

# INTRODUCTION

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## **MAHARISHI MAHESH YOGI AND THE TRANSCENDENTAL MEDITATION PROGRAM: A NEW DIRECTION FOR SCIENTIFIC RESEARCH**

**S**cientific discovery is the common theme of this age, and yet the most momentous discoveries have sometimes come from the most unexpected directions. This has especially been the case whenever a new area of human experience has suddenly been taken into the realm of science. The more than one hundred papers in this volume represent the first expression of just such an event—a remarkable and historic scientific discovery of a previously unsuspected mental mechanism—a discovery whose significance seems to be no less than to signal the opening of the last great frontier of modern science, the systematic exploration of the full range and potential of the human mind.

Such a statement raises an immediate question: How, one might ask, can the mind, whose basis, the nervous system, is the oldest and most familiar of all our human tools, and whose contents we share so freely, possibly still hide within it any truly new potentialities? Simply speaking, it cannot; the “unexpected source” of the present research is in fact a tradition of knowledge that almost certainly is the most ancient in human culture. The newness of the theory and practice of this knowledge really lies only in its new availability—that and its reappearance in a form suitable for an age given to systematic, objective investigation.

The discovery is of the effects of the Transcendental Meditation technique, whose introduction in 1958 was the work of an Indian scholar and teacher, Maharishi Mahesh Yogi. In fact, Maharishi himself claims not to have invented the technique at all, but rather to have revived it.<sup>1</sup> It is clear, however, that he reinvented it; that is to say, he rediscovered and thereby restored the original purity and effectiveness of a layer of human knowledge that, although praised and sung in the very oldest records of human experience, seems somehow to have been lost from view through confusion and disuse, even in the land of its origin. Equally important, Maharishi has succeeded in less than fifteen years in raising the Transcendental Meditation technique from the esoteric possession of a small and elite circle to a level of almost universal popular acceptance, where today it is on the verge of becoming a standard part of worldwide public education. Thus, a new and most significant direction of discovery, one whose ultimate consequences can hardly be appreciated today, has been opened to science.

1. The author is indebted to Maharishi Mahesh Yogi for many helpful conversations on the nature and origin of the Transcendental Meditation technique.

The scientific reader of these papers may be interested in a few words on the origin of the Transcendental Meditation technique in its modern form, for it is in itself an exciting story of exploration and discovery.

### **The Origin of the Transcendental Meditation Technique**

The theme that man is capable of “higher” states of consciousness, defined in terms of an experience of wholeness and expansion together with a deeper inner contact with nature, and the assertion that procedures and practices exist to develop such states are common in the lore of almost every human culture, East or West, old enough to possess a philosophical tradition. In particular, such knowledge has been associated with India; the word *meditation* has long been a familiar if vague symbol of inner development, involving in some usually ill-defined fashion a technique for penetrating to deeper levels of the mind for the sake of the “expansion of consciousness.” Before 1958, however, it would be fair to say that the popular associations evoked by the word *meditation* in the minds of educated Indians and Westerners alike were discouraging ones, to say the least. They might have been summarized as follows:

1. Meditation was thought to involve some attempt to concentrate or control the mind. It was considered to be very difficult; hardly anyone was supposed to succeed at it, even after many years of practice.
2. Meditation was supposed to be appropriate only for a few select individuals of specialized lifestyle, especially for the reclusive, the religious, the passive mystic withdrawn from society.
3. The purpose of meditation was considered to be an exclusively spiritual or religious one; its aim was associated with a state called “enlightenment,” a condition probably thought of by the average educated man as an exotic one verging on self-hallucination and certainly having no relevance to the values of daily life or social progress.
4. Meditation was not considered a very powerful or effective influence; hardly anyone in the world, including the yogis of India, knew of an actual contemporary instance of real and demonstrable progress having been made by means of it.
5. The very idea of the “expansion of consciousness” was considered wholly a metaphysical one, completely outside the realm of precise definition or scientific research.

Against this background, Maharishi’s special contribution has been to supply a new reality and an unprecedented precision for the concept of meditation. The effect of his achievement, to which this volume of papers bears ample testimony, has been essentially to cause the reversal of each of these understandings, both in the scientific literature and in the mind of the educated public. Specifically, he has demonstrated that:

1. The Transcendental Meditation technique is easy to learn and to practice; in fact, effortlessness is the very key to its effectiveness. Persons of every educational background can learn it successfully in a few hours of instruction and experience good effects, in most cases immediately.
2. The Transcendental Meditation technique is for everyone; it is an internal technology based on a highly valuable intrinsic tendency of the human nervous system that every man and woman possesses and therefore deserves to know how to use, regardless of his or her particular background, education, or way of life.
3. Learning the Transcendental Meditation technique does not require the acceptance of any particular philosophical system, nor does it interfere with any religious belief. The direction of development that results from the Transcendental Meditation program is not a strange or unworldly one; it is towards full development of those normal faculties of body, mind, and emotions that we already value in everyday life. What can be achieved by means of the TM program is the extension of the range of these normal faculties to their maximum possible value, a level of development rarely experienced by most individuals.
4. The Transcendental Meditation program is safe and effective, can be systematically and uniformly taught, and is quick to give results; moreover, all of these features can be demonstrated objectively.
5. Finally, and perhaps most importantly, through the Transcendental Meditation program the area of consciousness and its development has come to be recognized as a legitimate subject for serious scientific study.

Such a reversal is in one sense a familiar one in this century; it is just the story of one more aspect of human life undergoing a technological revolution. But in this case the technology involved is the practical fruit not of a modern laboratory, but rather of an ancient research program whose original purpose was the culturing of the human nervous system for the sake of developing all the possibilities inherent in its nature, using no external means, but only the natural capabilities of the unaided body and mind. This research and development program was completed thousands of years ago and the practical results distilled into a few simple procedures, which in turn were handed down as formulae or codified instructions. But because the human nervous system is an exceedingly delicate instrument, with many possible internal states and modes of operation, verbal instructions alone are insufficient to preserve the more subtle aspects of the knowledge of its functioning; one must have at hand a living teacher able to correctly interpret the instructions on the basis of his own experience. To put it another way, correct interpretation of even the most complete instruction manual depends in practice upon having available a perfect working example of the machine in question. Otherwise, the set of instructions representing a technology may continue to be handed down, but its real content can be lost, causing it to degenerate into a mere superstition.

In this case, in the absence of men of highly developed sensitivity of consciousness, able to correctly interpret ancient instructions regarding delicate and subtle practices of adjusting the mind, the procedures in their essence can quickly become subject to gross misunderstanding and hence to distortion, which quickly leads to the loss of their effectiveness. In practical terms, they are lost.

It is Maharishi's feeling that exactly this has been the fate of the original technology of meditation, and that this has happened not once, but perhaps several times in the course of history, leaving behind written or oral traditions that may have preserved formulae with reasonable accuracy, but could no longer give the reality of personal experience. Such a situation can be rectified and the original instructions correctly deciphered only if one happens not only to possess the formulae, but also to come upon a perfect working example of the instrument in question. It was Maharishi's good fortune and ours that he came upon such an example of an ideally functioning man.

Maharishi's background in India is a most pure and classical one. In the West, research scientists have a habit of referring to a young Ph.D. in terms of his "master"—"so-and-so, who was a graduate student of so-and-so." The same custom has held true from time immemorial in the tradition of Indian philosophy, especially since success in terms of that tradition has always been measured not by a man's intellectual attainment alone, but by the quality of his own inner life. Maharishi was the closest student of a great and famous teacher, a contemporary saint. He had the fortune as an educated young man to be accepted as a student of Swami Brahmananda Saraswati, who, although little known in the West, was widely recognized as the greatest of the purely spiritual preceptors of modern north India and was revered for many years by the community of Indian philosophers as a rare and perfect example of that peak of inner development whose ideals are extolled in the *Vedas* and *Upanishads* of ancient India.

Swami Brahmananda Saraswati (whom Maharishi refers to affectionately as "Guru Dev") was at that time (1941–1953) the Shankaracharya of Jyotir Math in the Himalayas, a seat of spiritual leadership in northern India that traces its descent directly from Shankara, the great Indian philosopher of the classical period. In turn, the line of Shankara has its roots in the Vedic culture of ancient India, a continuity of living tradition from ancient to modern times that modern scholars agree is without parallel in the world today. The Shankaracharya tradition, furthermore, is considered in India to be the official custodian of the body of techniques and practices that constitute the physiological and experiential side of India's Vedic philosophy, especially those techniques that collectively may be called "meditation." This tradition has preserved and protected the formulae of these techniques through uncounted generations of oral transmission from teacher to student, always under the strictest selective control and supervision.

The education Maharishi received in this environment contained no element of the twentieth century; it could just as well have taken place two or ten thousand years before. But the uniqueness of Maharishi's situation was a truly modern one. On the one hand, Maharishi stood as the closest, most devoted, and most successful disciple of a teacher who had developed his own

quality of mind to a degree of perfection so rare as to be almost extinct in today's world, including India. From him, Maharishi absorbed this timeless value, a breadth and delicacy of awareness that allows the full range of states of consciousness available to the human nervous system to be directly experienced in a systematic way.<sup>2</sup> On the other hand, Maharishi brought to his studies a thoroughly contemporary spirit of inquiry, experimentation, logic, verification, and creativity—in other words, a scientific attitude. Maharishi's unique combination of qualities and circumstances has been most fortunate for the world of science, for through it he has been able to provide the missing bridge between the oldest tradition of human knowledge and the newest.

As an unusually talented student whose own breadth of inner experience was growing rapidly under the tutelage of Guru Dev, Maharishi soon began to notice discrepancies between certain widely held ideas of Vedic philosophy and his own growing experience. With the constant encouragement of his master, he began a systematic reappraisal of the tangle of obscure and often conflicting statements that were then current in Indian culture, and he set out to understand them in the light of that direct experience of pure consciousness which, he knew, has in itself always been the real focus and foundation of Vedic thought. At some time during this period it is clear that Maharishi succeeded in arriving at clarifications of the meaning of ancient lore so fundamental that they can only be called discoveries; he continues to make further such basic discoveries today.

By the process of comparing his own direct experience of the actual goal of meditation with the common understanding then available, it became clear to Maharishi that the common idea of what meditation was supposed to be was in fact a complete distortion of the original meaning of the ancient procedure. Procedures of concentration or of forcing the mind to be free of content, with or without the use of a sensory medium such as an auditory or visual focus, seemed to him to lead away from, rather than toward, the desired result. At every stage of experimentation, Maharishi held to the guideline given him by his master that maximum naturalness and simplicity alone would identify the correct direction; his profound faith in the beneficent simplicity of nature has been echoed in the thinking of other great researchers, such as Einstein. In practice, then, an effective form of meditation should come out to be an easy, automatic process and not a constant struggle involving concentration or control of mind. On this basis, Maharishi recognized quite simply what the mechanics of the original systematic procedure had been, not by means of textual scholarship alone, but by working with constant reference to fresh personal experience of the state of pure consciousness, the aim and endpoint of meditation.

2. At this point the scientific reader will no doubt want to know exactly what is meant by "expansion of consciousness," "developed consciousness," and "pure consciousness," which may seem to be vague or metaphysical terms. In fact, Maharishi has given these words precise definitions for the first time, in reference to quite definite and unmistakable experiences; they are technical terms for him, much as ordinary words like *set* or *function* are technical terms for the mathematicians who give them precise meanings. Thus, pure consciousness is a condition wherein self-awareness is present but thought activity is absolutely nil; because this state is invariably accompanied by a sense of boundlessness temporally and spatially, its attainment is referred to as "expansion of consciousness." "Developed consciousness" refers specifically to the ability to maintain the state of pure consciousness for long periods within meditation and then to maintain it along with thought activity, both in and out of meditation. Although the latter may sound paradoxical, it is quite characteristic of nature at a fundamental level to behave in just this way; highly ordered physical systems such as superfluids, superconductors, or ferromagnets demonstrate a highly stable ground state of long-range coherence upon which is superimposed a second organization of localized excitations. This is called the two-fluid model in quantum physics and is remarkably reminiscent of Maharishi's description of the evolved nervous system.

If we emphasize the overwhelming importance of Maharishi's own clarity of inner experience in this regard, it is because a comparison of his lectures and writings with those of any other philosopher, Eastern or Western, of recent times shows quite clearly that direct and detailed experience of the transcendental values of consciousness, as opposed to intellectual analysis of them, has been an extraordinary rarity.

Maharishi soon verified that this easy, automatic procedure did indeed have the desired effect in a most direct manner. This procedure is the Transcendental Meditation technique.

Once having made this clarification, which involved, as we have said, recognizing that "concentration" or control of the mind was a misinterpretation and that the correct procedure had necessarily to be effortless if it was to continue spontaneously, Maharishi proceeded to satisfy himself that the mechanics of the technique could be explained in a way that was both clear in itself and consistent with ancient Vedic sources on the nature of the mind. It is characteristic of Maharishi's thinking that from the beginning he emphasized the naturalness of the process, whereas others had spoken in terms of forcing a recalcitrant mind to an unworldly experience. Moreover, from the beginning Maharishi pointed to the simplicity and comprehensibility of the process—that is, to its scientific nature—rather than to any possible mystical aspect.

In a lecture in 1960 he said:

There are many systems of what is called meditation that attempt to refine the mind by controlling it in one way or another. All such attempts are difficult and tedious, and, far from achieving anything, tend to take away life. Because of the difficulty and inefficiency of these methods of mind control the idea has become accepted that the path to pure consciousness is difficult. This is a fallacy and stems from ignorance of the nature of the mind. There is a great difference between directing the mind in a particular direction through concentration and directing it by permitting its natural affinities to operate. We know that it is the natural tendency of every mind to flow towards a field of greater happiness. By turning the mind inwards we point the mind towards the field of absolute bliss, creativity, and wisdom. It is upon this principle that our system of meditation is based, and consequently its practice is not difficult.

The whole process is one of direct experience; the journey is a scientifically precise undertaking in which, at each step, the validity of the process is put to the test of direct experience. Meditation is an intellectually satisfying exploration, in which the wisdom behind meditation is illumined by the result at each succeeding level, including the ultimate level of direct experience of the state of absolute Being. It could be said, in fact, by analogy, that this is an exploration of inner space where the real jewel of life is to be found, and that its scientific value and promise far exceed that of the exploration of outer space.<sup>3</sup>

In the light of his discovery, the ancient texts suddenly began to make real sense to Maharishi, and other technical details began to fall into place. As one example, it came to light during his studies that there were originally two distinct classes of meditation practices: those for

3. Maharishi Mahesh Yogi, Lecture given at Shankaracharya Nagar, Himalayas, 1960.

the recluse, or monk, and those for the active, involved person with family responsibilities. As time passed the former class was preserved in monasteries, while the latter evidently was lost, accounting for the popular impression that meditation leads to a life of withdrawal. The Transcendental Meditation technique, as taught to the public, is of the class designed for an active, involved life; thus, it has been literally unavailable in any part of the world for an unknown period of time. More generally, once having a clear picture of the mechanics of the Transcendental Meditation technique, Maharishi was able to find a clear and precise interpretation of the very core of Vedic literature, which constantly refers to these mechanics implicitly and explicitly, being essentially the story of the evolution of consciousness. This view led to a fresh look at celebrated texts whose meaning had become subject to a large number of widely varying interpretations. An excellent example of this reinterpretation can be found in Maharishi's exceptionally lucid and logical translation of and commentary on the *Bhagavad-Gita*,<sup>4</sup> which, for example, demonstrates in convincing detail that the *Gita*'s constant references to the necessity for "withdrawal" actually refer to the mechanics of the Transcendental Meditation technique as a subjective experience and not, as had been widely thought, to any need for a reclusive lifestyle.<sup>5</sup>

### The Transcendental Meditation Technique

The Transcendental Meditation technique, as revived by Maharishi, is remarkably simple. It deals directly with the activity of the mind—thinking—but in a way that is mechanical, abstract, and precise rather than intellectual or reflective. It is basically a procedure for experiencing the *mechanics* of the thinking process in a new direction. Normally one is aware of a thought all at once, in its fully developed form. Obviously, there must be prior stages in the development of the thought; is it somehow possible to bring these stages to conscious awareness in a systematic way? The procedure for doing so consists essentially of two elements: a type of thought optimal for this purpose, and a method to experience it at successive prior stages of its development. (Note that here we are speaking not of the "unconscious" as it is usually conceived in psychology, but rather of the actual mechanics of the thinking process.)

While in principle any thought could be so experienced, the technology of meditation as revived and developed by Maharishi finds as one of its principal practical results that the thought associated with a *sound* is most universally appropriate for this purpose. (The reasons for this are convincingly explained in terms of the structure of subjective sensory experience in some of Maharishi's earliest writings and no doubt provide a rich lode of information for the

4. Maharishi Mahesh Yogi, *Maharishi Mahesh Yogi on the Bhagavad-Gita: A New Translation and Commentary, Chapters 1-6* (Baltimore, Maryland: Penguin, 1969).

5. Maharishi's current scholarship is focused on the *Rig Veda*, a much more difficult and highly concentrated text than the *Gita*, and one of extreme antiquity. As yet unpublished, his major discoveries here have been to elucidate the internal structure and symmetry of the Vedic hymns, especially their "seed within seed" form of expression. Maharishi has shown that the *Rig Veda* contains an astonishingly rich description of the laws of nature governing the creation and development of the universe expressed in a form entirely unfamiliar to modern science, and not, as other translators have found, merely a series of primitive, unintelligible prayers. Once again, the key to the *Rig Veda* lies in a correct understanding of the Transcendental Meditation technique and the state of pure consciousness, which is the basis of its subject matter. Maharishi has described the *Rig Veda* as, in one aspect, a sort of instruction manual for the operation of the human nervous system, offering many unsuspected possibilities to be explored. We mention Maharishi's scholarly work here because its success illustrates that the TM technique is indeed a discovery in precisely the scientific sense; it has proved to be the key to understanding and organizing a great deal of previously opaque material.

neurophysiologist interested in the relationships of the various sensory and thought-cognizing areas of the brain.) Furthermore, there is a particular set of sounds handed down for centuries in the Shankaracharya tradition that seem to have the special property of becoming increasingly euphonious and pleasing as they are perceived at “finer” (prior) stages. These particular sounds are termed *mantras* in Sanskrit. The Shankaracharya tradition has preserved not only these sounds, but also a system of rules or formulae by which they are to be assigned to individuals, the idea being that a particular sound has a quality that resonates best with the structure of a particular nervous system. Behind these rules of neurophysiological specificity there lies a rich and fascinating theory of the mantras and their application; to date Maharishi has not published his interpretation of this theory, although he has indicated a desire to do so. No doubt this theory also holds the greatest riches for the future of neurophysiological research; in the meantime, however, Maharishi has emphasized that in using the mantras on a practical level exactly as prescribed by the unbroken tradition of his own teacher, one may at least feel assured of correct and safe application, guaranteed by long-accumulated experience.

The second element of the Transcendental Meditation technique involves learning to use the mantra properly on a mental level in order to trace its prior stages of development as a thought. Although this is an effortless process, it is a delicate one, and unfortunately it does not seem possible to adequately communicate this aspect by written description alone. The reason for this is that individuals are found to respond in slightly different ways to the initial stages of the experience, which is a novel one, and instructions must be adjusted on the basis of subjective reports so that the process will continue easily. This can only be accomplished effectively through the personal presence of a trained teacher. (To understand this point better, one need only imagine the difficulty of teaching someone to dream—in the event that he had never experienced that state of consciousness—by means of a written description alone. What is truly remarkable is that the ability to experience the fourth state of consciousness [pure consciousness or transcendental consciousness] can be taught at all, and not that it cannot be taught by written instructions!) The fact that the TM technique can only be effectively taught through personal instruction obviously does condition its mass distribution, but it also has been found to guarantee the safety and success of the learning process. At present, candidate teachers receive nine months of full-time training (six months in residence and three months of fieldwork) covering every aspect of theory and practice involved in guiding the new meditator before they are certified to teach the TM technique to the public.

To practice the Transcendental Meditation technique, the subject simply sits comfortably with eyes closed and begins to use the thinking process, with the mantra as a medium, in the precise but restful way he has been taught. Subjectively, the meditator usually reports an immediate sense of bodily quiet and relaxation along with a “settling down” of thought activity. Often, there is a loss of bodily sensation—yet full conscious awareness is maintained and in fact is reported to be experienced as “expanded” or “clarified.” At certain moments in the period of the TM technique there may occur shorter or longer intervals when thought activity is reported to cease completely, and the mind then simply experiences conscious awareness alone, without



content. This condition, which is difficult to imagine or describe precisely just because it is a novel fourth mode of consciousness, is the state given the name “pure consciousness.” Because it allows the mind to go beyond the earliest stage of the thinking process, Maharishi named the technique “Transcendental” Meditation. The process is described as a restful, deeply enjoyable one, and afterwards there is typically a feeling of refreshment, liveliness, strength, and clarity of mind.

Maharishi’s first great contribution was therefore the discovery and revival of a mental practice that is simple, enjoyable, and easy to do, and that has very good effects from the first sitting. Moreover, because the technique induces the experience of “pure consciousness” easily and naturally, using only the intrinsic tendency of the thinking process, Maharishi felt confident that this must in fact be the very same practice referred to in ancient Vedic literature as the direct path to that highly valued experience, in striking contrast to the understanding of recent centuries that to experience pure consciousness (*samadhi*) through meditation was necessarily an arduous, difficult, lifelong task. It is impossible to overemphasize the importance of this discovery, which changed the impossible into a simple daily reality. As an analogy, one might think of the superconductivity effect discovered in quantum physics, whereby electrons may undergo completely frictionless flow (“perpetual motion”) in a way that is inconceivable on the basis of the cruder, pre-quantum understanding.<sup>6</sup>

### **Growth of the Transcendental Meditation Program**

In 1958, five years after the passing of his beloved teacher, Maharishi found himself with the key to a wonderful and long-lost technology of creativity and intelligence, a technology whose immense practical applications were obvious for the individual, and through the individual, for the fields of health, education, and economics, and for the alleviation of human suffering generally. Its need in the world was, to Maharishi, plainly evident. In 1960 he said:

There is an ever-increasing state of chaos in the world; tension increases daily in the individual, in social life, in national affairs, and international relations. The great and urgent need is for something to re-establish harmony in the individual human being and to give him peace; only from such an inner peace can wisdom and happiness be born. All that we call . . . knowledge today, the whole process of endless fact gathering, must utterly fail to satisfy the real needs of man . . . I came out of the Himalayas with a method designed to raise both the head and the heart of man to the point where knowledge and appreciation of the quality of his true nature can be attained. I call my method meditation, but it is, in fact, a technique of self-exploration; it enables a man to dive into the innermost reaches of his being, in which dwell the essence of life and the source of all wisdom, all creativity, all peace, and all happiness. . . . The word *meditation* is not new, nor are the benefits of meditation new. . . . But for centuries the technique of meditation of *this* kind has been forgotten. This is why man

6. It is interesting that in both cases the technique involved in bringing the onset of the new state is simply to lower activity to an extremely low level. In the superconductor a very low temperature of nearly absolute zero is required; in the TM technique, it is the “mental temperature” that is reduced.

suffers, or seems to suffer. This is why suffering has become so universal, so much an inescapable part of life.<sup>7</sup>

On the basis of this line of thinking, therefore, Maharishi made his second major contribution—to project the use of the Transcendental Meditation technique not for a small and isolated elite group of dedicated disciples, but, most ambitiously, for the world’s population as a whole. This obviously required him to train others outside the immediate Shankaracharya tradition, Indians and non-Indians alike, to teach the TM program. This step must have seemed to Maharishi at the time a considerable risk; perhaps this helps to explain his insistence, from the beginning, on a high standard of systematization and uniformity in the training of his teachers and the steps by which they in turn taught the TM technique to the public.

From the beginning, Maharishi made it clear that what he was recommending was the practice of a mechanical technique based upon certain basic principles of mental functioning, and not the acceptance of a new philosophy or system of belief. While taped lectures and written materials explaining the theory by which Maharishi understood the functioning of the TM technique and its relationship to the structure of the mind generally have always been freely available at TM program centers, those who came to learn the technique were not required to accept anything other than the practical guidelines necessary to practice it correctly; indeed, even outright skepticism about either the technique or the theory behind it was not discouraged.

Those who did become interested in Maharishi’s highly original understanding of the principles behind the TM technique found that he expressed them in the simplest possible language; in terms of the “natural tendency of the mind to expand its boundaries,” the “spontaneous attraction of the attention towards a field of greater enjoyment in the finer levels of thought,” and the superiority of effortlessness over rigid, bounded control for allowing the mind to experience the “source of thought, pure consciousness.” This simple-sounding description nevertheless amounted to a sophisticated, precise, and highly useful picture of the dynamics of thinking as subjectively experienced. Maharishi has always emphasized that he viewed the dynamical principles of the behavior of consciousness simply as laws of nature, and while he always paid the greatest homage to the Vedic tradition for having originated the science of consciousness, he made it clear that the laws themselves were no more to be considered as belonging specifically to the Vedas or to India than we consider the electron to belong specifically to England, the land of its discovery. In the same vein, while Maharishi sometimes spoke of the spiritual or religious *applications* of the TM technique, he also spoke of the applications to military life, to business, or to health; he himself plainly regarded the source of the technology for the expansion of consciousness represented by the TM technique as lying in certain universal laws of nature with the same status as the laws of physics. The TM program is certainly not a religion, nor does it interfere with the practice or belief of any religion.

7. Maharishi Mahesh Yogi, Lecture given at Shankaracharya Nagar, Himalayas, 1960.

In retrospect, it is evident that each of these features, added to the genuine effectiveness and power of the technique itself, was essential for the wide public acceptance that the Transcendental Meditation program has since enjoyed.

Maharishi began to train the first teachers of the Transcendental Meditation technique in 1961, using candidates chosen from a number of nations. As they in turn accumulated experience in teaching a wide range of individuals from many walks of life and educational backgrounds, Maharishi continued to modify and develop the details of the standard course of instruction in the TM technique, aiming always at the simplest, clearest, briefest, and most comprehensive course that would result in giving any student the correct initial experience and allow him to continue successfully on his own thereafter. This finely tuned systematic approach seems to have no peer whatsoever in the teaching of either any other practice going under the name of “meditation” or other means of self-development, and is the keystone of the success of the whole program.

By the early 1960s, the course to begin the TM technique had been standardized into essentially its present form: a sequence of two lectures, an interview with questionnaire, and a session of personal instruction in the actual practice, which is then followed by three follow-up classes. The course thus comprises altogether about seven hours of instruction over six separate days, the last four of them consecutive. Once having learned, the individual practices the technique for about 20 minutes in the morning and again in the evening; no requirements are made regarding any other aspect of his life, diet, or habits.<sup>8</sup>

On the basis of the evident seriousness, reliability, and success of the teaching procedure, the network of teachers and the number of people practicing the TM technique grew rapidly. As of the end of 1975, over 10,000 teachers from almost every nation had been trained, and they in turn had instructed over one million individuals in the practice of the TM technique. Over 400 centers have been established in the United States alone for the purpose of teaching the TM program.<sup>9</sup>

The course in the Transcendental Meditation technique, as these teachers are trained to give it, is remarkably systematic, precise, and uniform. Indeed, it may well be the most uniform single piece of education ever offered to the world’s public; the TM technique is taught in exactly the same way from Ghana to California. This is possible because no particular educational background—not even literacy—is required or assumed for an individual to be successfully

8. Students or others who are likely to have been using nonprescription drugs are asked to refrain from such use for 15 days before instruction in the TM technique. This requirement developed out of experience in the mid-1960s and is purely a physiological one that has been found to improve clarity of the initial experience.

9. Five worldwide organizations are responsible for teaching the TM program in different social and educational contexts, although all of them teach the actual technique in exactly the same way. For further information contact the following: AMERICA, World Plan Executive Council—U.S., National Administrative Center, 17310 Sunset Blvd., Pacific Palisades, California 90272, U.S.A.; Maharishi International University, Central Campus, Fairfield, Iowa 52556, U.S.A.; ASIA, Maharishi Institute of Creative Intelligence, Shankaracharya Nagar, Rishikesh, Uttar Pradesh, India; EUROPE, International Administrative Centre, CH 6446 Seelisberg, Switzerland; Maharishi European Research University, CH 6353 Weggis, Switzerland.

instructed. The ability to think a thought, and therefore to make novel use of the mechanics of the thinking process, is a universal one, and the language and approach used by the teachers of the TM program reflect this simplicity and universality.

### **The Transcendental Meditation Program and Scientific Research**

Obviously, the Transcendental Meditation technique, taught as a simple practice, unobscured by religious overtones or requirements of metaphysical belief, which promised very great benefits, and which had been uniformly learned by thousands of subjects, provided an open invitation and an ideal opportunity for scientific research. Indeed, from the early days of his teaching activity Maharishi himself had encouraged and invited scientists to become interested in investigating the program, feeling that objective validation was the necessary and appropriate basis for public acceptance. Obviously, the greatest encouragement to scientific research was the fact that Maharishi put forward the TM technique in such a systematic and standardized form, simply as a new area of education.<sup>10</sup>

However, it was only in 1968 that R. K. Wallace, then a graduate student in the Department of Physiology at the University of California, Los Angeles, made the first serious investigations of the physiological effects of the Transcendental Meditation technique in individuals practicing the technique regularly, leading to a Ph.D. thesis entitled *The Physiological Effects of Transcendental Meditation: A Proposed Fourth Major State of Consciousness* (1970). In this and later studies, he and his collaborators found definite effects in terms of reduced metabolic rate, changes in blood chemistry, increased skin resistance, and a consistent pattern of changes in the electrical activity of the brain as recorded by the EEG. These results, reported in *Science*<sup>11</sup> and the *American Journal of Physiology*,<sup>12</sup> and later popularized in *Scientific American*,<sup>13</sup> attracted widespread scientific attention and were followed by an increasing volume of work from other laboratories. The present volume contains the greatest part of this work completed before the end of 1975. It is significant to note that even in the first published reports of Wallace et al., the interpretation placed on the phenomenology of the state produced by the TM technique as a "fourth major state of consciousness" tended to verify the theoretical concepts put forward by Maharishi.<sup>14</sup> Specifically, early research bore out Maharishi's point that the state induced by the Transcendental Meditation technique was not to be thought of as some sort of exotic distortion impressed on the nervous system from outside, but rather should be considered as a new, yet entirely natural, state of consciousness comparable to, but perhaps actually more fundamental than, waking, dreaming, or deep sleep.

10. The reader will note in this volume that comparatively few of the studies offer direct comparisons between the TM technique and other practices of "meditation," concentration, yoga, autogenic training, hypnosis, the various psychotherapies, and so forth. This lack seems to be due in large part to the often extreme difficulty of identifying reliable and standardized sources for these various other methods, a fact that in itself says a great deal about Maharishi's success in providing his technique in a scientifically accessible form.

11. Robert Keith Wallace, "Physiological Effects of Transcendental Meditation," *Science* 167 (1970): 1751-1754.

12. Robert Keith Wallace, Herbert Benson, and Archie F. Wilson, "A Wakeful Hypometabolic Physiologic State," *American Journal of Physiology* 221 (1971): 795-799.

13. Robert Keith Wallace and Herbert Benson, "The Physiology of Meditation," *Scientific American* 226 (1972): 84-90.

14. Maharishi Mahesh Yogi, *Science of Creative Intelligence: Knowledge and Experience*, a 33-lesson videotaped course (Seelisberg, Switzerland: Maharishi International University, 1972).

To summarize, then, Maharishi rediscovered the simplicity, effectiveness, and naturalness that in fact characterized the reality of the most ancient meaning of the term “meditation”. He then introduced it to the public—an unprecedented step—in just such a way that a modern objective and technically oriented world could easily accept it, uniformly and precisely taught by reliable, mature teachers and able to be added to any way of life. All of these facts taken together have allowed physiologists and psychologists to regard the TM technique simply as a scientific discovery, and it is clearly a major one whose ramifications and depths have hardly begun to be explored.

It would be shortsighted, however, to believe that Maharishi will be regarded in the future merely as the man who introduced to science a certain new or revived relaxation technique with a variety of measurable effects. Rather, it seems certain that he will properly come to be regarded as the man who changed the entire scope and direction of scientific research by compelling science to recognize in its own terms and by its own methods the existence and reality of *a new state of consciousness*. This is the real discovery, of which the TM technique itself is actually a technological application, and it is surely a development of much more far-reaching importance for scientific knowledge than all of the other great scientific advances of this century combined. It is to this point that we would like to devote the remainder of this introduction.

### **Implications of Research on the Transcendental Meditation Program**

It is evident from a glance at the titles of the papers in this volume that the experimental studies on the Transcendental Meditation program to date cover a very broad range of specialties within physiology, biochemistry, neuroscience, psychology, medicine, and sociology. No doubt these many different studies deserve to be critically examined one by one and discussed in a series of comprehensive review articles. This is not our purpose here. Rather, we would like to express to the scientific community an overall attitude, which we believe is already coming to the fore, and then to speculate on the direction that future research on the TM program may take.

The findings reported in these papers fall into two broad categories: first, measurements of the changes in physiology recorded during the actual 20-minute period of the TM technique; and second, the measurement of cumulative effects of the TM program by the methods of physiology, psychology, and sociology.

The physiologic state induced by the TM technique is characterized by a significant decrease in metabolic rate and in anxiety, as measured biochemically and electrophysiologically, indicating a state of extraordinarily deep physical restfulness. Yet, unlike sleep, this state is accompanied subjectively by full maintenance of wakeful awareness. This unusual combination is further accompanied by a pattern of EEG changes that can be summarized as increased brain wave coherence, in terms of inter- and intra-hemispheric phase correlations and spectral simplicity. Stated most simply, this state is one of extreme quietness and coherence in the nervous system, experienced in full conscious awareness, and achieved by means of a remarkably quick and natural process. One point that must be emphasized is the integrated nature of all the

physiological responses that occur during the practice; it would be wrong, for example, to confuse the state produced by the TM technique with that obtained via alpha biofeedback training; the alpha rhythm increase seen in the EEG during the TM technique is only one among many changes.

The reports in the second category describe an immense range of beneficial effects of the continued practice of the TM technique, in terms of metabolic efficiency and homeostasis, resistance to disease, athletic performance, improved intellectual, perceptual, and motor abilities, lowered anxiety, strengthened personality and creativity, and even successful rehabilitation of criminals and drug abusers. Clearly an influence capable of producing all of these diverse effects must operate at a truly fundamental level. How shall it be understood?

It may be said without fear of contradiction that none of the existing life sciences possesses a theory of sufficient breadth and depth to organize, let alone convincingly explain, all of these findings at once. To describe this new phenomenon, a new standpoint is needed.

### **How Should the Transcendental Meditation Technique Be Understood?**

The clearest conclusion taken from the body of scientific research as a whole is not merely that the TM program has a real effect, but that it *supports a definite direction of human growth*, one characterized by improved functioning, mentally, physiologically, and emotionally. That this holistic growth can evidently be stimulated by the activation of some very fundamental level in the mind and body, through an extraordinarily simple procedure that deals directly with only the *thinking* process, is a truly remarkable fact. Clearly, here is the sign of a hidden basic element not previously taken into account by any of the existing sciences of human life. What is this element, and how shall we define the direction of growth it induces?

I submit that the only available theory that is in any way comprehensive enough to convincingly describe the reasons for all these facts in context is in fact Maharishi's own theoretical description<sup>15</sup> in terms of creative intelligence: its source, mechanics, and goal, and its connection with physiology. Maharishi has called this body of knowledge the Science of Creative Intelligence; it is a highly developed picture of holistic growth processes in man based upon the key element of *consciousness*. For the first time, a simple, clear, complete, and satisfying image of the full range of consciousness and its relation to the laws of nature is available. The Science of Creative Intelligence is Maharishi's modern and original synthesis, which includes as ingredients three streams of information: direct personal experience, the formulations of the ancient Vedic seers arising from their internal insights into the workings of the mind, and the laws of nature as discovered by the modern sciences, from physics to biology.

Moreover, this integrated theory is not vague or exclusively "philosophical"; it is highly precise and specific in terms of the subjective experiences that arise through the mechanics

15. Ibid.

of the evolution of consciousness. As such, it can provide not only a general framework for scientific thought, but also many specific suggestions for testable laboratory hypotheses as well, thus contributing in a demonstrable way to the pace of scientific progress.

Therefore, this theory represents a tremendous untapped resource; it is incumbent upon science to translate its language into terms of the neuron and molecule. In other words, the time has now come for science to take seriously not only the Transcendental Meditation technique itself, but the vast, ancient, and most impressive understanding of the structure of consciousness and human physiology that lies behind it, as interpreted and clarified by Maharishi in a modern and cohesive form. The TM technique, which heretofore has been looked at in scientific isolation, is in fact the tip of an iceberg. Behind it lies a picture of the world that, always respected for its antiquity, has commonly been thought of as hopelessly metaphysical, that is, outside the domain of science. But in fact the central theme of the history of science of the past 400 years has been precisely to expand more and more into the domain that used to be considered "philosophy." The essential tool of this expansion has of course always been laboratory experimentation, the systematic gathering of repeatable experience. Now that the experience of the previously "exotic" state of pure consciousness is readily available in a systematic way, and is correlated with a well-defined physiological signature, it may take its rightful place, not as a curiosity or byway of human experience, but rather as the keystone of human life at the level of the individual and as the key to a genuine theoretical understanding of man's consciousness and growth on the level of science.

Here again, Maharishi's genius has been to formulate the theoretical understanding behind the Transcendental Meditation program in such clear and precise terms that he has essentially rescued an entire long-hidden side of man's traditional knowledge and presented it in a form that scientists are prepared to understand. If his description is not already in the fashionable technical language of the day, it is at least in a form where the connection can be made with a minimum of ambiguity. He describes<sup>16</sup> the TM technique as a process of systematic purification of the nervous system, leading to a continually clearer experience of the fourth state of consciousness ("pure consciousness") and thence to a fifth state wherein pure consciousness is maintained along with waking, dreaming, and sleeping. His detailed descriptions of the nature of the fourth and fifth states of consciousness and the mechanism by which they arise, expressed in subjective terms, are nevertheless so unambiguous and straightforward that the scientist studying them can easily and immediately formulate directions of laboratory research in his own chosen terms, be they biochemical, electrophysiological, or psychological. A growing number of scientists have in fact met with Maharishi for just this purpose in the past four years and have found him most receptive and helpful, indeed enthusiastic to see the jewels of his own traditional heritage become the focus of scientific interest for the benefit of mankind.<sup>17</sup>

16. Ibid.

17. The growth of this activity was one of the primary motivations for the founding of Maharishi European Research University in April 1975 in Weggis, on Lake Lucerne, Switzerland.

The most important single result emerging from this unique collaboration of ancient and modern science through the bridge of Maharishi's ability to relate the two is the elucidation of the term "enlightenment." For centuries this term has been merely a vague expression of the notion that from time to time there have existed individuals who were spontaneously at a level of adaptability, stability, integration, purity, and growth-orientation so far above the population average as to warrant the creation of a distinctly higher category of human life. Never before has it occurred to scientists that the neurophysiology of such exalted individuals was subject to either measurement or development. Maharishi has for the first time clearly defined and described the state of "enlightenment," giving specific criteria in terms of subjective experience and projecting specific criteria in terms of physiological measurement. Enlightenment is identical with the fifth state of consciousness, stabilized pure consciousness integrated with waking activity, dreaming, and deep sleep. Most important of all, as the experience of hundreds of thousands of those continuing the TM program grows from year to year around the world, more and more reports are being noted of exactly those experiences that signal the onset of this new stage of human growth. (For example, one specific experience now being reported more frequently is that of inner wakefulness during sleep, described in ancient Vedic literature as a sign of the stabilization of the state of pure consciousness.) Such experiences, described sporadically in literary or historical sources by the spontaneously highly developed individuals of various times and cultures, have simply never before been widely available to the public as a whole, nor have they been proposed as a subject of serious scientific research. Moreover, this growth towards the higher reaches of human capability may be understood in a way that joins smoothly onto the best previous thinking in this area; Maharishi's description of pure consciousness and enlightenment supplies, for example, a perfect completion and fulfillment of Maslow's concepts of "peak and plateau experiences."

This growth of refined experience in a considerable fraction of the population at large will no doubt be the subject of the next stage of research on the Transcendental Meditation program and will show that the direction of growth supported by that program is indeed one with a definite goal. This goal, moreover, is a well-defined status of mind and body that represents the maximum development of mental and physical health. Its mechanics are found to have their origin in the normalization of the physical nervous system: one of Maharishi's most striking statements is that the truly normal man is the enlightened one and that to have available less than the full potential of one's nervous system is to be subnormal.

These ideas are not fanciful, but are in fact the ones already emerging from discussions of serious scientists working in this area as they recognize that their subject matter is not merely a technique, but rather a specific growth process having well-defined stages—a process whose proper understanding requires one to pay increasing attention to the wealth of theoretical information possessed by Maharishi. Inevitably, the point of research on the TM program is going to be seen less and less in terms of a verification of the reality and effectiveness of the technique and more and more the other way around: the model of stabilized pure consciousness gained through a systematic culturing of the nervous system will become the focus and guide of



all other scientific research on the human organism, a new paradigm for the scientific picture of human development. This, then, is Maharishi's real contribution to science; it can be foreseen in the first layer of research collected in this volume and will emerge more clearly as deeper studies proceed.

The viewpoint that what is involved here is much more than a "simple, mechanical technique" and must be understood as growth towards the onset of an entirely new level of functioning obviously has the most far-reaching practical implications for those directly engaged in this research. In the small number of theoretical discussions of the TM technique that have so far appeared in the literature,<sup>18</sup> one principally finds the idea that the technique elicits a generalized relaxation response, the opposite of the fight-or-flight reaction. Such an idea may have some merit as a limited physiological description of the initial stages of the TM program, but is clearly a most shallow and inadequate explanation of a process more accurately seen as a fundamental stimulation of human growth, especially growth of the higher integrative faculties. Moreover, once one has decided to accept, even provisionally, the concept of the onset of a new state of consciousness, all of the results of existing research are seen as being characteristic of the earlier stages of this process, representing, therefore, merely the precursors of yet more dramatic changes.

According to Maharishi's description,<sup>19</sup> the state of consciousness that is the ultimate result of the Transcendental Meditation program is as different from the waking state as the waking state is from dreaming. If this is so, then it is as absurd to characterize this new state by the results of the first few weeks or months of the TM program as it would be to consider the first few drowsy moments after the alarm clock goes off in the morning as a complete characterization of the waking state with all its enormous variety and potential. For this reason, those researchers who have attempted to duplicate the effects of the TM technique by inventing another practice that mimics certain superficial aspects of the TM technique and can be learned from a book, or who have insisted on the unacceptability of aspects of its teaching such as mantras "in the grasp of a secret cult," or who aim to "improve" an internal technology that has already existed in fully developed form for thousands of years, seem to have missed the point and the real opportunity that is at hand.<sup>20</sup>

The situation science faces in successfully integrating the TM technique and the knowledge behind it is a very special one, and it seems inappropriate and counterproductive in this case for science to take an excessively arrogant attitude towards this knowledge and its source. This is not to suggest that the critical and skeptical approach that is the essential safeguard of scientific progress should be abandoned. But this should not prevent the best and most

18. Wallace, Benson, and Wilson, "A Wakeful Hypometabolic Physiologic State," *op. cit.*

19. Maharishi Mahesh Yogi, *Science of Creative Intelligence: Knowledge and Experience*, *op. cit.*

20. Another point that must be considered by those whose main interest is to modify the TM technique is safety. It is clear from this volume of papers that the effect of the TM program is at least as pronounced as that of many powerful medicinal drugs. But the safety of the TM program has been clearly demonstrated. What will be the long-term effects of a related but altered practice? Such experimentation on human subjects would clearly not be allowed in the case of drugs; it may be equally irresponsible in this case.

imaginative researchers of this generation from realizing that what is being offered to them here is an extraordinary and unsuspected gold mine of information on the human nervous system, one that furthermore can be integrated with remarkable ease into the mainstream of ongoing research. As an example, the split-brain research of recent years led to the idea that creativity is associated with the degree of integration of the functioning of the left and right cerebral hemispheres; several studies in the present volume show in terms of EEG that the two hemispheres do become more mutually coherent during the practice of the TM technique, and other studies indicate that those practicing the TM technique indeed show improved creativity. Here is a direct and historic link between the leading edge of modern neurophysiology and an experience that Maharishi calls “contacting the source of creative intelligence in the mind.” What further advances, what brilliant discoveries, await the researcher who is able to utilize simultaneously both the tools of modern neurophysiology and ideas extracted from Maharishi’s clear, precise, and modern presentation of a remarkably rich, ancient store of knowledge on the human mind and body?<sup>21</sup>

### **Maharishi and the Future of Science**

Even more important, the integration into modern science of the venerable and newly invigorated science of consciousness promises a long-sought holistic basis for the fulfillment of the aims of science generally. The science of consciousness should after all be the proper meeting ground and focal point of all the branches of objective study, including not only the biological and psychological sciences, but the physical sciences as well. The long-missing center for the branches of scientific knowledge—a unified theory of consciousness in direct contact with all the special studies of the laws of nature—now has a chance to develop. This step may well lead to the completion of the cycle of understanding that began in our culture thousands of years ago.

As one illustration of the direction such unified thinking may take, it is interesting to note in this volume of physiological, psychological, and sociological studies on the Transcendental Meditation program that Maharishi himself has shown a good deal of interest in the connection between meditation and the physical sciences. In particular, he has pointed out a remarkable series of parallels between the picture of the universe developed by modern quantum field physics and his own description of the fundamental structure of subjective life, supported by the Vedic cosmogony. Quantum field theory finds that particles of matter are excitations or vibrations of an underlying abstract field; Maharishi states that in the mental realm “thoughts are excitations of consciousness.” In quantum theory, there is a basic state of least excitation known as the ground state, or “vacuum state,” of the field, which is unbounded in space and perfectly stable in time, and which has the property of zero entropy or perfect order; the terms “least excitation,” “unboundedness,” and “perfect order” are also used to describe the state of pure consciousness, which provides a rather exact analogy to the quantum vacuum state; they occupy corresponding positions in the respective world views. In quantum physics, the vacuum state

21. It should also be noted that, in addition to the basic TM technique, the full TM program, as developed by Maharishi, includes a number of ancillary practices that are added to an individual’s program from time to time as his experience develops. Some of these are modifications of the basic TM technique, and some are of quite a different character; the body of practices known to Maharishi represents a knowledge of the human constitution that is phenomenal for its delicacy, power, and completeness, and that offers science a major challenge and a unique opportunity.

contains no real matter or light and yet has in it (through the uncertainty principle) all possible matter and light in the form of so-called “virtual particles,” or zero-point fluctuations. Likewise, the state of pure consciousness is said to contain all possibilities, to be a state of pure potentiality in the sense that it is empty but lively; after experiencing it one notices increased creative thinking; it is utterly silent yet is identified as the “source of creativity.” Finally, fundamental theorems of quantum field theory tell us that by knowing the vacuum state with its unmanifest fluctuations in detail, one may mathematically deduce the properties of all the possible excited states, including all the most complex forms of matter in interaction; knowledge of the vacuum is really knowledge of the world in its entirety. This remarkable result, coming from the most solid, successful, and best established scientific theory we possess, gives a stimulating insight when we compare Maharishi’s statement that “pure consciousness is the home of all knowledge, the home of all the laws of nature; by knowing it, the support of nature is gained spontaneously for all our thinking and activity, and the field of all possibilities opens to us.”

One sees that the picture of nature given to us by Maharishi is really no more (or less) “metaphysical” than is modern physics; our belief in abstract ideas, after all, comes purely on the basis of the success of those ideas in explaining what we observe in a convincing way and in leading to practical fruits. On the basis of this criterion, and as evidenced by the massive amount of information in this volume, Maharishi’s description of the mind and of nature deserves to become the dominant theme of the next stage of scientific knowledge. Perhaps the time is not far distant when the physics of elementary particles and the science of human consciousness will genuinely be recognized to have uncovered parallel views of the same reality, through very different methods. Such an achievement will surely validate Maharishi’s projection, made on the basis of the present scientific research on the Transcendental Meditation program, that the coming age is an Age of Enlightenment.

On this note of exciting future possibilities we will end our survey; one thing only remains to be said. It is Maharishi’s unique qualities that have transformed the elusive vision of enlightenment for mankind into a practical reality of increasing certainty. He is at once a modern man and an ancient one, a genuine scientific innovator in his own right and a living representative of the purest and most highly developed tradition of man’s inner search for reality and wholeness. Science is greatly in his debt, for he has taken unprecedented steps on the way to a great unification of the two classic paths of human knowledge, the inward and the outward. The ultimate achievements of this union are impossible to fully foresee today, except that they will be glorious both in terms of knowledge gained and the enrichment of man’s life in society. Speaking for all those of the scientific community who have had the opportunity to meet and talk with Maharishi, and to be delighted by his clarity, his enthusiasm, and his warmth, I can express only a small part of the gratitude for what he has given us. May we learn yet more from him in the years to come.

*Weggis, Lake Lucerne, Switzerland*  
*January 1976*