

MINI-EDITION

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# PERMANENT PEACE

*How To Stop  
Terrorism and War  
— Now and Forever*

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BY ROBERT M. OATES



INSTITUTE  
*of*  
SCIENCE, TECHNOLOGY AND PUBLIC POLICY

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# THE CORE IDEA:

## *How to Stop Terrorism and War — Permanently*

**T**errorism CAN be stopped. The civilized world is not defenseless against sociopaths armed with box cutters and contaminated envelopes.

We can draw these encouraging conclusions from a sustained research effort that has lasted more than a quarter century. Terrorist attacks have been devastating, but they have also served to highlight a profound scientific discovery — a discovery thoroughly documented in published scientific research, yet previously ignored by government and the media — the discovery of a technology of peace.

Terrorism amounts to unknown people attacking unknown targets with unknown weapons at unknown times. Against such stealth warfare, as America has learned, even the strongest nations are defenseless, and their citizens helpless. But the new technology of peace promises to eradicate this weakness. Repeated research has shown that any nation can now create an invincible defense against both terrorism and conventional attack. And if governments won't act, a relative handful of their citizens can do it for them — taking peace into their own hands.

Knowledge is power. This book has been written to empower people everywhere, in and out of government, with the knowledge that can generate a permanent state of world peace. To that end, every reader is invited to go through this book with a single question in mind: “In light of what I’ve read, how strongly should I support the use of this new approach to peace?”

### THE LIMITS OF VIOLENCE

The tragedy of September 11, 2001, was a terrifying way to realize the need for a totally new defense technology. As Americans learned that day to their horror — when suddenly malevolent airliners sliced into the World Trade Towers — no traditional means can stop resolute and cunning terrorists willing to sacrifice their lives.

In those awful hours, and in the months of anthrax after, it became clear that the world needs a completely new approach to defense — a preventive technology — one that can stop an attack before it has even been conceived. Whether the source of terrorism is foreign governments, independent terrorists, or indigenous psychotics, the American people (and all other people) need a systematic technology that will stop them all.

Ignorant of such a technology, the U.S. in the fall of 2001 fought back against terrorism in the only way it knew. Wave after wave of unopposed aircraft dropped countless bombs on what was, for all the hostility and brutality of its recent rulers, a poor and defenseless nation. If these attacks promised to stop terrorism, they might have made more sense. But decades of experience in the Middle East have shown that killing terrorists (and, inevitably, innocent civilians) only creates more terrorists. For years into the future, as the United States government well knows, Islamic fundamentalists will be recruiting young men to a life of terrorism against America with tales of a heartless, faceless, seemingly endless bombing of an entire Islamic nation.

Moreover, the certain terrorist reprisals for this bombing will only embody a central principle of every religion: *As you sow,*

*so shall you reap.* In the language of physics: Every action has an equal and opposite reaction. Once the vicious cycle of terrorism has begun — heartless attacks and vengeful retaliations — killers on all sides will be killed, bombers will be bombed, destroyers will be destroyed. It is understandable that Americans and their government, shocked and outraged by the terrorist atrocities, struck back with overwhelming violence. But in a fight against terrorists who can kill millions with a crop duster, and who have demonstrated the patience to wait years for revenge, such attacks are doomed to eventual self-destruction.

### A REVOLUTIONARY APPROACH

Fortunately, a long-term research effort has now defined an alternative approach. The studies have shown that it is possible, through deliberate intervention, to end the cycle of attack and revenge — through completely peaceful means. They have defined a technology of *peace* — a systematic procedure that makes it possible to switch on peace as straightforwardly as we switch on the lights.

But taking advantage of this discovery requires a revolution in thinking. Until now, national defense has been based on objective, physical science — on weaponry made largely of metal, using chemical, electronic, and nuclear technologies. But defense based on such a purely objective approach has reached its failing point: We can attack anyone, but we cannot defend ourselves.

Fortunately, this new technology has been documented nearly fifty times and confirmed in nineteen published scientific studies. Instead of objective, physical techniques, this approach uses methods that are subjective and consciousness-based — including meditation technologies known and preserved for thousands of years in the timeless Vedic tradition of India.

The Vedic (VAY-dik) explanation, in two parts, can be stated quickly — though it may take the entire book to demonstrate the underlying concepts convincingly:

**1. The cause.** In the Vedic understanding, all types of social violence and warfare have an underlying origin, namely social stress and tension, the fear and hostility between factions, nations, religions, and even competing civilizations. It is this societal stress and disorder — the chaos in the collective consciousness of any given nation, and in the world as a whole — that breaks out as violent crime, warfare, and terrorism.

**2. The solution.** For many years, based on hundreds of research studies, the medical community has accepted that meditation by an individual can calm down stress, tension, and hostility in that individual. More recently, the new studies have shown that large groups of meditators, gathered together with the intent to benefit the society around them, create the same calming effect in the wider community. Repeated tests have shown that assemblies of experts in the much-researched Transcendental Meditation® program calm down stress, tension, and hostility in the collective consciousness of the surrounding society — as measured by reduced crime, warfare, and terrorism.

The evidence indicates, in other words, that the peace technology is “wireless” — like radio and cell phones — broadcasting a coherent influence through an invisible field. In place of a broadcasting station, this subjective technology makes use of the most richly complex technological device ever created: the human brain. Just as radio stations radiate music through the underlying electromagnetic field, so research indicates that the minds of people who are expert in meditation, when gathered together to meditate in one location, radiate harmony and peacefulness through an underlying field of consciousness.

#### THE EVIDENCE

It’s obvious that such a radically new theory needs strong scientific support. In this case, as we will see in Chapter Two, the research is plentiful. Repeated studies show that whenever a large assembly of meditation experts gathers at a single location:



- As the attendance numbers at the assembly *increase*,
- Violent crime, warfare, and terrorism all *decrease*.

If the number of participants at such an assembly goes up and down, the statistics on violence go up and down with strong (inverse) correlation. The most remarkable study, based on Rand Corporation statistics, shows that during the three largest Transcendental Meditation assemblies ever held in the West — near or exceeding 7,000 people at each assembly — terrorism declined worldwide by 72% (see Chapter Two).

“This is exciting research,” says a foreign relations scholar, Professor Ved Nanda, director of the International Legal Studies Program at the University of Denver. “It is a non-traditional conception, but the straightforward evidence gives the theory credence in my eyes.”

Says Raymond Russ, professor of psychology at the University of Maine and editor of the *Journal of Mind and Behavior*, “The hypothesis definitely raised some eyebrows among our reviewers. But the statistical work is sound. The numbers are there.”

### THE SOURCE

As with many scientific discoveries, the credit for this one goes largely to a single individual, a man now widely known in the West. Nearly fifty years ago, Maharishi Mahesh Yogi left India to demonstrate to a scientific world that meditation is a scientific reality, with provable benefits for the individual. By 1980, with hundreds of studies on his Transcendental Meditation technique published in academic journals, meditation had made it to the medical mainstream. Millions of dollars in research funds from the National Institutes of Health now support further studies on the Transcendental Meditation program.

In the last twenty years, moreover, Maharishi has expanded his focus from individual meditation and individual benefits to large-group meditations and society-wide benefits. In 1960, few people thought meditation a practical tool for healthy and successful life, but the research transformed our medical under-

standing. In a parallel way, since 1980 few people have thought that large groups of meditation experts can directly create a more peaceful world — but the research is in the journals, and the terrorists are inside our borders. There will never be a better time to catch up with the evidence.

### THE CONTENTS

To that end, we will explore this new approach to peace, both theory and practice. The basic plan of the book is to compare key aspects of the timeless Vedic wisdom with scientific evidence as well as the latest scientific theories.

In **Chapter One**, we will lay out the hypothesis in detail.

In **Chapter Two**, we will review the research evidence that supports the hypothesis. Time and again, first-class scientists have devised ingenious scientific studies that have survived highly skeptical, even hostile, reviewers, and achieved publication in mainstream academic journals. The drama of these stories brings to life the rigor of the studies.

In **Chapters Three, Four, and Five** we will seek to answer the question, How can a group of people sit in one room, meditating with eyes closed, and transform the society around them? Only a radically new paradigm could possibly answer that question convincingly. In chapters that form the heart of this book, we will delve into such a new paradigm — the Vedic theories as revived in a scientific age by Maharishi. These theories combine the timeless Vedic understanding of consciousness, on the one hand, with the latest theories of quantum physics, on the other. From the standpoint of modern society, the result is a completely new understanding of life and the world — a new paradigm that combines human intelligence with nature's intelligence. To make sense of this new approach to peace, in other words, we must understand the most profound secret of human life — the most precious knowledge of seers and sages in every age — how the human mind can gain direct access to, and harness, the limitless power of the intelligence of nature. This is, on the one

hand, a practical book, focused on how to stop terrorism and war. Paradoxically, however, our urgent need to stop such gross destruction drives us to understand the most subtle essence of consciousness and life.

In **Chapter Six**, Maharishi explains the implications of all that has gone before, outlining both the theory and procedures in his own words, and drawing conclusions about what he terms the unlimited possibilities of human life — the possibilities that unfold when the individual grows to full *enlightenment*, when individual human intelligence attains alliance with, and gains the support of, the intelligence displayed everywhere in the natural world.

Finally, in **Action Steps**, readers will find practical steps they can take immediately to help bring permanent peace to our world. It is no longer necessary for peace-loving people to wring their hands and hope for the best — or to wait for governments, peace agencies, or the United Nations to act. Even one such person, or a few, or a few thousand, can make it possible for this technology of peace to be used on a massive scale, and permanently, to transform the future of the world.

Doubtless these new ideas challenge our preconceptions. But the subject admits of both scientific investigation and systematic intellectual analysis. In a body of thought he calls Vedic Science<sup>SM</sup>, Maharishi has revived ancient understandings in a systematic manner that opens them to objective testing. The upshot, in an era of worldwide terrorism, could not be more practical. As Maharishi says, “Now we have it in our power to eliminate terrorism at its basis. It is simply ignorance to believe that by killing a few terrorists, we can put an end to terrorism. What is needed is to remove the root cause of terrorism by creating an indomitable influence of coherence and harmony in the collective consciousness of the entire world.”<sup>1</sup>

Anthrax is here. Nuclear warheads are missing. Chemical weapons are rife. Future terrorist attacks could easily be much more devastating — and the United States government, with its

vast military power, can no longer protect its own citizens. In such a crisis — as it seems to this author — no responsible leader of society, nor any responsible citizen, can afford to ignore a possibility so thoroughly verified scientifically.

The only responsible course is to look carefully into this newly validated approach to permanent world peace, to ask the hard questions, and to come to an informed conclusion. We need the courage to think new thoughts, and to evaluate them thoroughly. Since terrorism is now a global scourge, and since no other approach stops terrorism — as experience in the Middle East has shown for decades — it is not overly dramatic to say that the future of the world hangs in the balance.

# 1

## PERMANENT PEACE: *Context and Hypothesis*

**T**he basic idea is simple to state: Like ripples on a pond radiating outward from a pebble's splash, ripples of orderliness and harmony radiate outward from concentrated groups of meditation experts. And the evidence for this idea has been repeated and statistically significant. Not only do signs of social disorder go down — such as violent crime, fires, traffic accidents, warfare, and terrorism — but signs of coherence and progress go up. Patent applications, for example, stock market levels, and economic indicators have all been shown to rise.

Such groups of meditation experts have been called Super Radiance assemblies. The name comes from the superradiant effect in optical physics, in which a small proportion of coherent photons in a beam of light influence all other photons to join with them in the powerfully coherent stream that we call laser light. Just as the small number of coherent photons makes the whole beam coherent, so the research indicates that even a small number of people creating internal coherence through group

meditation radiate that coherence throughout society. The beneficial society-wide effect generated by these Super Radiance assemblies has been named (in the scientific tradition of the Doppler Effect and the Meissner Effect) the Maharishi Effect, in recognition of the Maharishi Mahesh Yogi, the scientist of consciousness who first predicted the effect and who provided the meditation techniques that make it possible.

### A FIELD THEORY OF CONSCIOUSNESS

Is there a sound explanation for this society-wide, even worldwide, effect — the Maharishi Effect? Can science produce a theory for what at first sounds impossible?

The short answer to this is, yes. There is a solidly documented theory enunciated by Maharishi, a theory consonant with the latest scientific thought in other fields. In Maharishi's Vedic understanding, the reason that orderliness and harmony can ripple throughout society is that consciousness itself is at basis an omnipresent, underlying field. Like the gravitational field and the electromagnetic field, consciousness is an infinite, unbounded, nonmaterial reality through which waves can radiate over even astronomical distances.

Radio provides an analogy. Radio waves work the same way and, one hundred years ago, the concept was just as hard to believe. Marconi invented the first radio in the late nineteenth century. He gathered his friends to tell them he could use a small box to transmit his voice many miles through thin air. There was no longer any need for intervening wires, he assured them. His voice could travel invisibly through the atmosphere. At that time, however, the electromagnetic field was imperfectly understood and the natural result was that no one believed Marconi's protestations. When he gave demonstrations, people thought he had hidden wires. Finally, he had to send assistants in a boat far out to sea and transmit messages back and forth, with witnesses at both ends, to establish the veracity of his claims.

A century later we are familiar with the radio, however, as well

as with broadcast television, radar, and other examples of the phenomena physicists call *fields* and *field effects*. The electromagnetic field, for example, exists everywhere in the universe. This field is nonmaterial, unbounded and all-pervading, as though all the universe were submerged in an invisible, untouchable ocean. Radio, television, X-rays, radar (and the Sun, among other sources of light) all work by sending waves through this electromagnetic field. These waves can't be seen, but they have their effects. When you turn on your television, you gain the benefit of an electromagnetic field effect — the picture has come to your home as waves traveling through the electromagnetic field from a broadcasting station or satellite (unless, of course, you have cable). The gravitational field works the same way, as do the two other *force fields* of nature, as well as the *particle fields*, whose propagating waves we call *subatomic particles*. As the basic mechanism of nature, therefore, accounting for every aspect of the apparently physical universe, invisible, nonmaterial waves move through invisible, nonmaterial fields. Although Marconi's contemporaries thought that impossible, even insane, we have grown used to the notion by now.

To understand the Maharishi Effect, therefore, it is only necessary to posit that consciousness operates like every other aspect of nature. In this view consciousness is also an infinite, invisible field — with waves that radiate throughout society.

#### THE NATURE OF CONSCIOUSNESS

This is not our normal understanding of consciousness, of course. In fact, in modern society, the concept of consciousness is not often considered at all. We know we are conscious, we know we are awake. But what is *wakefulness*, what is *consciousness*? We vaguely picture our mind inside our head, closed up in our skull, as though the brain and the mind were one and the same. But Maharishi's understanding indicates that consciousness, like other aspects of nature, is a field, an unbounded, all-pervasive ocean everywhere available. From this standpoint,

the human brain is an intricate broadcasting and receiving station for the waves that travel the field of consciousness.

### ENLIGHTENMENT FOR THE INDIVIDUAL

One central tenet of the ancient Vedic wisdom, as brought to light in a scientific age by Maharishi, is that human life can be lived on a much higher plane than the mature, well-adjusted adulthood commonly held to be the highest goal in modern societies. In fact, as Maharishi points out, the whole of the ancient Vedic literature is filled with precise descriptions of enlightenment — of higher states of consciousness — and in these higher states, theoretically, a person becomes much more awake. Perception is said to refine and knowledge to deepen. Just as the fuzzy vision of a nearsighted man can be turned to clarity with the right type of glasses, so the relative dullness of ordinary states of consciousness can be sharpened in these more evolved states.

It is through the experience of these higher states of consciousness, Maharishi indicates, that the ancient *Rishis*, the seers, cognized the deepest realities of humanity and nature. They gained the knowledge directly, subjectively, through immediate awareness of creation's mechanics.

### THE TECHNOLOGY OF PEACE: THE HYPOTHESIS

Until recently these Vedic descriptions, when considered at all, have been thought mystical — even imaginary. But two things have happened in recent years to change that perception. First, after long centuries of neglect and repression associated with foreign conquests of the Indian subcontinent, Maharishi has revived the ancient Vedic teachings in a holistic and systematic manner. Second, in just the past few years it seems that modern science has begun to catch up with ancient wisdom. Going more deeply into their respective fields, physicists have glimpsed an ancient understanding of nature, and physiologists an ancient understanding of human nature. The two together, in the light of Vedic wisdom,



reveal a profound reality: Nature and human nature are, in fact, united at their source. As the five fingers appear independent, but are, in fact, united as one hand, so the all-pervading force and matter fields of the material world appear separate, but are in fact integrated in one fundamental unified field of consciousness.

To put the hypothesis compactly: The human mind can bring peace to the world because the human mind is *one* with the world, at the most basic level.

In Maharishi's explanations, even a few experts specializing in Super Radiance radiate an influence so coherent and powerful that no enemy would dare to attack — and, more significantly, an influence so harmonious and positive that no enemy would even be born. Thousands of years ago the Vedic seer Patanjali encapsulated this idea in a single phrase: *Tat sannidhau vairatyagah*, which means, “In the vicinity of the settled mind, hostile tendencies fall away.”

#### ONE HYPOTHESIS IN FOUR PARTS

It is possible to emphasize four postulates of this understanding from Vedic Science, four concepts which can be taken by a scientific age as predictions or hypotheses ready to be tested. Each one of these conceptions has already been the subject of some of this century's most revealing scientific investigation. Each will be a major subject in the succeeding chapters in this book. These four hypotheses:

**1. One unified field.** Vedic Science maintains that there exists one basic field of existence — not many different fields of nature but one unified field that is infinite, timeless, and transcendental — a field which underlies and supports all other fields, all the mechanics of nature's functioning. As the same ocean gives rise to all waves, so the same unbounded, omnipresent field is said to give rise to all the laws of nature that structure our universe.

**2. The human connection.** Human beings bond with this

unified field through a fourth major state of consciousness. In Maharishi's explanations of the Vedic wisdom, the human mind can settle down deep within its own nature and directly contact this underlying unified field — by experiencing a unique fourth state of consciousness. This fourth state of consciousness is precisely described and is said to be completely different from the common three states of waking, sleeping, and dreaming. As a farmer can drop a well to an underground reservoir, so the human mind can settle down deep within its own nature and directly experience the unified field.

**3. Evolution of human nature.** Human nature, in the Vedic understanding, evolves toward higher states of consciousness. The Vedic texts maintain that, once the human mind begins to attune itself with the deepest level of creation, human nature leaves behind its apparently fixed status and begins to evolve rapidly. Life starts to become more successful — more coherent, progressive, and harmonious. Mistakes decrease, suffering falls away, and this qualitative improvement builds up over time as the mind begins to experience higher states of consciousness.

**4. A technology of peace.** In his Vedic Science, Maharishi explains that Super Radiance assemblies create invincible defense spontaneously — through a harmonious, coherent, and positive state of consciousness generated throughout an entire nation. In the lore of the hunter, a man with no fear will not be attacked by wild animals. In the understandings of Vedic Science, a nation with no stress, anxiety, or internal incoherence will not be attacked by its enemies. And Maharishi emphasizes that even a small fraction of the population can radiate this field effect, this harmonizing, positive influence, throughout the collective consciousness of the entire nation. Those few minds, as they become fully attuned to nature's laws at their source, purify stress, tension, and fear from their environment. They create an impenetrable harmony and unity in the collective consciousness of the

nation that disallows invasion by an enemy. Even a single lamp can light an entire room; even one group of highly trained minds can enlighten an entire society — and thereby create the invincible defense of *rashtriya kavach*.

### KNOWLEDGE FOR ACTION

This is admittedly a totally new approach to the creation of permanent peace. But certainly nothing we have attempted in the past has given any hope of success. Nations have sometimes tried to avoid conventional war by a massive build-up of weapons — but the stockpiling of weapons has never led to anything but more warfare. As psychologist Abraham Maslow said, in a far different context, your capacities are your needs. In the context of material weaponry, if you *can* fight a war, you will. America has by far the most weaponry in the world, and it has in recent years gone to war repeatedly — in Kuwait, Kosovo, and Afghanistan, with more wars threatened by the U.S. government. Building weapons to attain peace is like dousing a fire with gasoline.

Peace talks and cease fires, however, have been no more effective. Researchers have located roughly 8,000 peace treaties concluded in the three millennia of recorded history, and their average life span has been approximately nine years. In recent times, the United Nations was founded to preserve peace through continuous discussions and negotiations, and since it was founded there have been more than 150 wars in the world.

Moreover, terrorist warfare resists weaponry and negotiations even more tenaciously than conventional warfare. As we have seen, attacks against terrorists only create more terrorists. Perversely, however, ignoring terrorists has the same effect as attacking them: It gives them reason to attack again. Most discouraging of all, peace talks serve only to inflame terrorists, who fear that treaties will bargain away their absolutist claims — and their frenzied attacks work to destroy any budding peace process. By now these self-aggravating dynamics of terrorism have stimu-

lated terrorists to a level of ferocity and destructiveness that was previously unimaginable, threatening a global conflict that could last for decades.

Whether talking of conventional or terrorist warfare, therefore, neither weapons nor negotiations have ever produced a lasting peace. In fact, the whole history of the world amounts to a scientific experiment decisively disproving these two traditional attempts at peace creation.

But now a new technology of peace has become available. Rather than tinkering with weapons and treaties, hoping thereby to create a peaceful atmosphere in the world, Maharishi's approach is to create a peaceful atmosphere directly — through a sophisticated mechanics of consciousness, a technology of peace. This subjective approach is not aimed at the *means* of war, but the *cause* of war — at the tension, fear, and anger felt by people everywhere.

It is admittedly a totally new approach — but as has never been more obvious, only a new seed can yield a new crop.

#### **THE WORLD PEACE ENDOWMENT FUND**

Based on the research evidence, Maharishi's plan is to deploy a permanent Super Radiance group numbering 40,000. Research mentioned previously has shown that temporary groups of approximately 7,000 have, three times, reduced terrorism worldwide by an average 72%. For three years, from 1988 to 1990, moreover, a single philanthropist supported a group of 8,000 meditation experts in India. Over those years, world events became almost unimaginably positive. Not only did the war of the Soviet Union on Afghanistan come to an end, as well as the long, bitter war between Iran and Iraq, but the Berlin Wall fell, the Soviet Union dissolved and the Cold War simply melted away.

In Maharishi's view, a Super Radiance group five times larger than that assembly of 8,000 will create an indomitable influence of harmony and peace that will purify the collective con-

sciousness of the entire world — and create a permanent state of world peace. This group will also be gathered in India, where Maharishi has already trained more than 175,000 people in the Vedic technologies of consciousness (including, in addition to group meditation, special Vedic performances that also reduce negativity in the world). In addition, he recommends that each nation gather its own Super Radiance group, to create an invincible defense for its citizens.

In 1990, that single philanthropist had to cease his support of the Indian group of 8,000. As a result, the assembly had to disband and, discouragingly, the world has spiraled downward toward a new world war. The lack of financial support has thus hindered the widespread use of Super Radiance. As Maharishi has often said, “World peace is now only a matter of money.”

One source of such money in every nation is the government, which has both the responsibility and the resources to establish large Super Radiance groups. In case governments are slow to act, however, a World Peace Endowment Fund has been established. This takes the creation of world peace out of the hands of politicians and gives the opportunity instead to peace-loving people in every nation. Because costs in India are so low, a Super Radiance group of 40,000 can be maintained for approximately \$125 per person per month — \$60 million per year, less than the cost of a single sophisticated fighter plane. As this book is published, more than \$100 million has already been raised, and to ensure that the needed support will be available in perpetuity, the goal for the endowment fund is one billion dollars in total, with the group to be supported by interest on the principal. With such a fund in place, providing permanent support for a powerful Super Radiance group, Maharishi is confident not only that terrorism will cease, but that the world will enjoy a state of permanent peace and progress. As he states,

The wise retaliation against terrorism will be to take a step which will completely root out terrorism forever — and this will

be by creating a very strong influence of positivity and harmony in world consciousness so that any kind of negative trends do not arise.

To examine this approach, it can help to investigate in detail the four principles of Vedic Science — the four ancient “predictions” now open to scientific investigation. And the place to begin is with the research evidence on the technology of peace itself.

For anyone looking into the use of Super Radiance to end terrorism and war, the first question is obvious: Is the Maharishi Effect an objective reality?

## 2

## PERMANENT PEACE: *The Evidence*

**T**he power of the research evidence on Super Radiance comes from the cumulative effect of such a large number of studies — nearly all of which are covered in the full book. In this mini-book, however, we will focus on one study — a bold experiment intended to affect the nearly continuous warfare in Lebanon early in the 1980s.

Dr. David Orme-Johnson is a graduate of Columbia University with his Ph.D. from the University of Maryland. While teaching at the University of Texas in the early 1970s, Dr. Orme-Johnson produced one of the earliest and most influential studies on the Transcendental Meditation technique, a study showing that regular practice of TM allows the autonomic nervous system to become more settled and stable. Since then Dr. Orme-Johnson has published more than eighty scientific papers on the Transcendental Meditation technique.

Dr. Charles Alexander earned both his B.A. and Ph.D. from Harvard University. One of the most significant published stud-

ies by Dr. Alexander showed that TM extended the life span of elderly people. Among a number of widely respected books he produced, Dr. Alexander was co-editor of a book from Oxford University Press, *Higher Stages of Adult Development* — a book enthusiastically received by experts in the field.

It was Dr. Alexander who conceived the Lebanon experiment originally. He explained,

Previously, all experiments on Super Radiance had been what researchers call naturalistic experiments. Super Radiance assemblies had gathered for various reasons, and researchers had decided after the fact to gather statistics and see what the effect had been. The statistical evidence had been strong, but many researchers prefer an experiment that has been deliberately created by the experimenters, with predictions made in advance. That was what we wanted to do in Lebanon.

Known as the International Peace Project, this study was funded in part through a grant honoring William Ellinghaus, President of American Telephone and Telegraph, and supplied by the Fund for Higher Education in New York.

The project was designed to bring together in Jerusalem 200 experts in Maharishi's Vedic Science, people who practiced both TM and the advanced TM-Sidhi program. Jerusalem was chosen, rather than a city in Lebanon, because Israel already had 30,000 people trained in the basic Transcendental Meditation technique and several hundred more in the advanced TM-Sidhi program. As Dr. Dillbeck's one percent research had shown, the 30,000 TM meditators should have been enough to produce the Maharishi Effect for a population half the size of Israel and Lebanon together. Thus, in theory, the Super Radiance assembly would have to attract enough additional people to take care of the other half of the population. This Super Radiance number was 197.

In several ways this study was more revealing than the research previously discussed.

**1. Prospective study:** In the first place, as Dr. Alexander indi-



cated, the International Peace Project was what scientists call a prospective study rather than a retrospective study. Precise predictions of the results were made in advance. Drs. Orme-Johnson and Alexander took the unusual precaution of lodging these predictions with leading independent scientists in both the United States and Israel. The clear-cut predictions, made months before the study took place, made clear that statistics were not being chosen after the fact simply because they happened to work.

**2. Multivariate study:** In the second place, the experiment was designed as a multivariate study. Most earlier studies on Super Radiance had focused on only one benefit at a time — on the reduction of warfare, for instance, or decreases in crime or traffic accidents. But Super Radiance is defined as a holistic influence that affects the entire society at once. Given this holistic definition, it should be possible to measure many different variables in a society and demonstrate improvement in them all simultaneously. That was one goal of this study. The researchers predicted, among other things, that as numbers at the Super Radiance assembly rose, automobile accidents and fires in Jerusalem should decrease, the Israeli stock market and the national mood (as measured by content analysis of the local newspapers) should improve, and, most important, the continuing warfare in neighboring Lebanon should decrease, as measured both by reported war deaths and by content analysis of media sources. If Super Radiance affected all of these variable simultaneously, the results would be much more convincing.

**3. Internal replication:** In the third place, the International Peace Project provided, quite inadvertently, an experiment that replicated itself a number of times within two months. The goal of the program was to gather 200 experts and keep them together throughout August and September of 1983, but practical considerations made this impossible. Suitable hotel space was only irregularly available, most students had to leave at the

end of August to return to school, and many employed people found it difficult to get long leaves of absence. As a result the number of meditation experts slowly built up for the first two weeks of August, attained high levels for the second two weeks, and then rose and fell irregularly throughout September. Though unplanned, this up-and-down pattern produced a compelling experiment. The statistics on crime, fires, the war, etc., would now have to move repeatedly, in correlation with the attendance numbers at the Super Radiance assembly, rather than only once.

**4. Time series analysis:** Finally, Drs. Orme-Johnson and Alexander chose to use a powerful method of statistical analysis, known as *impact assessment analysis*, or *time series analysis* (or, for the most technical term, *Box-Jenkins autoregressive integrated moving averages*). This statistical tool gives a mathematical answer to the question, “In such a complicated system as human society, how do you know that such a result wasn’t going to happen anyway, even without the Super Radiance group?” This is especially important in a societal study, since societies are replete with an infinite number of internal influences, any one of which might theoretically confound the study. Time series analysis, however, takes into account whatever influences have already been present in a society (even if they are unknown), then analyzes the impact (if any) of some new factor in the continuing situation.

Using such time series analysis, researchers can, for instance, look at the daily history of automobile accidents for several months up until the day a Super Radiance group first gets together. Time series analysis allows them to construct a mathematical formula which accounts for all the systematic ups and downs those automobile accidents were already showing, day by day. That formula (or statistical model) therefore automatically takes into account all the different factors that have already been affecting automobile accidents significantly,

because those factors are reflected in the changing pattern of the statistics — *even if these causative factors involved aren't known to the researchers.*

Such a powerful tool can radically simplify the apparent complexity in human society. With time series analysis, the infinite number of social influences, most of them small, tend to cancel one another out. Only those significant influences capable of causing measurable changes remain. In a crime study, for instance, specific types of crime may be found to increase every Friday and Saturday, which is explained by what researchers call a *weekend effect* (that is, more colloquially, by people with time on their hands and liquor or other drugs in their systems). The same crime study may find strong increases every summer, and closer analysis may explain this by a correlation of violent crime with higher temperatures. However, it is not necessary to understand the mechanism that causes every significant pattern in the data. If, in the automobile accident example, accidents move up and down in a monthly cycle, but the reason for this is not known, the monthly cycle is still reflected in the statistical model. This model can then be used to generate predictions about the immediate future of automobile accidents — if only the current causative factors (known and unknown) are in play. If automobile accidents suddenly drop much lower than the prediction, for example, this is strong evidence that a new influence has suddenly appeared.

**CRIME, FIRES, ACCIDENTS, AND WAR DEATHS  
ALL AFFECTED AT ONCE**

With the study so tightly designed and the mathematical tool so powerful, if the Maharishi Effect were an objective reality, this new factor should certainly appear. That is just what happened — in great detail. Every one of the predictions was confirmed, and the results on all of them were statistically significant. The most heartening single statistic showed that when attendance at the Super Radiance assembly was high (in the highest quartile,

the 25% of days with highest attendance), as compared with days when attendance in the lowest quartile, war deaths in neighboring Lebanon dropped an average of 76%. When Super Radiance numbers went up, moreover, the Lebanon war intensity (as measured by content analysis of daily newspapers) decreased ( $p < .01$ ), automobile accidents decreased ( $p < .0005$ ), fires decreased ( $p < .0001$ ), and the Israeli stock market went up ( $p < .025$ ).

Four other features of the study were intriguing.

**1. Two weeks of strongest results.** Events in the two weeks when the Super Radiance attendance was continually high were dramatically more positive than during the other six weeks of the study. War deaths in Lebanon averaged only 1.5 per day during that two-week high-attendance period and more than 20 per day the rest of the time. Automobile accidents were 15% lower during that two-week period than during the other six weeks, fires 26% lower, and the stock market 27 points higher (averaging 457 as opposed to 431). These marked changes during the two weeks of continuously high attendance provided additional evidence that an increase in meditation experts can provide an increase in the Maharishi Effect.

**2. Effect stronger when closest to the source.** The effect of the Super Radiance assembly appeared to be stronger closer to the source. Even when the attendance at the assembly was relatively low, local statistics in Jerusalem were positively affected. As the numbers rose, statistics in Israel as a whole began to change, and only when the numbers were high (in the highest quartile, the highest 25%), did warfare in Lebanon drop significantly. This is consistent with the theory of the Maharishi Effect — to influence a larger area with a larger population, a larger Super Radiance number is required.

**3. Effect stronger when all variables combined.** When all the variables were combined mathematically into a single index, the correlation between the numbers of people meditating together and this sum of all the variables was even more strik-

ing. Statistical evidence always becomes more powerful when many different ways of looking at the data are employed simultaneously. If the various approaches cancel each other out, then no real underlying effect is indicated. If the various approaches reinforce each other, the underlying effect is more strongly defined.

When the standardized Z score combining fires, traffic accidents, crime, the war, the stock market, and newspaper content analysis (known collectively as the Quality of Life Index) was plotted over the Super Radiance attendance, the two lines tracked each other's up-and-down movements very closely over the entire 60-day period (see chart on the next page). The connection is easily seen — the two lines moved up and down with unmistakable correlation. As a visual image of the Maharishi Effect, this one chart could serve admirably — one picture indicating that dramatically different aspects of a society, from stocks to war deaths to traffic accidents, all correlate highly with the number of people practicing the technology of peace.

Such a visual image has an analytical role as well. Reviewers of research occasionally argue that the mathematical analysis used on a given experiment is so complex, with so many factors decided upon by researchers, that any correlations found may actually be created by the analysis. In this case, however, such an argument is not sustainable. The correlation is so strong it can be seen by the naked eye — before any mathematical analysis is begun.

**4. Increased social coherence.** Finally, as the Super Radiance numbers increased, various statistics which usually have no relationship with each other suddenly began to move in step. Many different social measures ordinarily do not relate to one another at all. No one would try to predict stock prices, for instance, by looking at statistics on automobile accidents, or fires, or crime. Most such measures have nothing to do with one another, that is, they have no causal effect on each other (in technical terminology, they are *orthogonal* to one another). This was

### Reduced Conflict in Lebanon and Improved Quality of Life in Israel



Increasing numbers of participants in Maharishi's Transcendental Meditation and TM-Sidhi program led to improved quality of life in Israel. The chart shows the strong correspondence between the numbers of TM-Sidhi participants and a composite quality of life index comprising many variables, including war intensity and war deaths in Lebanon, Israeli national stock market prices and national mood, and auto accident rates, number of fires, and crime rates in Jerusalem and Israel.

exactly the situation during weeks on the International Peace Project when the meditating numbers were low — the different measures moved independently of each other (in statistical terms, there was high *variability* among the measures). When the Super Radiance numbers increased, however, there was a strong tendency for all the different measures to begin moving together and to move in the predicted direction.

This tendency to coherence was so marked that its *p* value (chance of coincidence) was less than one in ten thousand. Thus, when the Super Radiance group became large enough, factors in society that are normally uncorrelated (random or incoherent), suddenly became correlated (orderly or coherent). This sudden decrease in variability, or increase in coherence, strongly suggests that some new factor, a factor not previously evident, had begun to affect all the statistics simultaneously. Says Dr. Orme-Johnson,

The question posed by the data is why does the group practice of Transcendental Meditation and the TM-Sidhi program lead to wide-spectrum changes in the society? The answer we suggest is that these Super Radiance assemblies produce a marked increase in the coherence of the collective consciousness in the society. From physics we know that an incoherent system is one with destructive interference: the various wave patterns interfere with each other in such a way as to annihilate each other. A coherent system, on the other hand, shows constructive interference: the waves reinforce each other, rather than canceling each other out. This is what the statistics show in a society affected by a Super Radiance group. The different elements in the society decrease in destructive interference. Crime is one aspect of society destructively interfering with another, and crime decreases. Automobile accidents are a clear example of destructive interference, and automobile accidents decrease. In every sphere of action, there is an increase in orderliness and cooperativeness. The interests of the society tend to be supported more by each member. The collective consciousness has been purified of neg-

ativity and stress, and the results can be measured in many different ways.

### OLD IDEAS AND NEW FACTS

The International Peace Project had been dramatically conceived. The statistical results were strongly significant, and supportive of the theory in many detailed ways. Now Drs. Orme-Johnson and Alexander decided to aim high: They submitted their results to the journal usually deemed the leading publication in the field of peace studies, the *Journal of Conflict Resolution* edited at Yale University. The ensuing struggle for publication took more than three years — a struggle that made for an instructive case study on the evolution of scientific thought.

As mentioned in the first chapter, the history of science is a history of repeated collisions between old understandings and new evidence. Any such confrontation between old ideas and new facts can take on a poignant human reality. Long-accepted notions about the world are usually deep-seated and emotionally difficult to relinquish. This emotional commitment is frequently reinforced because many erroneous understandings of nature are based on what seem to be reasonable, common sense observations.

In Galileo's case, for instance, every sighted human being can see with his own eyes that the Sun revolves around the Earth. It happens every day. This perception makes people feel important because it makes the earth seem the center of creation. When Galileo spoke up for scientific evidence showing that, in fact, the Sun was the center of the solar system and that the Earth revolved around the Sun, he thus ran headlong into both common sense perceptions and deep emotional attachments. People simply could not accept the new idea. They locked him up.

A similar collision between preconceptions and scientific evidence occurred in the 19th century. The famous Michelson-



Morley experiment attempted to measure changes in the apparent speed of light as the experimental apparatus was moved either toward or away from the source of light. If a football player runs toward his quarterback to catch a pass, the ball hits his hands at a higher rate of speed than it does if he runs away from the quarterback. Relative velocity depends on the motion of both the source and the receiver. But the Michaelson-Morley experiment, done to the highest tolerances possible in the nineteenth century, showed that the speed of light never changed, regardless of motion by the source or the receiver. This was such a radical experimental finding, it so deeply violated every known law of physics, that no scientist was able to do anything with it for a generation. Then Albert Einstein took hold of the idea. Clinging firmly to the experimental finding, he let go of all preconceptions. The result was his theory of relativity, in which the speed of light was held invariant, and the other basic building blocks of the physics of his time, the measurements of distance and time, lost their absolute status.

These collisions between old ideas and new facts are usually personally shocking to most researchers. Thomas Kuhn, who first developed the idea of the *paradigm shift*, the radical changes that periodically occur in scientific thought, noted that such a shift usually takes about thirty years after the experimental evidence is in. What that means, basically, is that an entire generation of experts, nurtured on the old ideas, has to grow old and retire before the new understandings become widely accepted.

As the struggle at the *Journal of Conflict Resolution* illustrates, the statistical evidence supporting the Maharishi Effect causes the kind of confrontations and internal conflicts common to all collisions between old beliefs and new evidence. In the case of the International Peace Project, the concept of the Maharishi Effect flouted all accepted scientific understanding, yet the experiment was conducted in a particularly rigorous form. The study was prospective and multivariate, with seven internal replications, and

analyzed with the rigorous and illuminating tool of time series analysis. The results were significant for all of the variables, the results were stronger closer to the source, the correlation to Super Radiance could be seen with the naked eye when all variables were combined, and normally uncorrelated statistics became highly coherent. Moreover, alternate explanations such as weather, holidays, etc., were statistically ruled out. In such a case, the evidence strongly supported a causal interpretation.

### THE JOURNAL'S FIRST REACTION

Dr. Bruce Russett, professor of political science at Yale, was then editor of the *Journal of Conflict Resolution*. Confronted with what was doubtless the most unconventional study he had ever received, Dr. Russett decided to send it out to four different referees, two more than he usually used. The responses he received were widely various. One granted that the study was “logically and methodologically coherent,” but strongly recommended against publication because “the hypothesis, to be frank, I regard as absurd.” Although this view would doubtless have been shared by many of that reviewer’s colleagues, yet it is also a clear example of “don’t confuse me with the facts.” Dr. Russett to his credit did not consider it a final word. Taking a different view of the same situation, another reviewer said, “The fundamental assumptions of a ‘unified field’ and a ‘collective consciousness’ are not within the paradigm under which most of us operate. Yet if one will, for the sake of argument, accept these premises as plausible, then the research conforms quite well to scientific standards.”

One referee, Dr. Robert Duval, professor of political science at West Virginia University, withheld his recommendation because he had spotted what seemed to him a possible flaw in the statistical design. “One may conjecture,” Dr. Duval said, “that instead of TM-Sidhi techniques influencing conflict in Lebanon, the level of conflict led the participants to hurry down to the hotel and meditate at the first sign of violence across the border.” His hypothesis was that the warfare in Lebanon tend-

ed to be episodic. If a flare-up led meditators to race down to the assembly, the flare-up would then pass of its own accord, making it look like Super Radiance had caused the decline.

Drs. Alexander and Orme-Johnson replied that this seemed extremely unlikely. In the first place, the number of daily drop-ins at the assembly was very small. Most participants came from places outside Jerusalem, and they usually came for a week or more at a time. In the second place, assuming that assembly participants did react to news of the war, that still couldn't account for the changes in crime, traffic accidents, fires, and the stock market. If the war were causing the attendance changes, then there should be no correlation between those same attendance changes and the other variables. Dr. Duval, however, had suggested a stringent statistical test — the use of *transfer function analysis* (also known as *lead-lag analysis*) to produce *cross-correlations*, a statistical tool which would indicate whether changes in warfare lagged behind changes in the Super Radiance attendance, or changes in attendance lagged behind changes in the warfare. Obviously, the cause must come first. Dr. Duval felt confident that his conjecture was correct and he reported that he “suggested the addition of transfer functions to identify the direction of causation — smug in the belief that a negative lag in the cross-correlations would reveal that the number of participants was the result, not the cause, of the activity.”

#### SUPER RADIANCE IS THE CAUSE

Transfer function analysis, a branch of time series analysis, is a particularly laborious and time-consuming process. Drs. Orme-Johnson and Alexander hadn't thought it necessary, given the strong correlation of the Super Radiance attendance with so many different variables at once. But this type of give and take is common before journal acceptance. They therefore put months into careful transfer function analysis of every individual variable, from war deaths to the stock market, then did the same for composite indices that combined the variables in dif-

ferent ways.

The results strongly supported the Super Radiance hypothesis. Approximately half the time, the Super Radiance attendance changed first and the warfare and the other variables second (most commonly one day later). The other half the time, the two changes occurred on the same day. Most significantly, there was never any indication that warfare or the other variables led the Super Radiance attendance.

Confronted with this evidence, Dr. Duval gracefully relented. Even when the attendance and the war changed on the same day, Dr. Duval commented, that indicated the assembly attendance was the causative agent. Although such simultaneous changes seem to be, in Dr. Duval's words, "a toss-up," with "simultaneous causation," yet, "In this case, with daily measures of the dependent variables, the TM proponents win the toss-up. News travels fast, but not, I would think, that fast." Even he, in other words, did not imagine that (1) fighting could have broken out, (2) causing meditators to run down to the assembly, after which (3) fighting would calm down of its own accord — all in one day. If the attendance increased and the fighting decreased on the same day, the only logical presumption was that the attendance increase caused the warfare decrease. As for those times when the changes in Super Radiance *preceded* the changes in the dependent variables, the interpretation was obvious. As a result, "The direction of causation," in Dr. Duval's phrase, moved unambiguously from the Super Radiance assembly toward the declines in war deaths, crime, traffic accidents, and the other variables.

The journal's editor, Dr. Russett, now faced with conflicting recommendations, had to make his own choice. He felt ambivalent himself, but could not side with the reviewer who had simply dismissed the Super Radiance hypothesis. Mentioning the example of Galileo's travail, Dr. Russett said, "The practice of censorship in science, as in more overtly political realms, can be

very unedifying.”

After extensive thought, Dr. Russett decided in favor of publication. In an unusual “Editor’s Comment” which he printed with the research paper (along with a commentary by Dr. Duval), Dr. Russett said, “The following article presents and tests a hypothesis that will strike most readers (myself included) as, to say the least, unorthodox. . . . Yet the hypothesis seems logically derived from the initial premises, and the empirical testing seems competently executed. These are the standards to which manuscripts submitted for publication in this journal are normally subjected.”

It was a decision deliberately made in favor of the scientific process, a decision to pay attention to statistical evidence rather than theoretical preconceptions or unexamined “common sense.”

#### PERMANENT PEACE AS AN OBJECTIVE REALITY

To explain this technology of peace, researchers on Super Radiance refer to a radically new concept — to the theoretical field nature of consciousness. They argue that like the electromagnetic field, through which TV pictures radiate, consciousness must also have a field nature through which the statistically measurable influence of peace radiates.

To understand such a postulated field theory of consciousness, especially in the Vedic-based explications of Maharishi, it is necessary to delve into two profound, underlying principles, two of the four basic hypotheses listed in Chapter One. In Maharishi’s understanding:

**1. The unified field.** The field of consciousness is understood to be, in fact, the most basic level of nature’s functioning, one fundamental and completely unified field.

**2. The fourth state.** The human mind can directly experience this unified field in a *fourth major state of consciousness*.

To understand Super Radiance, in other words, we must first understand subtle and profound aspects of both the natural

world and human consciousness. Put another way, we must now understand how modern scientific theory and experiment have caught up with the timeless Vedic wisdom of consciousness.

The place to start is at the deepest levels of nature's functioning. Physics in the twentieth century has plumbed the depths of material creation and exposed the delicate inner workings of the apparently physical world.

What can these profound scientific explorations tell us about a single unified field of all the laws of nature?

# 3

## THE UNIFIED FIELD: *Home of All the Laws of Nature*

In his Vedic Science, Maharishi explains that nature's basis is one unbounded field of infinite potential — a field that is unmanifest and transcendental. In this understanding, stars and planets, trees and people all have a common source in one invisible, unmanifest essence of existence. It is through this field, Maharishi maintains, that the influence of large group meditations radiates. For this reason, the fundamental Vedic explanation of Super Radiance begins with this one principle.

The topic explored in this chapter: How the investigations of modern physics have been able to uncover and precisely define such a hidden, unified basis of the universe.

Such a view of nature does not seem to square with our common sense experience of the world, of course. When we open our eyes and look around, we see specific objects everywhere and a “transcendental field” nowhere. Yet the Vedic literature repeatedly maintains that the surface appearance of nature hides the deeper reality, that deep beneath the ever-changing surface of creation lies *parama vyoman*, the “imperishable transcendental field.”

In the Upanishads, a Sanskrit compilation said to contain the essence of the four central Vedas, there is a well-known story that graphically describes this unmanifest field of pure potentiality. The story is cast as a conversation between father and son about the seed of the banyan tree, a seed which happens to be hollow. It begins with a command by the father.

“Bring me a fruit of the banyan tree.”

“Here is one, sir.”

“Break it.”

“It is broken, sir.”

“What do you see there?”

“Some seeds, sir, exceedingly small.”

“Break one of these.”

“It is broken, sir.”

“What do you see there?”

“Nothing at all.”

The father said, “My son, that subtle essence, which you do not perceive there — in that very essence stands the being of the huge banyan tree. In that which is the subtle essence all that exists has its self. That is the True, That is the Self, and thou, Svetaketu, art That.”

To people raised in a society based on science and a materialist worldview, this understanding of an unmanifest essence of existence may seem surprising — but we can find it in every tradition and every culture. In China, Lao-Tsu spoke of the Tao, “Born before heaven and earth/In silence and the void,/Standing alone and unchanging.” In Rome, Plotinus spoke of the One, “the source of life, the source of intelligence, the origin of being. . . . All these entities emanate from the One without any lessening, for it is not a material mass.” In the modern European tradition, theologian Meister Eckhart based his metaphysics on the “nothingness that is beyond existence,” an “eternal silent undifferentiated one-ness,” and William Wordsworth can serve as an example of many poets and artists:



And I have felt a sense sublime of something far more deeply  
interfused,  
Whose dwelling is the light of setting suns,  
And the round ocean and the living air,  
And the blue sky, and the mind of man;  
A motion and a spirit, that impels  
All thinking things, all objects of all thought,  
And rolls through all things.

It is the Vedic tradition, however, which defines this view most precisely and which systematically builds the full development of human life on its foundation. Certainly Maharishi has used this concept as the basis of his teaching, and he has taken great care to be detailed and exact in his definition. It is not a poetic feeling he is speaking of, nor a mystical abstraction. Even before modern physics began to glimpse the unified field as a mathematically definable reality, Maharishi spoke of it in a systematic way. Writing in the 1960s, and using the phrase “the absolute field” as the label, he said,

The absolute field lies at the root of everything. It is the omnipresent, essential constituent of creation, beyond all relative existence, beyond the realm of time, space, and causation, the boundaries of the ever-changing, phenomenal states of life. It enjoys the status which knows no change, the status of eternal existence. The different aspects of creation, of relative existence, of all the forms and phenomena in the ever-changing states of life in the world are as ripples and waves, having their basis in this vast, transcendent ocean. But in itself it is unlimited, unbounded, unmanifest, unchanging, eternal. It is the absolute state of existence.

Let us retrace the path that modern physics has blazed, moving from the surface level of the world deep into the heart of creation’s mechanics — and then remain awhile at that source and explore its mechanics thoroughly. Let’s take that journey, step by step, and understand the hidden world that physics has dis-

covered — a transcendental realm that helps explain not only Super Radiance and permanent peace, but also the highest possibilities of human life in enlightenment.

### QUANTUM FIELD THEORIES

Though their speciality is still frequently, and anomalously, called *particle physics*, experts in subatomic physics no longer picture solid particles floating in empty space. Indeed, they don't think in terms of empty space at all. Instead their investigations have led them to the idea that space is filled completely by pulsating fields. What we think of as material particles moving through empty space turn out on closer inspection to be nothing but the omnipresent field itself, fluctuating and vibrating. Fritjov Capra, a physicist at the University of California, has written in the *Tao of Physics*,

The quantum field is seen as a fundamental, physical entity; a continuous medium which is present everywhere in space. Particles are merely local condensations of the field; concentrations of energy which come and go, thereby losing their individual character and dissolving into the underlying field.

A wave on the ocean appears to have its own reality; it can be measured, it can be seen to move, it can slap up against the side of your boat. And yet such a wave is nothing different from the water around it, nothing but a local fluctuation or excitation in the unbounded ocean.

In just that way, quantum mechanics now describes particles as waves, as localized fluctuations or excitations in the underlying field. In fact, the equations used by quantum scientists are termed *wave mechanics*, and the mathematical formalism that describes the attributes and actions of any particular quantum is known as the *wave function*. Moreover, a quantum field has no physical or material reality. The ocean is made of water, which moves as waves, but a quantum field is made of “no-thing” — it has no substance.

In such a theory, the conception of solid matter disappears altogether. Einstein put this plainly: “We may therefore regard matter as being constituted by the regions of space in which the field is extremely intense. . . . [T]here is no place in this new kind of physics both for the field and matter, for the field is the only reality.”

### TOWARD THE UNIFIED FIELD

In the 1950s there seemed to be a large number of infinite, unbounded fields — one for electrons, one for protons, one for the strong nuclear force, etc. — each field with its own vacuum state. Within a decade, physics had reduced this plethora of fields down to four fundamental force fields, as well as four fundamental particle fields, but this still meant eight separate departments in nature, some of them not yet well understood.

Such a situation was not satisfying to physicists. For the smooth functioning of natural law, from the galactic to the subatomic levels, it seemed that all of creation must be one integrated whole. In the words of Heinz Pagels, formerly director of the New York Academy of Sciences and author of two of the most popular books on quantum physics, *The Cosmic Code* and *Perfect Symmetry*,

The dream of Einstein was the search for a master law of the universe. He sought in vain for one unified picture of nature from which all the other physical laws could be deduced — but in recent years many other physicists have taken up his quest. The goal is to construct a theory that begins with one master law and results in only one logically possible universe. Not that everything in that universe would be determined — not that you or I had to come into existence right from the beginning — but that the master law would generate a universe characterized by the laws of nature as we know them. This is the physicist’s dream.

Since the late 1960s, physics has made tremendous progress in realizing Einstein’s dream. Theoretical physicists have developed models that reveal an underlying unity, in which the four

force fields and the four particle fields of nature exist in one fully unified wholeness. Physicists today look to these theories for the deepest understanding of nature.

### DISCOVERY OF THE UNIFIED FIELD

Through the use of a mathematical formalism known as *supersymmetry*, in fact, physicists have succeeded in devising completely unified field theories which unite all four of the natural force fields (and all particle fields, as well). All such supersymmetric theories define the existence of what is sometimes called the *superfield*—one *unified field* which contains within it the seeds of all the force and matter fields in nature. This newly defined unified field stands in a parental role to all the fields, all the particles, all the forces. With these theories the understanding of nature has reached a completely unified description.

John Hagelin, a Harvard-trained physicist who has worked at both the European Center for Nuclear Research and the Stanford Linear Accelerator, the two leading centers of unified field research, has been an important contributor to this search for physical unification, and his publications on this topic have been among the most cited papers in the field. For the last ten years, he has been Director of The Institute of Science, Technology and Public Policy.

Hagelin frequently makes presentations on the nature and qualities of the unified field at the heart of creation. In his lectures on these superunified theories, Hagelin usually starts with a review of the progress made by twentieth-century physics in understanding the progressively deeper layers of nature's functioning. He begins by reviewing the "dissolution" of solid particles.

The particle concept goes very deep in the history of science. You can call it "billiard ball mechanics." Since Newton at least it has dominated the conceptual framework of science, and it is in a sense a hangover of three centuries of studying billiard balls and their ilk. Even today most physics students begin their study of physics by analyzing the rolling of balls on inclined planes. But

this notion of solid, massy particles, so deeply ingrained in our thinking, is simply inadequate at the quantum mechanical level. This concrete, familiar concept, which was supposed to be the basis of nature, slipped through our fingers in the first part of this century. We were left with something much more abstract — waves in an underlying quantum mechanical field.

And as Hagelin says, the shift from particles to fields was not the conclusion of this move from the concrete to the abstract.

The wave function is a more abstract, more unlocalized, more expanded concept than the particle. Nevertheless we are familiar with waves, we have an image of waves in a field, such as waves on the surface of a lake. But then at the most abstract level of the field — the state of least excitation, or vacuum state, where the lake has, as it were, settled down completely — in that state the quantum field itself has no definable shape. The vacuum state, in fact, is the coexistence of all possible shapes of the field simultaneously. This can't happen with the surface of a lake. There cannot possibly be the simultaneous superposition of all possible shapes of such a classical field. So we find that even the term “field,” as we know it, is inappropriate to describe the quantum mechanical reality. The notion of field also dissolves, and we are left with an abstract, unlocalized something that does not even have a definite shape.

#### **DISCOVERY OF THE UNIFIED FIELD**

This progression away from the concrete and toward the abstract culminates in the recent definitions of the unified field, which is, in a sense, the simultaneous superposition not just of all possible shapes of one field, but of all possible fields. In his Vedic Science, Maharishi indicates that it is the nature and qualities of this fully unified field at the basis of nature which offer to human beings a life of infinite potential — including the ability to directly create peace in the world. A detailed description can help explain why.

In the first place, as Hagelin points out, the unified field is both extremely abstract and very real.

As one's attention is brought to the most fundamental level of nature, there is a transition in the structure of natural law. From this most basic standpoint, it is possible to see that the apparent laws of nature at more superficial levels are the result only of an approximate and fragmented viewpoint. At the level of the unified field, nature is completely abstract but infinitely energetic and dynamic, and within that level of infinite energy all the laws of nature are found united. Out of this most fundamental level of nature's functioning arise all the laws of nature which uphold the functioning of the more superficial and complicated levels. The unified field is thus highly abstract, but very real. From there, all the laws of nature originate.

In the deepest understanding, moreover, the perfect symmetry of the unified field exists at every point, omnipresent, deep within the structure of nature. Starting at any given point, you can approach the unified field through a series of steps of unification, each step taking place, in John Hagelin's phrase, at "finer and finer time and distance scales" — that is, in areas and time-frames which are smaller and smaller. If we imagine that our microscope focuses in beyond the atomic level, beyond the level of subatomic particles, and down to the finest possible level of nature, there we would find the closest approximation to a point value of space and time, what is known to physicists as the *Planck scale* of nature's functioning. Beyond this unimaginably minute level, transcendental to every aspect of the apparently physical universe, physicists say that the unified field is fully lively.

The Planck scale is considered by physicists to be the fundamental scale of physics, the smallest size possible in nature. This is true because at the Planck scale the whole notion of size — and not only size, but all concept of space and time — cease to have any meaningful reality. As Hagelin says,

At the level of the Planck scale, gravity also becomes a quantum reality. This means that the arena of the gravitational field, the four-dimensional manifold of space-time which Einstein first defined, no longer has a definite shape. The four-dimensional geometry of our familiar world assumes the quantum aspect of the simultaneous coexistence of all possible shapes. Thus space and time as concepts to describe nature become inappropriate. If you want to find the distance between two points, you can't find a well-defined answer. If you try to lay down a ruler on the manifold, you find there are an infinite number of manifolds simultaneously. All geometries coexist and there ceases to be any definition of distance.

In other words, it is not possible to move to a smaller time or distance scale than the Planck scale because, at the Planck scale, smaller no longer means anything. The geometry of space-time, the backdrop for the other three forces, or fields, of nature, finally itself dissolves into a shape-shifting, indefinite, ever-changing reality. In fact, in Hagelin's understanding it is not possible even to *think* about the unified field in any reasonable way. This is true because,

At the Planck scale of superunification, space and time have no currently viable definition, and there is no way to determine what comes first and what comes second. And when that happens, even causality becomes suspect. Causality is a fundamental aspect of empirical science. Science is involved with questions of why. We assume you can ask why something happened, what caused it, and have that be a reasonable question. But a cause, to be a cause, must precede the effect. Why is this chalk in two pieces in my hands? Because, at some time in the past, I broke the two pieces apart. Sequence in time is fundamental to causality. If you can't define sequence, you can't define a reasonable causality, and if you can't define causality, the whole project of empirical science and logical exploration comes into question.

Yet this indefinable, even unthinkable, essence of existence, which is found at every point throughout the universe, is by its

very nature a source of infinite potential — a vibrantly dynamic field of unbounded possibilities. At that finest level of nature's functioning, the transition of space-time geometry becomes so dynamic that Hagelin calls it a boiling of that geometry into a space-time foam. In the words of Heinz Pagels,

On large-distance scales such as those we experience every day, space-time looks flat and smooth like the ocean surface seen from on high; but up close at the Planck scale it is churning and foaming like the ocean in a storm. If physicists are to describe the microworld of Planck-scale distances, then little remains of the concept of a space-time continuum upon which the description of nature has so far been based.

What is this foam made of? Each bubble is a universe within itself. Says Hagelin, "As we go from grosser levels of nature down to that finest level of the Planck scale, there appears a continuous effervescence, a continuous bubbling up of entirely separate universes."

Every possible universe, every possible law of nature, every possible combination of particles, forces, and fields — all the possibilities of creation are continually roiling up from the infinitely creative dynamism of the unified field of all the laws of nature. This is the reality at the basis of existence. Eddington's writing table has a solid layer on the surface, but when we take our attention to the finer and finer levels deep within, we come upon, first, a swarm of subatomic particles, and finally a foam of infinite potential — a field of all possibilities.

These latest unified field theories thus give us a penetrating, and apparently paradoxical, insight into the workings of nature. The particular, solid, material objects which we see around us on the surface level of existence, and even the fundamental force and particle fields that lie deep within the functioning of nature, are but varying expressions of one unified field of all the laws of nature. On the one hand, this is a field of infinite creativity, roiling with unbounded possibilities, but on the other hand, it is



completely abstract and unmanifest, beyond space and time, beyond, and devoid of, all forces and particles. Although it gives rise to an infinity of universes, it itself is beyond all the hubbub on the surface level of life — a field of infinite silence, of perfect peace.

Summing up his discussion of the progress physics has made in describing the ultimate workings of nature, both microscopically and cosmologically, Heinz Pagels makes his most important point in simple language:

When historians of science look back on the 1970s and '80s, they will report that for the first time scientists constructed rational mathematical models based on the laws of physics which described the creation of the universe out of nothing. And that will mark the beginning of a new outlook on the creation of existence.

#### **FROM MATTER TO MIND**

The tale of the hollow banyan seed thus seems an appropriate analogy for the mainstream ideas of modern physics. In the current theories of physics, the source of all the force and particle fields that make up the universe is beyond any specific manifestations seen in the real universe. It is beyond space, beyond time, beyond forces, beyond particles, transcendental and absolute, a field of silence and peace. Yet that empty, silent field is somehow a field of fullness, a field of infinite potential that can give rise to not just one specific type of creation, but to an infinite foam of universes.

For someone seeking a standpoint for Archimedes' lever, or else a master switchboard — not just for this universe but for all possible universes — quantum physics has thus uncovered an ideal candidate in the unified field. The ancient Vedic wisdom propounded such a basic unified field, and now physics has at least glimpsed its reality.

There is only one difficulty with this discovery as it has been made through objective science. It doesn't seem to be of any

practical use. There is no apparent way for a human being to take up a position at this transcendental level, no way to take advantage of the infinite potentiality which is lively there.

In his Vedic Science, however, Maharishi posits a profound possibility. The ancient Vedic tradition of knowledge maintains that the human mind can directly *experience* the unified field. This is not on the basis of surface-level thinking and logical analysis, but rather on the basis of direct immersion in, or conscious identification with, this field. The mind can theoretically settle down deep within itself and, in experiencing its *own* source, experience the source of all creation.

Thinking about a cool swim on a hot day is one thing; diving directly into the water quite another. Direct experience is beyond thought; it is real, tangible — it gets you wet, it cools you off. This has been one of the main emphases in Maharishi's teaching of Vedic Science — the unified field is not a thought, not a concept, but a reality which can be directly experienced. The experience of the unified field, he says, is an experience beyond all thought, beyond even the finest levels of the thinking process.

This is the purpose of meditation — a direct dive into the unified field, experienced as the pure, unbounded, transcendental essence of one's own consciousness, as the simplest state of one's own awareness. And this direct dive is, in theory, the fundamental mechanics of Super Radiance, as well. To radiate peace, in other words, contact the field of infinite peace within.

And physics has even more to say on this topic. To a surprising extent, the explorations of quantum physics have uncovered an indissoluble interfusion of mind and "matter." It will prove fruitful to spend one more chapter with some of this century's greatest physicists, finding out what more they can tell us about the nature of nature — and its relationship with consciousness.

# 4

## CONSCIOUSNESS AND CREATION:

### *From the Standpoint of Physics*

**T**he mysterious intelligence of creation is one essence of childhood awe. The filigreed wonder of snowflakes, the mathematical beauty of coiling seashells, the delicate architecture of spring flowers, all the inherent genius of nature and life seem to speak of a living logic embedded in the world.

Given the orderly, predictable world of nature, it is sometimes difficult to understand how we ever talked ourselves out of the obvious, innocent perception that intelligence is infused in every aspect of creation. It is true that, at a certain stage of the evolution of scientific thinking, many scientists pictured the material aspect of creation as dead and inert, and the constructs of galaxies, planets, and life as simply the chance congregations of material bits piling up randomly. But science has advanced. Distinctions that once seemed obvious, such as that between solid matter and empty space, have dissolved. And as we will see in this chapter, quantum mechanics has brought into question even the ultimate distinction upon which science itself is based — the distinction between the scientist and what he is studying,

the distinction between the living mind of the observer and the inert matter being observed.

In the world of quantum physics, as leading physicists have often said, mind and matter have become inextricably intertwined.

#### THE VEDIC UNDERSTANDING

In the Vedic tradition, this is no surprise. Such a union between consciousness and creation is the central Vedic assertion about the functioning of the world. The unbounded, transcendental field at the basis of nature, now glimpsed by modern physics as the unified field, is seen by Maharishi, in his Vedic Science, as itself *made* of consciousness.

This startling assertion — which underlies the mechanics of Super Radiance, of permanent peace — has been the basis of Maharishi's teaching for nearly fifty years. Maharishi comes from the tradition of teachers in northern India, a line founded ages ago by the illustrious sage Shankara. Perhaps the most respected intellect in India's history, Shankara expresses this view of creation's essence simply. "That reality pervades the universe," he said, "but no one penetrates it. It alone shines. Its nature is pure consciousness."

Commenting on this central understanding in 1963, when even the electro-weak unification was but a gleam in the eyes of physicists and completely unified field theories hardly a dream, Maharishi gave the definition of the absolute field already quoted, and added this point:

With the rapid pace of development in nuclear physics, the day does not seem far off when some theoretical physicist will succeed in establishing a unified field theory. The discovery of this one basis of material existence will mark the ultimate achievement in the history of the development of physical science. This will assist in turning the world of physical science toward the science of mental phenomena. And at the extreme limit of this investigation will be found the state of pure consciousness, that field of transcendental nature lying beyond all the relative existence.

By now, the discovery of the unified field has taken place in the most advanced theories of quantum mechanics — and in recent years Maharishi has brought this point up to date.

Now from the investigations of modern science we have the unified field, the home of all the laws of nature. And from Vedic Science we know this field to be a field of pure awareness, of infinite creativity. It is the field of intelligence pure, of consciousness pure.

In this understanding, the geometrical creativity exhibited by snowflakes, the mathematical intelligence structured into sea shells — all the orderly and precise manifestations of nature — have their source in one limitless reservoir of creativity and intelligence, a pure field of abstract consciousness. The surprise, as we will see, is how completely modern physicists agree with this view. The investigations of physics, apparently objective to exclusion, apparently a dry parsing of the mechanics of inert objects, have unintentionally unveiled a mind-matter symbiosis deep within the structure of nature.

Pondering these quantum discoveries in the first decades of the twentieth century, physicist Max Planck, who first discovered the quantized nature of the subatomic world and for whom the Planck scale is named, put a bold conclusion in stark logical terms: “I regard consciousness as primary. I regard matter as derivative of consciousness.” Eugene Wigner, a Nobel Laureate in physics, put one conclusion from this understanding in these words: “The next revolution in physics will occur when the properties of mind will be included in the equations of quantum physics.”

#### INTELLIGENCE IN NATURE

As mentioned at the start of this chapter, even superficial inspection of our world — a mere noting of snow flakes and seashells — gives us reason to believe that nature is infused with intelligence. Before the discovery of the unified field, Maharishi based his logic

on just such simple observations:

It's just at the level of common sense. It is obvious there is something deep within physical values which is the cause of change and progress. We see order in creation. There is some intelligence working at every level of existence, some orderliness at the atomic level, at the molecular level. And there is obvious orderliness in the sequence and progression of life. Everything is growing, and growing in an orderly way: an apple tree produces apples, a banana tree produces bananas; the apple tree doesn't grow guavas. Some order is there, some intelligence is there.

At the quantum level, this intelligence “deep within physical values” becomes insistently clear. To start a subatomic analysis of this idea at the most precise point, we must say that no subatomic particle ever *occupies* a precise point. The mathematical formalism of quantum mechanics (the wave function originally developed by Erwin Schrödinger) does not describe a small fleck of matter sitting at a particular point, or moving on an exact path, or trajectory. Rather, the wave function describes, for each point in space and time, a *probability* that the ‘particle’ will be at that point, if you looked for it. Thus, the ‘particle’ does not travel a particular and specific path, but exists only as waves of ever-changing probabilities. We have seen earlier that ‘particles’ are actually waves — now we see that they are waves of probability — nothing specific or definite, but rather just constantly changing odds for where the ‘particle’ might be.

Obviously, this is a radical reconceptualization of “physical reality.” A billiard ball, as it rolls across a table, actually *is* somewhere at all times. By contrast, a subatomic ‘particle’ in motion might be here and might be there — but it *is* nowhere at all.

And there is another step to the logic. A ‘particle’ is described by probabilities, and probabilities are intellectual constructs only. That is, these intellectual constructs, or patterns of intelligence, have no existence in the four-dimensional world of material objects. As an example, if a certain group of 100 hous-

es each has a 50% probability of a tree in the front yard, none of those houses has half a tree. In the physical world, each house has either a whole tree or none, and the 50% probability is only a mathematical structure, a mental reality. It is a pattern of intelligence you can hold in the mind, but not in your hands.

In the words of Henry Pierce Stapp, a physicist at the Lawrence Berkeley Laboratory and a main contributor to the S-matrix version of quantum mechanics, this probabilistic nature of subatomic ‘particles’ indicate that they are “idea-like rather than matter-like.” As Stapp goes on to say, “Just as in classical mechanics there is no natural place for consciousness, so in quantum mechanics there is no natural place for matter.”

Eddington, after a review of quantum mechanical realities, put the same point more compactly: “The stuff of the world is mind-stuff.”

#### KNOWINGNESS IN NATURE

In the basic mechanisms of quantum mechanics, furthermore, physicists have found specific examples of an inexplicable knowingness, or awareness, an instantaneous communication of, and reaction to, specific information. Somehow, certain aspects of subatomic reality act as if they know things they shouldn’t — as if they have immediate access to information, even at a great distance.

One of the most famous examples first surfaced in Albert Einstein’s famous challenge to quantum mechanics in 1935. Originally discussed by Einstein and two other physicists in a paper published in that year, the challenge is known as the Einstein-Podolsky-Rosen (EPR) paradox. Einstein was the first physicist to see that, if Schrödinger’s wave function accurately describes the subatomic reality, two ‘particles’ can communicate instantly — even over arbitrarily vast distances. In the situation Einstein suggested, two ‘particles’ are allowed to *entangle*, to interact closely, then to separate at high speed. No matter how far apart they get, the wave function indicates that when one of them is

measured and suddenly displays a particular quality, say, spin, the other instantly makes a complementary change, also displaying spin. Moreover, if the first ‘particle,’ when measured, displays spin up, the second is instantaneously spin down. Even if the two ‘particles’ have traveled intergalactic distances from each other, the wave function (the mathematical description) shows that this instantaneous correlation still occurs — one ‘particle’ seems to “know” what has happened to the other — a quantum expression of awareness, or knowingness, that can span, in principle, from one edge of the universe to another. Within months Schrödinger published a paper acknowledging this seeming impossibility, calling it the “entanglement relation,” and terming it “not *a* but *the* central quality of quantum mechanics.”

Einstein, however, called this phenomenon “spooky action-at-a-distance.” He simply did not believe it. From Einstein’s perspective, in fact, there was no magic in the paradox. The reason why the first ‘particle’ measured spin up and the second spin down, in his view, was that they were, respectively, spin up and spin down all along. In this understanding, spin up and spin down did not suddenly pop into existence from a fog of probabilities, but rather both ‘particles’ had the quality of spin from the beginning — and this spin parameter (also known as a *variable*) was simply hidden, unknown to the physicist running the experiment, until the ‘particles’ were measured. By extension, Einstein aimed to resurrect key aspects of nineteenth-century classical physics. In the view he suggested, quantum ‘particles’ are actually real particles, with real positions, motion, spin, etc., and quantum mechanics is forced to talk in terms of probabilities simply because it is ignorant (until a measurement takes place) of what these variables are. This view came to be known as the *hidden variable theory*.

It took fifty years, but eventually Einstein’s view was put to the test. An ingenious experiment was designed that could distinguish between Einstein’s “real particle,” hidden variable the-



ory, on the one hand, and the probability approach of conventional quantum mechanics, on the other. In some of the most famous physical findings of the late twentieth century, conventional quantum mechanics won the competition unambiguously. Einstein was wrong, hidden variables did not exist, ‘particles’ were not physically real.

There was now no doubt: In an EPR-style measurement of once-entangled ‘particles,’ neither ‘particle’ has the, say, spin quality until an experiment measures spin on one of them. Then they both have it — instantaneously, at any distance. Einstein thought this impossible, but the evidence proves it so. One ‘particle,’ even separated from the other by arbitrarily vast distance, “knows” what happens to the other, and acts upon that knowledge.

### THE UNIFIED FIELD OF CONSCIOUSNESS

We thus see that, at the quantum level of nature’s functioning, intelligence, or awareness, or consciousness, are deeply infused in the natural world. But if that is true, where does this intelligence originate? For an answer to this question, we must turn again to the theory of the superfield — the unified field of all the laws of nature. To this point in the chapter, we have been discussing subatomic ‘particles’ in themselves, rather than as fluctuations of underlying fields. But it is finally the field theoretic viewpoint which is most all-encompassing and illuminating. The single unified field, especially, which gives rise to all other fields, to all forces and ‘particles’ in nature, is the most basic conception in physics. If nature displays qualities of intelligence, or consciousness, at more superficial levels, then it is logical to assume that the unified field must itself be characterized by intelligence, or consciousness.

To identify qualities of consciousness in the unified field, moreover, no long chain of reasoning is necessary.

**1. Not material.** To begin with, we remember that the unified field has no material nature. It resides beyond the Planck scale, and the Planck scale is far smaller than any atom — the

basic unit of the apparently material world. Beyond the Planck scale, even time and distance have lost their meaning, and the unified field exists in an abstract, unmanifest realm transcendental to the entire physical universe.

**2. Inherent intelligence.** The unified field, though not physical or material, has internal order, internal structure or pattern, that can be defined through mathematical formalisms. The field algebra that describes the unified field is a set of formulas describing the structured orderliness, the intelligence, that inheres *with-in* the unified field. Patterns or structures such as atoms, snowflakes, or galaxies have internal orderliness that can be described by human intelligence with mathematical formulas. So does the unified field. If the unified field displayed no such internal intelligence — if it were instead random, disorderly, and chaotic, like tinker toys disassembled on the floor — it would not be possible to describe it with the formulas of the field algebra. But the unified field *is* characterized by inherent, mathematically describable intelligence — a level of intelligence sufficient to underlie all the forces and ‘particles’ that structure the intergalactic universe. John Hagelin makes the point in these terms:

All the laws of nature are intelligent, orderly principles which govern nature at every level. This doesn’t necessarily mean that a law of nature can think, but rather that it expresses intelligence in its functioning. Any law of nature can be written out mathematically. It can be tested repeatedly and found to be orderly, systematic, invariant. And this quality of orderliness and intelligence expressed by every law of nature is found in its most concentrated form in the unified field. By this I mean that at the level of the unified field, the laws of nature are the most compactified, the most concentrated, the most complete. And though they are simpler and more compact in their expression, they describe a greater wealth of diverse phenomena at the more superficial levels of nature.

In this sense, then, the unified field is the most concentrated field of intelligence in nature. It contains in seed form all the

orderliness, all the logical and mathematically describable relationships which appear eventually as all the more superficial laws of nature that govern the apparently physical world.

**3. Inherent creativity.** By similar logic, the unified field displays not just intelligence but infinite creativity. The unified field is more fundamental than all the other force and particle fields that structure creation, and through its own self-interactions it gives rise to those fields as fluctuations of its own nature. From within itself, it gives rise not just to this universe, but to a foam of infinite universes. In Hagelin's words, "The unified field is the fountainhead of natural law. From this unified source all the particles and forces of nature are generated through the process of dynamical symmetry breaking." This spectacular creativity is likewise embodied in the field algebra that describes the unified field and its self-interactions.

Thus, the unified field, which has no material nature, is characterized obviously by inherent intelligence and creativity. The most profound level of nature has the qualities not of matter but of mind.

#### FROM MODERN SCIENCE TO VEDIC SCIENCE

It is the mathematical and theoretical details of this fusion of matter and mind which are compelling to physicists. After a detailed review of the discoveries from quantum mechanics, for instance, E.C.G. Sudarshan said that if physics were to continue in the direction it now takes, "physical theory would become a theory of consciousness. We are approaching this situation as a limit: consciousness creates everything out of nothing."

The English physicist Sir James Jeans foresaw such a consciousness-based understanding of creation even in the first years of the quantum revolution:

The stream of knowledge is heading toward a non-mechanical reality. . . . [T]he old dualism of mind and matter . . . seems likely to disappear, not through matter becoming in any way more shadowy or insubstantial than heretofore, or through mind

becoming resolved into a function of the working of matter, but through substantial matter resolving itself into a creation and manifestation of mind.

This means that modern physics is converging on an ancient understanding. This combined understanding of matter and mind, now glimpsed by modern science but long understood in Vedic Science, is logically and esthetically satisfying, in the same way that the unification of the four forces of nature is logically and esthetically satisfying. It simply seems more sensible and more elegant if all the naturally appearing phenomena in nature — and consciousness is certainly such a phenomenon — can be accounted for in one simple and holistic understanding. It would violate the long procession of science toward a single, completely unified understanding of natural phenomena if the intelligence displayed by the human mind and the intelligence displayed in nature were found to be separate and noncongruent — like two incompatible computer systems. It is much more logical and parsimonious to conclude — as so many factors in this chapter indicate — that human intelligence and nature’s intelligence are two aspects of a single underlying unity, finding their common source in the unified field.

#### MECHANICS OF SUPER RADIANCE

This conclusion, furthermore, can help explain the mechanics of permanent peace — by helping to explain how the human mind can gain access to the most fundamental field in creation. As we have seen, the direct creation of peace through large assemblies of meditation experts makes no sense based on the outmoded understandings of nineteenth-century, classical physics. Especially in the notions of “billiard-ball physics,” the extreme of physical, materialist science wherein objects have to bounce off each other to interact, there is no way to explain how people can sit in one room, meditating with eyes closed, and affect criminals and soldiers even thousands of miles away.

But at the level of quantum mechanics, such long-range influences can be naturally understood. Because Super Radiance is avowedly a field-based technology, it is not limited to billiard-ball mechanics, but can take recourse to either of the two long-distance mechanisms that inhere in any quantum field:

**1. Field effects:** Long-range propagation of influences through wave-like perturbations of the underlying field (radio, etc.); and

**2. Infinite correlation:** Long-range correlations that are instantaneous and unmitigated by even astronomical distance (the EPR phenomenon).

If Super Radiance is inconsistent with outmoded nineteenth-century classical physics, in other words, it is completely consistent with modern quantum physics. Quantum fields support long-range influences and correlations as inherent aspects of their nature. If the surface-level appearance of the world, the world as it appears when we open our eyes each morning, encourages us to think in the old-style, classical way, quantum discoveries have freed us from such “common sense” boundaries. Despite contrary evidence from our senses, the Earth revolves around the Sun. Despite superficial, common sense notions, at the quantum level, invisible, long-range propagations and correlations are the norm.

#### DIRECT EXPERIENCE IN A FOURTH STATE OF CONSCIOUSNESS

In Maharishi’s understanding, moreover, it is meditation that makes the unified field a practical discovery. Physics may tell us that the unified field is a field of infinite intelligence and creativity. But a reservoir is useful only if a pipeline brings the water to your house. The unified field is useful only if a pipeline can be established for its direct experience.

To understand how the connection between human intelli-

gence and nature's intelligence is possible, it is necessary to study the field of consciousness itself — especially the concept of *states of consciousness*. While it is true that science has found no objective means to measure the inner *content* of consciousness (what thoughts or feelings a person might have, for instance), yet for years neurophysiologists have been able to precisely define overall *states* of consciousness. Every normal person experiences three major states of consciousness every day — sleeping, dreaming and waking. By using indirect measurements — by measuring brain waves, metabolic rate, and other physiological indicators — researchers have defined these three common states of consciousness.

This neurophysiological evidence now becomes crucial. According to the Vedic tradition, the human mind comes into union with the unified field during a highly specific *fourth* state of consciousness. That means that deep in meditation, when the mind contacts its own basis — and the basis of nature — the body should function in a new and unique way. Brain wave patterns and metabolic activity should be measurably different from the styles of functioning they display during sleeping, dreaming, and waking. For this reason, the Vedic description of a fourth state of consciousness, often repeated by Maharishi, can be taken as yet another prediction open to scientific investigation.

It is time to find whether this “prediction” is also objectively verifiable. It is time to find whether there is a pipeline to the field of infinite potential.

Is the fourth state of consciousness an objective reality?

# 5

## THE FOURTH STATE OF CONSCIOUSNESS:

### *Pipeline to the Infinite*

**F**or centuries into the past, the fourth state of consciousness has seemed as elusive as the unicorn — as much a myth, as much a merely storied essence of purity and innocence. Poems have extolled the beauties of this ineffable state, tales have identified this subtle reality as the key that unlocks the full potential of life, paintings and statues have shown wise men with crossed legs and closed eyes enjoying its fullness in blissful contentment.

Yet what is this fourth state really? In the modern scientific civilizations, this most basic state of consciousness has been so elusive as to essentially disappear altogether. In an objective world the fourth state of consciousness has had no objective status, and thus it has simply dropped out of sight. Until recently it was rarely spoken of, or even thought of, and life has been lived as well as it could be through the recurring cycle of the three common states — waking, sleeping, and dreaming. What the

Vedic tradition defines as the most crucial capability of human consciousness — the faculty of contacting the field of infinite potential at the basis of creation — has been unknown to most and closed to nearly all.

### PERSONAL EXPERIENCE

Because of the importance ascribed to this fourth state of consciousness in Maharishi's Vedic Science — because it is said to be the state that connects the individual mind with a field of unbounded possibility — the idea deserves systematic attention.

As with the other ancient descriptions discussed in this book, the Vedic description of the fourth state of consciousness has been recorded in simple, straightforward language. It is known in Sanskrit as *samadhi* (unwavering mind), or simply as *turiya* (the fourth). We can turn to the Upanishads for a definition that places it in the context of the common three states of consciousness, those experienced by every ordinary person every day:

The first is the waking state, the experience of the reality open to everyone;

The attention goes outward, enjoying the world in all its variety.

The second is dreaming, the experience of subjective, inner, imaginative worlds. . . .

The third is deep sleep, when the mind rests and all awareness [both inner and outer] is suspended.

The fourth is the pure Self alone. . . .

It is ineffable, beyond thought.

It is indefinable.

It is known only through becoming it.

It is the end of all activity, silent and unchanging.

These definitions suggests a central principle long emphasized by Maharishi: Knowledge is different in different states of consciousness. In the sleeping state of consciousness, for example, the mind is aware of no knowledge at all. The sleep state is a state of total dullness in which “all awareness is suspended,” and



knowledge of anything whatever, real or imagined, has disappeared altogether. In the dreaming state, on the other hand, there is knowledge available, but it is unreliable. Dreams are self-created, “subjective, inner, imaginative worlds,” without direct connection to the real world. The world of dreams evaporates with the morning light.

Only with the waking state do we find knowledge as commonly understood. It is true that the waking state of consciousness is limited in its scope. It yields direct perception of only the outer, surface level of nature — “the attention goes outward, enjoying the world in all its variety” — and the inner, more subtle workings of nature, everything from the molecular level to the unified field, is unavailable, sealed away from the mind’s direct perception as if the mind were still asleep. But the mind in the waking state is at least directly aware of nature’s surface, and it gains knowledge that is usually both coherent and useful. If, in a dream, the ground may suddenly dissolve into water or dissipate into air, in the waking state the earth is always solid beneath our feet. Knowledge in the waking state may be incomplete, but at least it’s practical for day-to-day existence.

Analyzing states of consciousness thus, in terms of the type of knowledge they yield, what could a fourth state of consciousness be? It must be different from lack of awareness (sleep), or awareness of imaginary visions (dream), or awareness of the surface level of nature (waking). Thought about this way, the fourth state of consciousness can first be understood as a self-referral state, a state of self-interaction — as human awareness circling back to become aware of itself — as awareness of awareness alone. In the Vedic understanding of the fourth state, consciousness is said to turn back upon itself and become aware only of its own inner nature — “the pure Self alone.”

This is *samadhi* (unwavering mind), an experience Maharishi calls *pure consciousness* or *transcendental consciousness* or the state of *pure knowledge*. Tracing the path the mind takes to this most

inward experience, Maharishi says,

Once we give the mind the correct angle it will settle down automatically to more refined, inner levels. As the mind experiences finer aspects of the thinking process, it experiences more refined levels of awareness. This makes the mind more and more awake. And when our awareness has gained maximum wakefulness, the next step of refinement allows the mind to transcend the field of thinking. We attain a field of pure awareness, of transcendental consciousness, in which the mind is awake within itself, but without a thought. This is the state of pure consciousness, a state of least excitation of consciousness, and in this self-referral state, consciousness is its own observer. It is the observer, the observed, and the process of observation — all three values in one — a quality of awareness we can call pure knowledge.

In this state, rather than no awareness at all, as in the sleep state, there is what Maharishi terms “maximum wakefulness.” Yet there are no thoughts in that awareness, neither the imaginary creations of dreaming nor the more common thoughts of the waking state. In a definition of this fourth state published in his translation and commentary on the Bhagavad-Gita in 1967, Maharishi says “there is no trace of sensory activity, no trace of mental activity,” and that the awareness in this state of *samadhi* is like “a lamp which does not flicker in a windless place.”

If we are watching a movie, the colorful images on the screen might begin to fade away, becoming lighter and lighter, until our vision transcends the particular images altogether and confronts only the pure white screen. The pure screen would be there without the activity of the movie. In a similar way, the mind can settle down deep within its own nature, experiencing finer and finer aspects of the thinking process, until finally it transcends particular thoughts altogether and is left only with pure consciousness — the background, or screen, upon which all thoughts and feelings play.

The major limitation to this analogy is that, in a movie, there

is duality — the audience is left to watch the white screen — while in the fourth state of consciousness, there is indivisible unity — consciousness is left aware of its *own* pure nature. It is, in Maharishi's phrase, a "self-referral mechanics." In the fourth state of consciousness, the observer and the observed are completely unified.

This self-referral nature of pure consciousness seems to Maharishi an important tie to the quantum mechanical level of creation, and especially to the unified field. As we have seen, the unified field is a completely self-sufficient, self-interacting reality. It is the self-interacting mechanics deep within the unmanifest unified field that give rise to all the laws of nature on the more superficial levels of creation.

For Maharishi, this self-referral nature of the unified field completes the logical connection between consciousness and creation. "The unified field is found by modern physics to be self-referral in its nature," he says, "and this identifies it as a field of consciousness. For only consciousness in its pure state can be fully self-referral."

This self-referral state of consciousness, moreover, is in itself a unified field of consciousness. As Maharishi pointed out above, in the fourth state of consciousness, consciousness itself is the observer and it is also the observed. In fact, as he has often explained, consciousness is the observer, the observed, and also the *process of observation* — all three in one unified wholeness. In the fourth state, therefore, consciousness is in a completely unified state. In this sense, both the fourth state of consciousness and the unified field of natural law are completely unified and self-referral — interacting only within themselves.

Speaking in 1983 at the Taste of Utopia assembly, Maharishi developed the relationship between the fourth state, pure consciousness, and the unified field of physics:

We know from the ancient Vedic literature that the world must rise to enjoy the full dignity of life. And if that is to be, it

can only be on the basis of the fourth state of consciousness, the experience of consciousness in its self-referral state, which is now coming up in scientific language as the unified field of all the laws of nature. The unified field is a lively field of all possibilities at the basis of creation. It is a transcendental reality. And because the unified field is completely self-referral, then knowledge of it can only be completely self-referral. It can only be gained by the mind within itself in its self-referral state, in pure consciousness, transcendental consciousness, where the awareness is open to itself alone. In this state, the mind identifies itself with the self-referral reality of the unified field. That level of consciousness alone is a suitable field for directly cognizing the unified field, for completely identifying with the self-referral nature of the unified field, in a state in which consciousness actually has no difference from the unified field.

#### THE STATE OF LEAST EXCITATION

Although the fourth state of consciousness is not a state most people ordinarily experience, it is said to be a completely natural state, and it is not uncommon for people to recognize in its description memories of one or two special moments in their lives. It is also not difficult to find, in the writings of artists and poets, descriptions of specific experiences which make new sense in this context. Wordsworth, for instance, has described such an experience:

that serene and blessed mood,  
 in which the affections gently lead us on —  
 and even the motion of our human blood  
 almost suspended, we are laid asleep  
 in body, and become a living soul;  
 while with an eye made quiet by the power  
 of harmony, and the deep power of joy,  
 we see into the life of things.

As we will see, this quotation provides some specific clues for scientific research. One of Wordsworth's successors Alfred, Lord

Tennyson describes a related experience in one of his letters:

out of the intensity of the consciousness of individuality, the individuality itself seemed to dissolve and fade away into boundless being; and this not a confused state, but the clearest of the clearest, the surest of the surest . . . utterly beyond words.

The German philosopher Georg W.F. Hegel, for whom meditation experience was the touchstone of philosophy, described a similar state of deep inner quiet in which a self-referral experience reveals the deepest being of life. He said,

The condition of ecstasy through which alone that which is true Being comes to be known, is [referred to as] a simplification of the soul, through which it is brought into a state of blissful repose, because its object is itself, simple and at rest.

These and countless other such passages from all cultures and throughout the ages have been largely ignored in recent times. They have been termed mystical, a word which has come to mean vague, imaginary, impractical, and unreal. And given the varied, unsystematic, and imprecisely poetic way in which these descriptions have usually been stated, such confusion is not hard to understand. To reclaim the fourth state of consciousness from this obscurity, it needs to be defined scientifically.

#### **FINDING THE SUBJECTS**

To take measurements of such a state, the state itself must first be available. This has been a major contribution of the TM and TM-Sidhi programs. When Maharishi first started his teaching in the late 1950s, even the concept of a fourth state of consciousness was absent from scientific circles. Science deals with empirical data, and the fourth state of consciousness was at that time not empirically verifiable — because essentially no one was experiencing it. Since that time, however, nearly six million people have taken up the practice of the basic Transcendental Meditation technique, over a million of those in the United States, and tens of thousands have learned the advanced TM-

Sidhi program. Twenty years ago experimenters seeking the fourth state of consciousness might have been forced to backpack equipment up a Himalayan peak, but now they can easily find a population of expert meditators in any American city.

The nature of the actual technology also lends itself to research. In the first place, both the Transcendental Meditation technique and the TM-Sidhi program are taught through highly systematic procedures which are followed precisely everywhere in the world that the techniques are taught. This means that experimenters can avail themselves of a subject population meditating according to uniform instructions, even to the finest details. Also, because these techniques are natural procedures for the human mind and physiology, and therefore extremely easy to practice — requiring no effort or concentration — a broad cross-section of the population can be included in the studies. There are no requirements, no necessary level of intelligence or educational attainment. Even children from the age of ten can easily learn the practice. A random sample of meditators in any city includes people of every age and from every socio-economic class, and thus scientific studies need not become biased due to a narrow range of subject types.

In the full book entitled *Permanent Peace*, the research evidence on the fourth state of consciousness is presented in detail, emphasizing the challenges the researchers faced while trying to capture such a subtle reality through objective equipment. In this much briefer manifesto, we will simply mention some of the more important studies.

#### STUDIES RELATING TO REST AND RELAXATION

The first study published on the Transcendental Meditation technique, done by physiologist R. Keith Wallace at UCLA and published first in *Science* magazine in 1970, and then in variant forms in 1970 and 1972 in the *American Journal of Physiology* and in *Scientific American*, showed both an extremely deep state of rest for the body as well as alterations in the usual

brain wave activity. Wallace used these and other indications to define what he tentatively labeled “a fourth major state of consciousness,” and a “wakeful hypometabolic state.”

John Farrow, a Ph.D. in neurobiology from Cornell University who held a research position with the University of California for nearly a decade, pioneered the use of extremely sophisticated equipment for measuring breath rate and oxygen consumption in meditation studies, demonstrating that the deep rest experienced during the fourth state of consciousness was even deeper than Wallace’s study suggested. At the deepest points, people practicing the TM technique would not breathe at all for 30-60 seconds — periods that coincided with deep inner experience of perfect mental quiet and alertness.

Fine-grain studies by researchers at the University of California (Irvine) showed that during the Transcendental Meditation technique subjects showed a marked reduction of cortisol (the key hormone produced during stress), while red blood cells, which ordinarily never reduce their metabolism, begin to rest deeply.

French physiologist Dr. Jean-Paul Banquet, who performed his research both at the Harvard Medical School and at the French National Institute for Medical Research, found a new pattern of EEG in the brain, a pattern indicating deep mental relaxation. If people are relaxed because they are drowsy, an audible clicking noise will wake them up and change the EEG pattern for several minutes. With people practicing the TM technique, however, the clicking sound registered briefly in the EEG, which then returned to the relaxation pattern. The fourth state of consciousness appeared to combine relaxation with wakefulness — a state unaffected by outside interruption. This finding is consistent with both the ancient description of the fourth state as samadhi, unwavering mind, and with the reports of TM meditators who report that noise does not interfere with their meditations.

### STUDIES RELATING TO INCREASED ALERTNESS

Research at the University of California (Irvine) have shown that, during the practice of TM, there is a marked redistribution of blood flow in the body — a sharp decrease of blood flow to the bodily organs and a matching increase in blood flow to the brain. The increase of blood in the brain is, conservatively estimated, twenty percent more than usual, a particularly impressive finding since blood flow to the brain almost never increases to any significant degree.

With experienced meditators, a naturally occurring hormone named arginine vasopressin (AVP) has been shown to increase a remarkable 500% during the regular period in which people meditate each day. Studies have associated AVP with, on the one hand, regulation of blood pressure and, on the other, direct improvements in learning ability and memory. This latter effect, the increase of mental clarity, has been so well established that AVP is now used as a prescription medicine to decrease the effects of senility.

Another study by Dr. Banquet utilized a Fourier transform to analyze the EEG into its component patterns. He found that during the TM technique, experienced meditators produced a wholly unprecedented pattern — long rhythmic trains of *theta* waves (which usually appear only temporarily on the way to sleep). Moreover, trains of theta were sometimes accompanied by trains of *beta* (usually produced only when the mind is wide awake and engaged in outside activity). After this deepest state of theta (rest) and beta (wakefulness), subjects would ordinarily report their deepest experience of transcendence (the purest experience of the fourth state).

Eight published studies have shown that, during the fourth state of consciousness, brain wave patterns become more coherent — separate parts of the brain begin to fire coherently (in step with each other). When subjects start to fall asleep, EEG coherence falls and then disappears, while as subjects go more deeply



into meditation, EEG coherence rises to a peak — coherence in brain functioning seems to be a measure of increasing alertness. It is also interesting that the fourth state of consciousness which, theoretically, radiates coherence into the surrounding society, is itself characterized by a high level of coherence internally.

#### THE PURE SELF ALONE

Physiological evidence has thus provided objective indicators of the fourth state of consciousness. Moreover, this physiological definition of the fourth state parallels remarkably the mental experience of the state as it has been long described. The central indicators:

**1. A state of least excitation.** During the fourth state of consciousness, the body rests more deeply than in sleep, a quality of rest that produces a previously unknown style of metabolic functioning. At the same time, the brain becomes less random and disorderly, with rhythmic, unchanging patterns.

**2. A state of heightened wakefulness.** During the fourth state of consciousness, increased wakefulness is indicated by the increase in brain wave coherence, the increase in coefficient of wakefulness in brain wave patterns, the increase in blood flow to the brain, and the increase in the hormone AVP.

**3. Unwavering mind.** Rather than the different parts of the brain functioning in different ways, each part itself constantly changing, there is a marked increase in coherence between different parts of the brain. It is also significant to find continuing trains of brain wave patterns, with the disappearance of the rapidly changing patterns that usually accompany rapidly changing thoughts.

**4. Self-referral and self-sufficient.** The metabolic activity of the body becomes more self-sufficient, requiring less oxygen from the outside, while the mind becomes more awake than normal without requiring any outside stimulation to maintain this

wakefulness.

For Maharishi, these physiological discoveries have been important examples of the interplay between the understandings of ancient Vedic Science and the investigations of modern science. He says,

This is why we are fortunate to live in an age of science. The fourth state of consciousness is now no more a fantasy or only a metaphysical reality. Now we have it on the objective basis of modern science. The Transcendental Meditation technique produces its own style of physiology — brain wave patterns are different, the metabolic rate is different — and due to that particular style of activity in the body, the mind experiences a state of least excitation, the fourth state of consciousness. The teachings of Vedic Science have now been verified in the research laboratories of modern science.

#### VEDIC PREDICTIONS AND SCIENTIFIC VALIDATION

The plan of this book has been to take Maharishi’s articulation of central tenets of the Vedic tradition and compare them against the relevant science. As we have seen in the last four chapters, the Vedic “predictions” have fared well under such rigorous examination.

1. **Super Radiance.** Repeatedly published scientific evidence has validated the prediction of society-wide changes created by Super Radiance assemblies.
2. **Unified field.** Physics has glimpsed one unified field of all the laws of nature.
3. **Mind and matter.** Leading physicists have realized that a profound connection exists between consciousness and the apparently physical world — and especially between the unified field of consciousness and the unified field in physics.

**4. Fourth state.** Physiologists have defined a fourth state of consciousness, the putative pipeline to the unified field, with physiological fingerprints consistent with the ancient descriptions, and profound benefits for individual life.

The most vital contribution of this knowledge for a world still in turmoil is, of course, Super Radiance. Based on the evidence already presented, it is time now to discuss the far-reaching implications of this discovery. It is time to consider the possibility of a world transformed by the power of a technology of peace, a world free from warfare and terrorism, a world free from poverty and ignorance, a world enjoying a permanent state of peace and progress.

Perhaps, in light of the profound and detailed support that Maharishi's explanations have received, the reader will agree: No one can discuss such implications of Super Radiance — and the Vedic understanding of life — more authoritatively than Maharishi himself.

# 6

## A PERMANENT STATE OF WORLD PEACE:

*Maharishi in His Own Words*

**H**is Holiness Maharishi Mahesh Yogi has been teaching around the world since the 1950s. He came out from India, one man traveling alone, carrying with him only knowledge. His traveling expenses were paid by students he left behind. He made contacts in each new city by sitting in the airport until someone offered to help. His accommodations were provided by people he met at his lectures. His goal was simple, but compelling: “To end suffering in the world in this generation.”

Since those earliest days of his work, millions of people have begun the practice of the Transcendental Meditation technique and tens of thousands the advanced TM-Sidhi program. Hundreds of scientific studies have validated his central assertions. Now the evolution of consciousness enjoyed by many individuals has made possible a mechanism for the rapid transformation of the world as a whole — through the use of large Super Radiance assemblies, the technology of peace.

What this means is that Vedic knowledge is once again available to the world, and available this time in a form that is sys-

tematic, scientifically verifiable, and easily usable. Because quantum discoveries have plumbed the depths of the natural world, and because Maharishi has adopted orderly and scientific procedures and vocabulary, the subtlest and most profound understandings of human life and cosmic creation can now be clearly understood and systematically acted upon. Ancient secrets have become practical realities. After his years of one-pointed dedication, Maharishi speaks now in terms of great fulfillment.

“This is a very, very beautiful time for the world,” he says. “Now we have the knowledge of that collective performance which creates such a beautiful atmosphere everywhere on earth. New trends, new tendencies of life come up, the whole world consciousness gets purified, when large groups practice TM and the TM-Sidhi program together in one spot. A new sunshine is being created for human existence.”

*Physics has glimpsed the unified field and physiology the fourth state of consciousness. But these can seem abstract and difficult to understand for some people. For this reason, Maharishi often discusses Super Radiance with a simple analogy.*

**Maharishi:** “How does Super Radiance come about? This ‘how’ is answered in the performance of a gardener. The gardener waters the root of the tree. Quietly this enlivens the sap, which is the colorless basis of all the brown of the trunk, the green of the leaves, the yellow of the petals. All the leaves and branches and trunk of the tree are just the expression of that colorless sap, and when this sap becomes enlivened deep within, then the whole tree becomes healthier and fresher. It begins to radiate happiness. Radiance outside depends on something that goes on inside. Just like that, when a large number of experts in TM and the TM-Sidhi program function from that self-referential level at the basis of natural law — from that source of all the laws of nature — then this enlivens all the laws of nature. Such a group enlivens natural law by functioning at that level which

is the fountainhead of natural law. Then, even without making any effort, this gives nourishment to the whole civilization, to all the tendencies in the world. The performance is inner, the performance is completely self-referral. But the effect is global, it is universal.”

*This view of life's possibilities seems most directly challenged by worldwide terrorism, and by the rapidly escalating destruction caused by the retaliatory “war on terrorism.” To Maharishi, however, terrorism and the brutal counterattacks against terrorism not only highlight the need for a new approach to defense, but provide an urgent context in which such a new approach will in fact be tried. His logic begins with a dissection of traditional means of defense.*

**Maharishi:** “The old strategy of defense was based on violence. It was based on the willingness to die for one’s country. But this is an outmoded concept in today’s world. With the weapons available today, if any nation creates an enemy, no amount of dying can save the country. Powerful nations can destroy any other nation, but even they are powerless to defend their own people. Times have changed and old patterns of defense must change. All the mechanical and technical means of destruction, they are capable of destroying, but they have no value of saving. This is why the only possibility for any nation today is to make use of that knowledge which will stop the very birth of an enemy. It is just a matter of using a scientific discovery in favor of man’s life here on earth.”

*This is certainly a new approach, but all the old approaches have manifestly failed to stop terrorism and war. When speaking of terrorism, which is a crime against humanity, Maharishi often speaks about crime in general, and the futility of punishing criminals as a way to put an end to crime.*

**Maharishi:** “Crime has been there in every generation. Governments, who are responsible to keep order in their whole territory, have always implemented punishments. ‘If you do this

wrong, this is the punishment.' They have put the criminals to jail, they have put them to be destroyed. But what we see is that punishment continues generation after generation and crime continues generation after generation. Wrongdoers have been destroyed, but new criminals keep bubbling up in every age. This is why I am very happy to be able to say that we have come to a solution of this long-standing, continuously existing tradition of crime and criminals. To cut the story short, we do this by educating the people to always think and act in the evolutionary direction of Natural Law. We know the universe is an ever-expanding universe. The infinite diversity of creation is being administered in a very systematic manner without any problem, age after age. So we want to take recourse to this higher intelligence of Natural Law which, in this scientific age, has been realized as the most fundamental level of everyone's awareness. This seat of all creativity and all evolutionary processes is within the consciousness of everyone. That is why it is absolutely simple and easy that everyone could be educated to have access to his own evolutionary direction."<sup>2</sup>

*In Maharishi's understanding, this emphasis on education rather than punishment and destruction has a more than practical significance. It is not just a question of what will work better, in Maharishi's view, but also what is ethically and morally right.*

**Maharishi:** "If you take care of education then you will not be required to commit a global sin. When you destroy a country, then you are killing, and killing is a sin. Whether you are a Christian or a Hindu or a Moslem, killing is sin. This killing of so many people out of revenge, this destruction of whole countries, this whole thing is very wild and mad and unwanted in the world. And it is not necessary. You kill so many people, but you will not be able to stop the continuity of these terrorists, these mischief mongers. You cannot. So why commit a sin, a national sin, where the whole nation will go to perdition? Our program

is to prevent terrorism. We are all for destroying terrorism. But destroy so it cannot come up again. Our advocacy is to finish it once for all and let not forthcoming generations be victims to terrorism again and again.”<sup>3</sup>

*One purpose of the Vedic knowledge is to develop the individual to the state of enlightenment. Maharishi describes Unity Consciousness as the highest state of human development, a state of full enlightenment, in which, among other realities, the individual intelligence is fully united with nature’s intelligence. Maharishi describes this highest state of consciousness and its benefits in quotations from his book Maharishi Vedic University: Introduction.*

**Maharishi:** “When individual awareness is established in the Home of all the Laws of Nature — the Unified Field of all the Laws of Nature in Transcendental Consciousness — thinking is free from weakness, and action is free from mistakes. In this state of enlightenment the individual meets with no resistance in achieving his goals; problems and failures are foreign to his life — he can know anything, do anything, and accomplish anything.”<sup>6</sup>

“The consciousness of the student, flowing in Nature’s perfect theme of evolution, naturally evolves into the spontaneous ability to function from the level of Cosmic Intelligence. He spontaneously handles every individual aspect of his daily life on the ground of the fully awake Cosmic Intelligence in his awareness.”<sup>7</sup>

“The individual life gains access to Cosmic Intelligence — the evolutionary power of Nature — and evolves to the supreme level of awakening of Cosmic Life in [the Vedic quotation] *Aham Brahmasmi* — ‘I am totality.’”<sup>8</sup>

*Maharishi suggests that this is possible because the underlying unified field connects all the more superficial aspects of nature.*

**Maharishi:** “When we enliven the unified field in one place, we enliven it everywhere. It is that field of infinite correlation, where everything is connected with everything else. Everywhere the laws of nature become more lively and naturally



everyone begins to live more in tune with natural law. This is how we can nourish the minds and hearts of all people around the world. This is how we have placed ourselves in a position to think about the welfare of the whole world. We have that technology whereby we can enliven natural law within the hearts and minds of even those people on the far side of the globe. We can remove the thorny edge from their performance. We can remove the negativity from their performance. We will do it for our own benefit, for our own growth to higher states of consciousness, but we will bring human life everywhere in tune with all the laws of nature. And this is how we know we can restructure our society, how we can administer our society on that universal basis, how we can rebuild our nation on the basis of all possibilities, how all governments can function with that high efficiency with which the unified field governs the universe.”

*The results of such systematic Super Radiance programs, in Maharishi's description, will be almost unimaginably positive.*

**Maharishi:** “It is very easy for anyone with even the slightest intelligence to understand that if the unified field could be accessible to anyone, nothing would be impossible for him. All man could ever want will be there with this support from all the laws of nature. There will be no negativity, no suffering. Life will not have to be a struggle any more. Those days should be forgotten. Children will read in the history books that there was a time when the hospitals were filled, when the jails were filled, when doctors were always worried and lawyers were up late at night unable to rest. They will read this, but it will all be a tale of the past. Now every government can make use of this formula. Here is the secret of successful society. We are very proud to say today that the world is going to be a better world, and a better world is going to be the best world. We can't have any expression greater than to say that heaven will be lived on earth.”

*And for this, Maharishi emphasizes, a single group of 40,000 is*

*absolutely vital.*

**Maharishi:** “It is on the unseen level, the transcendental level, the level of self-referral consciousness. From there we can mold life in the world as we want it. And for that our effort is to have 40,000 in one place — a very strong center to create coherence and a unified, harmonious value for the whole world consciousness from one centralized place. One and one half hours in the morning and in the evening they will go for their meditation and Yogic Flying, and during the day they will do their Vedic performances, yagya performances. This will be their profession. We can’t put them to any other work to earn their financial support. Their daily performance is a very delicate performance. One has to be well rested in order to perform from that rested state of Transcendental Consciousness which is a lively field of Natural Law. It is from there that the practice is done, practice of meditation and yagya. So in order to be effective, one’s life has to be given over to that ultimate level of total Natural Law, the Unified Field — one’s own Transcendental Consciousness. It’s from there that the Laws of Nature govern the universe without problems. And with this program, it will be a happy, affluent world without negativity, without problems. When light is shining in a room, darkness doesn’t come. Intense darkness doesn’t come, faint darkness doesn’t come, any kind of darkness is absent in the presence of light. When these 40,000 people will generate coherence in world consciousness, then coherent world consciousness will not allow any negative thing to sprout.”<sup>10</sup>

*Any government anywhere could easily support such a group. But Maharishi also addresses his proposal to responsible citizens everywhere — and especially in America, which has been the subject of the most drastic terrorist attacks, and which has responded with the most destructive retaliation.*

**Maharishi:** “My message is for everyone, and if people are leaders in the society, more for them. For anyone who has life

and who likes to be a champion of peace and happiness for others — and if not for others, for himself. And especially we should tell the wealthy of America, all the competent, peace-loving people of America, that all the physical sciences have discovered the Unified Field and the Unified Field has also been verified in the Vedic Literature."<sup>11</sup>

*Maharishi has often said that world peace is now only a matter of money. With sufficient funding for the 40,000 group, the Maharishi Effect can be created everywhere in the world — and maintained permanently. The world is racked by terrorism and war, but Maharishi is confident that the timeless Vedic wisdom, now verified by modern science, can transform the destiny of the world. And for this, as for every achievement in his life, he gives both credit and gratitude to his own teacher, His Divinity Brahmananda Saraswati, whom Maharishi calls Guru Dev (enlightened teacher).*

**Maharishi:** “Now we have that simple formula to change the trends of time. It is such a fulfilling time. I remember the first days of teaching nearly fifty years ago in India. From the Vedic literature and at the feet of my master, Guru Dev, I had learned that life is bliss, that life is infinity, immortality. But when I looked to the world, I found it completely opposite. And I saw that something was lacking between the field of action and the field of knowledge.

“I started to teach and I had that confidence that this is such a simple, natural, effortless technology whereby everyone could fathom one’s own inner genius — that infinite creativity, that pure intelligence — and with this I thought it should be possible to eliminate negativity and suffering from the world. That was the aspiration. And now this ancient Vedic knowledge has been verified by modern science. Now we know that every man, born as a man, has it as a natural birthright to enjoy the support of all the laws of nature. And now we know that Super Radiance groups are completely sufficient to influence the far ends of the

earth. It is a very, very great joy. That goal which I kept before me all these years, that life should not be a struggle, is now achievable for all mankind. For this we can only say, All glory to Guru Dev. Jai Guru Dev.”

# ACTION STEPS:

## *What You Can Do Now To Create Permanent World Peace*

**B**y now, most readers will have made up their minds about the reality and effectiveness of Super Radiance. Those who simply can't believe it have stopped reading. Those who feel confident it works can skip to "Spread the Word" on the next page. For those who now feel that this technology of peace *might* work, two points:

**1. Proven failure.** Certainly, there is no other approach to permanent peace that works. As we've seen, the whole history of the world amounts to an experiment proving the failure of both weapons and peace talks as means to create lasting peace.

**2. Proven success.** Super Radiance is supported by the evidence of nineteen academically published studies — evidence that strongly indicates it *does* work. Not only do these studies show that it calms down violence, but also that it stimulates innovation and economic progress.

Given these facts, we can conclude at least this: We have compelling reason to give Super Radiance a try. Most significantly, we have compelling reason to support the creation of a

single Super Radiance group of 40,000. The upside is, conservatively speaking, spectacular — a vision of the entire world enjoying a lasting era of harmony and progress. The downside is nonexistent. Even the most hardened skeptic can see that, if this new approach somehow failed now, for the first time, the world would be in no more dismal and dangerous a situation than it is today. The risk/benefit analysis yields 100% scientifically demonstrated benefit, and 0% risk.

Ideally, for all these reasons, governments everywhere will implement Super Radiance rapidly. Certainly, since September 11, 2001, governmental officials have been much more open to in-depth discussion about the possibility.

But if governments won't move quickly enough — and the history of bold governmental innovation is undeniably discouraging — then peace-loving people everywhere can take the future of the world into their own hands.

For those readers now disposed to such action, here are three suggested steps that can bring results immediately.

### 1. SPREAD THE WORD

The first requirement is to get the facts about Super Radiance to as many people as possible. Here are three ways to spread this knowledge quickly.

**1. Send the Website:** Go to *createpermanentpeace.com*, which includes a brief essay recounting the theory and evidence discussed in this book. A button on this site allows you to e-mail a live link to the site, with a few lines of e-mail message enclosed. Instantly, you can let your whole list choose to learn, with a single click, how permanent peace can be attained.

**2. Read and share the free mini-book:** On that same Website, another link allows you (and everyone on your list) to download a mini-book, also entitled *Permanent Peace* — absolutely free. Although it can't be as convincing in detail as the book in its entirety, it downloads, e-mails, and reads much more

quickly. For particular people you think will have interest, e-mail the entire mini-book, or its first few pages, or print it out and pass it around as freely as you like.

**3. Purchase/donate:** A third link on *createpermanentpeace.com* allows you to purchase the soft-cover edition of *Permanent Peace* that you now hold in your hand — at \$19.95 per copy — with 80% of the purchase price donated to the Endowment Fund for Permanent World Peace. For those who can, you are encouraged to buy as many books as possible and give them away to family, friends, local and national business, academic and opinion leaders, wealthy philanthropists and foundations, and governmental and political leaders in your city and state, and in Washington, D.C. The goal is clear: The more widely and quickly this idea becomes known, the faster it will be adopted. To take advantage of this donation feature, please order the book on the Website (*createpermanentpeace.com*). or by phone at 866-85PEACE.

## 2. SUPPORT THE WORLD PEACE FUND

The most immediately effective step any person can take (and the most powerful step in the long run) is to donate to the Endowment Fund for Permanent World Peace. To support the super-group of 40,000 in India (see page 18).

As this book goes to press, \$100 million has already been raised. There are several ways to raise the money still needed.

**1. The entire fund from a single donor, or donation group:** Assume the \$100 million raised so far goes to set up the infrastructure for the full 40,000 Super Radiance group. To raise the one billion dollar fund which would support the group permanently, there are a significant number of people in the world who could donate that amount by themselves. Many more people could do the same by organizing a small group of friends and colleagues.

Although this would be a magnificent act of philanthropy, it

would also be in the donors' self-interest. The wealthy are often the targets of direct terrorist attack, and they would also stand to lose the most from their investments if the world economy were to be severely shaken by consistent, well-thought-out terrorist attack.

Anyone who has attained the financial resources to make such a far-reaching donation is invited to contact the Institute of Science, Technology and Public Policy at 641-472-1200.

**2. One million dollars per investor:** While larger donations are being sought, every individual and family that can donate one million dollars is being invited to do so. The \$100 million raised to date has been done in this way — a minimum of one million dollars per individual or family. Tens of thousands of such people live in the United States alone and only 1,000 are needed to gather one billion dollars.

**3. A grass roots program supported by peace-loving people everywhere:** One systematic approach would be for families each to “adopt” a single Vedic peace-creator (or Vedic *pandit*) in India. By donating \$125 per month (\$1500 per year) these families could each support a single Vedic pandit. If the first families to do so would also spread the word enthusiastically in person and especially through e-mails, the necessary total of families — over and above those who donate in other ways — could be gathered quickly.

### 3. MAKE YOURSELF A PEACE CREATOR

The most significant personal step you can take is to learn to enjoy the fourth state of consciousness on a regular basis — by learning the Transcendental Meditation technique.

The Transcendental Meditation technique is simple to learn and easy to practice, but it must be learned in person from a trained teacher — because each student's experience is different, and the teacher must be there to give the correct guidance. To find a teacher or teaching center in your area, you have two choices:



**Telephone:** In the United States and Canada, you can call 888-LEARN™ (532-7686). You will be automatically connected to a number near you.

**Internet:** From anywhere in the world, you can access a Website URL with worldwide connectivity: *Maharishi.org/locations/locations.html*. From this Web page, people in the United States and Canada can enter their area code, and be shown a phone number near them. People from other countries can click on a link, “For other locations worldwide,” and fill out a brief form. Someone will then contact you.

#### A FINAL WORD

The world will always need more people expert in meditation. But at this historical moment, the shortcut to global peace is provided by Super Radiance. And this means the highest priority is to fund the largest possible Super Radiance group. World peace *does* now seem just a matter of money — and not much money, at that, given the resources available in the world. To fully invest the Endowment Fund for Permanent World Peace with one billion dollars requires considerably less than, for example, the United States Department of Defense spends in a single day.

The consequences of not creating this group of 40,000 — in a world of rogue nuclear warheads and designer infections — are too horrible to contemplate.

Rather than fretting and worrying over such horrific possibilities, however, it seems obvious that the time has come to act.

The time has come to choose the only alternative research has presented to us.

The time has come to support Super Radiance — on a scale that can eliminate warfare and terrorism, and directly create an indomitable influence of harmony and peace — both globally and permanently.