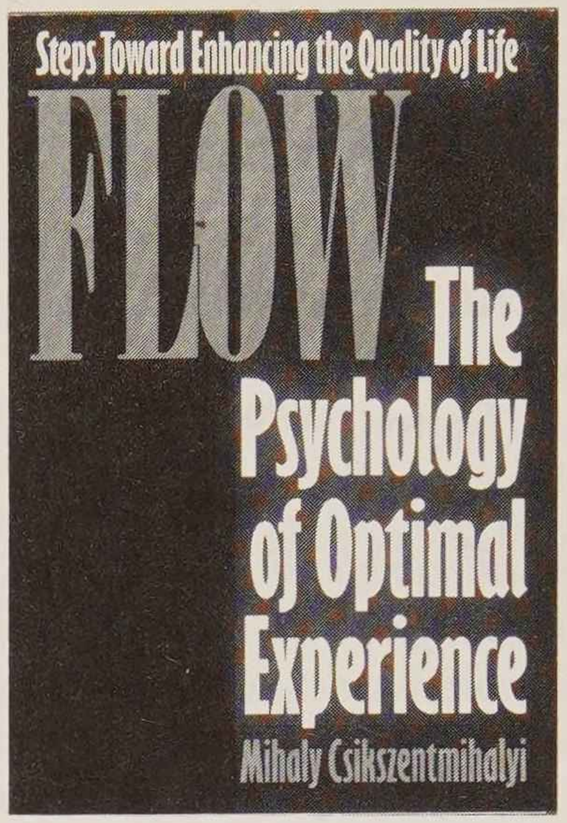
According to Ferrucci, rather than being the monopoly of a few special people who represent optimal mental health, transpersonal experiences are our common heritage and the truest expression of our being—natural, simple states within the reach of all. The book describes *how* breakthroughs to these higher states have been attained—which techniques elicit them, what attitudes facilitate them.

Ferrucci sees natural divisions within the body of experience derived from these powerful lives which are organized into seven "roadmaps" or *Ways*:

- *The Way of Beauty* is based on aesthetic enjoyment, inspiration and creativity. In it we find artists of various types.
- *The Way of Action* leads to the Self through service without thought of personal gain and tireless involvement in the world. It is the path of benefactors and philanthropists.
- *The Way of Illumination* is founded on the practice of meditation and is taken by the great contemplatives, philosophers, yogis, and sages of all times.
- *The Way of Dance and Ritual* covers physical, externalized, and communal approaches to the expansion of consciousness. It is followed by dancers, performers of rituals, and actors.
- *The Way of Science* leads to attainment of the sublime through research, observation, and speculation. Here we find scientists and inventors.
- *The Way of Devotion* is practiced by mystics and saints of all religions. Prayer is its main vehicle, relationship with God its central theme.
- *The Way of the Will* is the path of the daring among us, such as explorers who venture into the unknown, inspired political leaders who confront hostile social forces, and athletes who challenge the limits of human capacities.

Each of these ways holds a natural attraction for individuals whose innate temperaments respond to the qualities expressed. Ferrucci tells anecdotes which illustrate the meaning of these natural patterns within the context of exceptional lives. He includes sufficient psychological detail to illustrate that the characteristics involved can be used to enhance everyday living and to encourage breakthroughs into the transpersonal realm, which in the past seemed reserved for the great mystics of the ages.

The book is written in a heartwarming and accessible style, with wonderful stories and quotes from the lives of great men and women from Ramakrishna to Tesla, from Goethe to Lindbergh. In describing their experiences, *Inevitable Grace* offers a rich harvest of insights into the nature, meaning, and value of transpersonal experiences.



Flow: The Psychology of Optimal Experience

by Mihalyi Csikszentmihalyi
Harper and Row; 1990
288 pages, Hb.
To order see page 45.

My friend was grating potatoes for the pancakes we would eat a dinner. After what seemed an interminable time, I finall commented—"You know, you can get a box mix with the potatoe already grated." She looked up, as startled as if I'd dropped from th ceiling. "But I *like* what I'm doing!" she said. This inciden illustrates some of the key elements of the psychological stat described in *Flow*—choice, involvement, attention, an enjoyment.

Is enjoyment in life a skill which can be learned, or the prerogativ of those few lucky souls who seem to have been born contented What makes people glad to be alive? What are the inner experience that make life worthwhile?

According to psychologist Mihalyi Csikszentmihalyi, who ha been studying these questions for the past twenty years, th answers lie in a state of consciousness he calls "flow". In this state people experience total absorption in what they are doing, an report feelings of enjoyment, concentration and deep involve ment. Typically, the person feels strong, alert, in effortless control unselfconscious—as if performing at peak ability. Emotiona problems seem to disappear. There is an exhilarating feeling c transcendence, of breaking out of the boundaries of identity an of time. And the nature of the activity which generates this feelin is not limited: It can occur both in work and in leisure, in sport music, the martial arts, and other creative activities.

To support his thesis, Csikszentmihalyi draws upon the extensiv psychological research on flow which until now has appeared onl in professionally oriented literature, and translates this clearly an understandably for the non-technical audience.

"Flow"—or *autotelic*—experience occurs when people are full absorbed in an activity. Autotelic comes from the Greek—*aut* meaning self and *telos* meaning goal. Thus it refers to a self contained activity, one that is done not with the expectation c

ome future benefit, but simply because the doing itself is the eward. As an example, teaching children in order to turn them nto good citizens is *not* autotelic, whereas teaching them because one enjoys interacting with children *is*. The key element of such n experience is that, even if undertaken for other reasons, it is an nd in itself.

Flow is a universal experience, according to the author, and veryone has experienced its reality at one time or another. But for many of us, this quality passed with childhood and the demands for ttention to the external world that "growing up" exacts through uch societal structures as education and work. Nevertheless, Csikszentmihalyi believes this fortunate condition can be ediscovered and nurtured within us all.

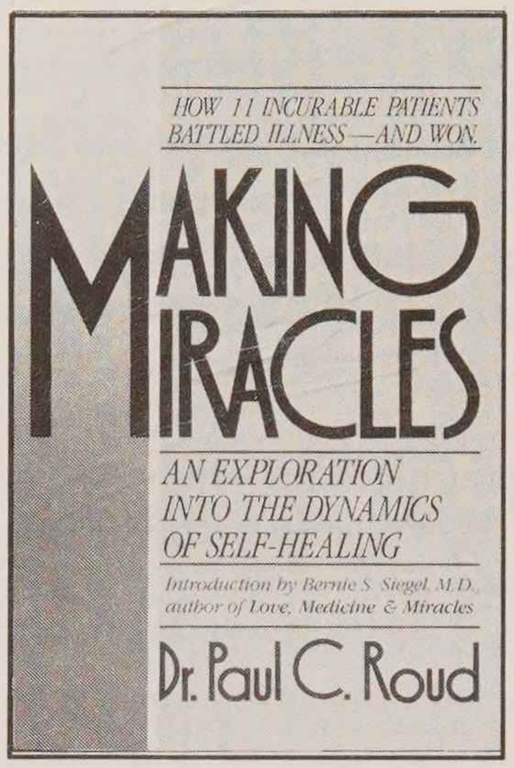
Fundamental to accessing this condition is turning from outer-directed motivations to the inner involvement which characterizes he autotelic state. The "agreement" of inner direction and outer ctivity produces an augmented energy and satisfaction. But this s not the equivalent of relaxing and "going with the flow": It is a much more intense, aware, and committed kind of participation n the activity at hand.

To enhance our ability to attain this state, Csikszentmihalyi says t is necessary to set appropriate challenges for ourselves, tasks that re neither too difficult nor too simple for our abilities. The unction of the "autotelic self" is to transform life's challenges into pportunities for actions. The individual who is underchallenged ives a safe—but featureless—life. Yet if the challenges are nrealistically difficult, the individual may feel overwhelmed and he capacity to respond is frozen. When an activity is authentically hosen and appropriately challenging, it is possible to invest and ustain attention in it. Under these absorbing conditions, we xperience optimal ordering of the contents of our consciousness, nducing a loss of the boundaries of self.

What slips below the threshold of awareness is the *concept* of self, he information we use to represent to ourselves who we are. Being ble to forget temporarily who we are seems to be very enjoyable. Paradoxically, it seems that *losing* the sense of self in a flow xperience leads to a stronger emergence afterward. Thus the loss f self-consciousness does not involve a loss of self, and certainly ot a loss of consciousness, but, rather, only a transient loss of onsciousness *of* the self. It is this loss of self-consciousness which an lead to self-transcendence and the feeling that the boundaries f one's being have been pushed forward.

Csikszentmihalyi reports on recent findings about the flow xperience: the circumstances in which flow is reported in different ultures, and how the ability to express flow affects job satisfaction, cademic success, relationship, sexuality, childrearing practices, oping with stress, and the overall quality of life.

This is an interesting and important book, written by a well-respected social scientist. Although many articles and books on flow have been written for the specialist, research on optimal experience and its implications for individual lives has not been made available for the general reader. Its central thesis is of relevance to all human experience, and thus it makes lively, informative, and engaging reading.



Making Miracles: An Exploration into the Dynamics of Self-Healing
by Paul C. Roud
Warner Books; 1990
288 pages, Hb.
To order see page 45.

According to the dictionary, the meaning of the word "miracle" is "an event that apparently contradicts known scientific laws and is thus thought to be due to supernatural causes".

Since such events by definition cannot be "made", *Making Miracles* represents a contradiction in terms. But there is another meaning for miracle, "a wonder or wonderful thing", and it is this second definition which more adequately describes the nature of the healing events described in Roud's interesting book.

Making Miracles is based on the stories of 11 "miraculous" survivors of physical and mental diseases in which the medical prognosis was grim. A medical assessment of the probability of recovery is included for each patient. It varies from 1 in 25(not expected but not very unusual) to 1 in 1000 (very rare). Yet the individuals involved here have succeeded in regaining health where their counterparts have not, and there is much to be learned by listening to the stories of these exceptional survivors.

Others have made the point that duration is not the only meaningful measure in facing a serious illness, and that healing can be psychological and spiritual without ever realizing a physical cure. This book, however, brings us stories of healing in which the patient *does* get well, and continues to thrive in apparent resolution of the disease process. ➢

Each story is heard first in the patient's own words, and then in an interpretation by the author, a researcher who specializes in counseling patients who suffer from life-threatening illness. It includes clinical observations by the medical personnel who assist them in the search for wellness. A "Related Research" section presents selected research elaborating on the relationship between the qualities seen within the individual and what is presently known about psychosocial factors in health and illness—for example, obedience vs. autonomy, assertiveness vs. passivity.

An incident from Roud's own life, detailed in an appendix, helps us understand the experience of the individual who faces death. Nearly drowned after being caught in a riptide and pulled out to sea, Roud describes the powerful feelings stirred up by the experience, and the emotional aftermath which followed as he faced his inner anger, anxiety, feelings of abandonment, and rage at those who stood helplessly on the shore while he struggled to survive.

But these 11 patients' crises are enduring ones—rather than lasting for a few minutes, hours or days, they must be borne for long months and years without surcease and with continuous reinforcement of the negative prognoses they bear. How do such people find the strength to endure, let alone overcome, such ailments? What qualities assist them? Although each individual story is unique, there is some coherence and consistency among them which suggests a common thread of experience running through the capacity to heal. Among the curative properties seen in these stories are

- *Communication*—breaking down the emotional barriers that often distance recovering patients from their loved ones;
- *Responsibility*—encouraging friends and family to stop "rescuing" and start listening; choosing physicians, therapists and other professionals who are willing and able to work in partnership with even critically ill patients;
- *Individualization and growth*—making authentic choices about holistic measures such as meditation, diet, etc., which may augment standard medical treatment;
- *Courage*—facing and overcoming the depression, loneliness, guilt and other emotional conditions that can erode resistance to disease; and
- *Commitment to change*—a willingness to open to spiritual d mensions that bolster hope, galvanize faith, and strengthen th will to live.

One tends to define and dismiss "miracle" as beyond huma participation. But that is surely not the truth of these stories, an seems not to take account of the enormous tenacity, strength an courage shown by these survivors as they work out the means t their own survival. The individuality of each person's solution t the problem of disease shows there is no single pathway to healt nor can one who has found his or her own key prescribe it fc another. The possibilities are infinite in the gestalt of health, an any solution must come from the individual involved. Yet the sel honoring choices illustrated in these 11 cases suggest that creatin love and meaning in life may yield an important by-product– enhanced survival.

Do psychological correlates of survival exist, and if so, can they b learned and nurtured? In the vast complexities of illness an health, there is no clear consensus either from research or anecdot as to what makes a person well, and it would be a disservice t pretend there is. So those who are expecting a psychosocial gri laying out the coordinates of healing may find the anecdot nature of this book disappointing. Yet the stories are told with clarity and impact which points to the healing attitudes the illumine. They should prove inspiring to those who face a medic diagnosis of life-threatening disease, and may well provide muc needed clues to help us understand why some people get well eve though their disease is normally fatal.

Like the familiar story of the blind men trying to explain a elephant by describing the part which they can touch—here trunk, there a tail—each individual comes up with a unique an highly personal description of the piece of the puzzle to which h or she has access. Perhaps, however, this provides the greate value of the book—evidence that the elephant, however dim sensed, does in fact exist.

Nola Lewis is Assistant to the Institute's Vice-President for Researc

Book Ordering Information

How to purchase books mentioned in this issue of the *Review*:

Special note: *Not all of the books reviewed or mentioned in this* Review *are available for sale through the Institute's Mailorder Catalog. The following book can be ordered through your local bookstore or by contacting* **Artist's Proof Bookstore, 460 Magnolia, Larkspur, CA 94939, (415) 924-3801 (Mon-Sat 10-6, Sun 11-4 PST). Please enclose $3.00 per book for postage and handling.**

The Worth Ethic: How to Profit from the Changing Values of the New Work Force, *Kate Ludeman,* (E. P. Dutton, 1989) Hb. $18.95

Books available from the Institute Mailorder Catalog:

The Brighter Side of Human Nature: Altruism and Empathy in Everyday Life, Alfie Kohn (Basic Books, 1990) Hb. $19.95
Members' price: $17.55 *BBS1A001*

Flow: The Psychology of Optimal Experience, Mihalyi Csikszentmihalyi (Harper and Row, 1990) Hb. $19.95
Members' price: $17.55 *BOE1E001*

Gaia: The Human Journey from Chaos to Cosmos, Elisabet Sahtouris (Simon and Schuster, 1989) Pb. $7.95
Members' price: $7.00 *BGI1G001*

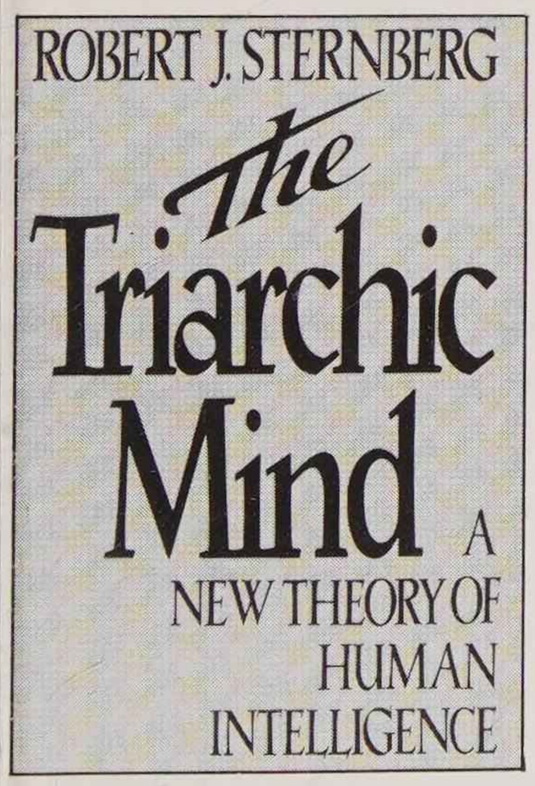
Five Classic Meditations, Shinzen Young (Audio Rennaisance, 1989) 60 minute audiotape. $9.95
Members' price: $8.75 *ASFC1E001*

Inevitable Grace: Breakthroughs in the Lives of Great Men and Women: Guides to Your Self-Realization, Pierro Ferrucci (Jeremy P. Tarcher, 1990) Hb. $19.95
Members' price: $17.55 *BIG1E001*

Making Miracles: An Exploration into the Dynamics of Self-Healing, Paul C. Roud (Warner Books, 1990) Hb. $19.95
Members' price: $17.55 *BMM1H002*

No Contest: The Case Against Competition, Alfie Kohn (Houghton Mifflin, 1986) Pb. $8.95
Members' price: $7.60 *BNC1A004*

Open Mind, Discriminating Mind: Reflections on Human Possibilities, Charles Tart (Harper and Row, 1989) Hb. $18.95
Members' price: $16.70 *BOM1B001*



The Triarchic Mind: A New Theory of Human Intelligence

by Robert J. Sternberg
Viking; 1988. 354 pp. Hb. $19.95;
SPECIAL SALE PRICE: $11.75 *BTM1E001*

Sternberg, a psychology professor at Yale University, presents a fascinating discussion of what intelligence is and how we can increase it. True intelligence has to do not only with academic performance, he says, but also with "practical intelligence" or common sense, and with the ability to think in novel ways, using insight. He calls for new kinds of tests to measure these three kinds of intelligence, and includes samples of such tests in the book. He uses case studies to show how intelligence, which he considers "mental self-management", is used in day-to-day problem-solving and in executive decision-making. He also describes how intelligence can combine with personality to form "intellectual style", and how different intellectual styles can help or hinder our successes in life.

Please send check, money order, or credit card number (minimum credit card order: $15) with your order and include shipping and handling charges: orders up to $10.00 add $3.00; up to $20.00 add $4.00; up to $30.00 add $5.00; up to $40.00 add $6.00; up to $50.00 add $7.00; up to $70.00 add $8.00. California residents add 6% sales tax. Mail your order to:

Institute of Noetic Sciences, PO Box 909, Sausalito, CA 94966-0909, (415) 331-5650

Travel

Balinese High Priest and Healer *photo by Marguerite Craig*

MALAYSIA, BORNEO, SABAH AND SARAWAK - November 24-December 14; $3,965 from San Francisco or Los Angeles

Our journey has been planned to give you an in-depth experience of the best Malaysia offers. We'll stay in luxurious beach resorts with opportunities for snorkeling and good swimming. However we'll also be exploring the rainforests, considered the world's finest, and in danger of being logged out of existence in the next few years. In these rainforests there are over 8,000 species of flowering plants, many with medicinal qualities still being discovered by Western science but known to native peoples for centuries. We'll see orangutans, visit an island to watch turtles come ashore at night to deposit their eggs, ride in dugout canoes to visit Iban tribal groups and stay overnight in the guest section of a tribal longhouse, and much more. Tour leader Bruce Carpenter has a wide knowledge of healing traditions throughout Southeast Asia and will be teaching about these practices and introducing us to local healers in various locations.

For a Malaysia trip brochure, please contact Travelling Shoes.

Travelling Shoes' (formerly Travel Horizons) phone number is (800) 531-5544.

BALI - October 31-November 14; $3,275 from Los Angeles or San Francisco

Bali is a living museum where ancient traditions have continued unbroken since time immemorial. Spiritual rituals are integral to daily life. Small children weave little baskets and fill them with flower offerings to the spirits. It's a rare day you'll drive down a country road without seeing a procession headed to a temple. Flowers, incense and the sound of the gamelon orchestra instruments delight the senses.

We'll enter the esoteric inner world of trance healing, hidden rituals and magic. We'll see three trance ceremonials and visit several important temples holding lavish festivals. We'll meet with several traditional healers and see performances by top dancers and masters of the shadow puppets. We'll have numerous opportunities to witness a wondrous world of sharing and creative group expression. Under thatched roofs amid terraced rice fields the Balinese home workshops are open to visitors to watch artists, wood-carvers and silversmiths. We'll have the leisure time to people-watch, and the time to linger with local healers to talk about their beliefs and to watch them work with local people. Contact Traveling Shoes for a tour brochure.

BRAZIL II - February 10-March 2, 1991; Approximately $3,350 from Miami

Stanley Krippner will lead a second trip to Brazil to accommodate the many people who wanted to join our November trip after it filled. This journey will visit Belem on the lower Amazon, Brasilia, Recife, Belo Horizonte, Ouro Preto, Rio and Sa Paulo. We will explore the mixture of Af rican, Spiritist, and Catholic beliefs an practices. The music of the berimbau an other local instruments, the samba beat the laughter of people who find joy in th midst of their economic problems, leave lasting impression on your mind and heart We'll observe and experience laying-on of-hands healings, magnetic passes, her bology, divination, hypnosis in healing and many kinds of trance states. We' watch psychics paint and compose musi with help from alleged spirit entities. Peopl will tell us about their work, their belief and the historical and cultural roots o their traditions. At Candomble an Umbanda ceremonies we'll see dancers re living ancient rituals as they supposedl incorporate spirits of their gods.

For a brochure, contact Bryan Interna tional Travel, (415) 986-0967, or th Institute.

1991 TRAVEL PROGRAM

Brief descriptions of the rest of our 199 programs will appear in the Autumn *Noeti Sciences Bulletin*. Following are the tenta tive dates and destinations of some of th earlier trips to help you in making trave plans. Brochures will be available by th end of September 1990.

EGYPT - March 15-31

ENGLAND, WALES AND IRELAND June 22-July 8

JAPAN - May 18-31, with an optiona extension to Taiwan

SUMMER JOURNEYS

We will repeat our popular shamanic jou ney in the Santa Fe and Taos area in Jun We may visit Belize and Guatamala to se the archeological treasures and connec with local people and their healing trad tions. We will journey through the Copp Canyon of Mexico, meeting with loc healers and learning about the lifestyles Indian mountain dwellers.

About the Institute of Noetic Sciences . . .

Apollo 14 astronaut Edgar Mitchell founded this nonprofit membership organization in 1973 to expand knowledge of the nature and potentials of the mind and spirit, and to apply that knowledge to advance health and well-being for humankind and our planet.

As a research foundation . . .

We provide seed grants for scientific and scholarly research on:
1) mind-body relationships in health and healing;
2) exceptional human abilities, including altruism;
3) emerging worldviews in science, business and society.

Our goal is the contribution of knowledge which will expand understanding of human nature.

As an educational organization . . .

We publish books; the quarterly *Noetic Sciences Review*, a journal covering people and ideas in the forefront of consciousness research; *Special Reports*, which cover these ideas in more depth; and a quarterly news *Bulletin*. We also sponsor a national public television series, *Thinking Allowed*.

Our goal is to create a forum which contributes to contemporary dialogue, with a focus on questioning prevailing belief systems in science and society.

As a membership organization . . .

We hold a vision of a world in which expanded human consciousness leads to a deeper understanding of untapped human potentials. We are committed to individual and institutional action which contributes to this understanding, and to the integration and practical application of this knowledge in our rapidly changing global community. *Members receive the publications listed above.*

Members also receive discounts on carefully selected books, audiotapes and videotapes on the mind and consciousness through the Institute's mailorder service. Members also have opportunities to explore other cultures with like-minded companions through the Institute's Travel Program.

As a member of the Institute of Noetic Sciences you support innovative, pathbreaking research . . .

Inner Mechanisms of the Healing Response: One of the fundamental goals of the Institute has been to create a scientific understanding of the mind-body relationship. The Institute's Inner Mechanisms Program is devoted to studying how the healing response functions. This Program asks: What are the innate processes within us that stimulate recovery and natural self-repair? Is there an unknown healing system that promotes remission from normally fatal illnesses? This Program focuses on the mechanisms of healing, in areas such as psychoneuroimmunology, energy medicine, spontaneous remission and spiritual healing.

Exceptional Human Abilities: In this program we explore constructive human potentials—what we can learn about the farther and higher reaches of human nature. The Altruistic Spirit Program, for example, focuses on what makes people act with unselfish love and service to others. Other areas of investigation include intuition and creativity, meditation, and enhanced performance in sports.

Emerging Paradigms in Science and Society: This Program explores the relationship between consciousness—particularly values and beliefs—and global issues, and the premise that a fundamental change of mind may be occurring worldwide, for example, in areas such as global peace and common security. In its Scientific Causality project, the Institute is attempting to identify and illuminate the changing foundations of science in physics, biology, the neurosciences, systems theory and other fields.

Membership Form

- ☐ **$35 Associate:** *Provides general support of the Institute and members receive monthly Institute publications.*
- ☐ **$60 Two Years**
- ☐ **$25 Student (fulltime) Membership**
- ☐ **$25 Senior (retired) Membership**
- ☐ **$100 Supporting Membership:** *Helps additionally to support the research budget.*
- ☐ **$500+ Sustaining Membership:** *Helps even more—and receives additional documents.*
- ☐ **$5,000 President's Circle:** *The above benefits, plus individual conversations with President Willis Harman and other senior Institute staff members.*
- ☐ ***$10 additional for members outside United States ZIP codes to cover postage costs.***
- ☐ Enclosed is my tax-deductible contribution for the membership(s) checked.
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Mail to: Institute of Noetic Sciences, PO Box 909, Sausalito, CA 94966-0909. Or charge your membership on MasterCard or VISA by phone using our toll-free number (800) 525-7985, extension 22-IONS, 6 am to 6 pm, Pacific Time, seven days a week.

Why is it I alone don't see what you see? You see on earth the dominion of good and truth, but I don't see it."

Pierre interrupted him. "Do you believe in a future life?" he asked.

"In a future life?" repeated Prince Andrey.

But Pierre did not give him time to answer, and took the repetition as a negative reply, the more readily as he knew Prince Andrey's atheistic views in the past. "You say that you can't see the dominion of good and truth on the earth. I have not seen it either, and it cannot be seen if one looks upon our life as the end of everything. On earth, this earth here" (Pierre pointed to the open country), "there is no truth—all is deception and wickedness. But in the world, the whole world, there is a dominion of truth, and we are now the children of earth, but eternally the children of the whole universe.

"Don't I feel in my soul that I am a part of the vast, harmonious whole? Don't I feel that in that vast, innumerable multitude of beings, in which is made manifest the Godhead, the higher power—what you choose to call it—I constitute one grain, one step upward from lower beings to higher ones? If I see, see clearly that ladder that rises up from the vegetable to man, why should I suppose that ladder breaks off with me and does not go on further and further? I feel that I cannot disappear as nothing does disappear in the universe, that indeed I always shall be and always have been. I feel that beside me, above me, there are spirits, and that in their world there is truth."

"Yes," said Prince Andrey. "But it's not that, my dear boy, convinces me; but life and death are what have convinced me. What convinces me is seeing a creature dear to me, and bound up with me, to whom one has done wrong, and hoped to make it right" (Prince Andrey's voice shook and he turned away), "and all at once that creature suffers, is in agony, and ceases to be. . . . What for? It cannot be that there is no answer! And I believe there is. . . . That's what convinces, that's what has convinced me," said Prince Andrey.

". . . We must live, we must love, we must believe," said Pierre, "that we are not only living today on this clod of earth, but have lived and will live for ever there in everything" (he pointed to the sky). Prince Andrey stood with his elbow on the rail of the ferry, and as he listened to Pierre he kept his eyes fixed on the red reflection of the sun on the bluish stretch of water. Pierre ceased speaking. There was perfect stillness. The ferry had long since come to a standstill, and only the eddies of the current flapped with a faint sound on the bottom of the ferry boat. It seemed to Prince Andrey that the lapping of the water kept up a refrain to Pierre's words: "It's the truth, believe it."

Prince Andrey sighed, and with a radiant, childlike, tender look in his eyes glanced at the face of Pierre—flushed and triumphant, though still timidly conscious of his friend's superiority.

"Yes, if only it were so!" he said. "Let us go and get in, though," added Prince Andrey, and as he got out of the ferry he looked up at the sky, to which Pierre had pointed him, and for the first time since Austerlitz he saw the lofty, eternal sky, as he had seen it lying on the field of Austerlitz, and something that had long been slumbering, something better that had been in him, suddenly awoke with a joyful, youthful feeling in his soul. That feeling vanished as soon as Prince Andrey returned again to the habitual conditions of life, but he knew that that feeling—though he knew not how to develop it—was still within him. Pierre's visit was for Prince Andrey an epoch, from which there began, though outwardly unchanged, a new life in his inner world.

. . . from War and Peace