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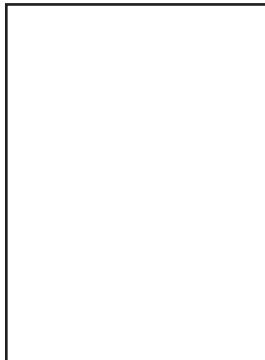
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IN THIS ARTICLE, WE EXAMINE THE IMPLICATIONS FOR ECONOMICS OF the latest advances in our scientific understanding of natural law provided by modern physics. In particular, we discuss the implications of the recent discovery¹ of the unified field of all the laws of nature by modern theoretical physics for the areas of economics and business administration. We show that the discovery of the unified field, together with the availability of a fully developed technology of the unified field,^{2,3} provides a practical and proven means to create unprecedented economic progress and success within an organization, a nation, and the world as a whole.

The progress of society is based upon scientific knowledge. The scientific understanding of the laws of nature governing behavior at all levels of the physical universe provides the theoretical foundation for the practical utilization of these laws through the various branches of applied science and technology. For example, scientific knowledge of the laws of nature governing biochemical and physiological processes provides the theoretical basis for all of the applied methods, approaches, and technologies in the field of medicine. Similarly, knowledge of the basic laws governing socio-economics and social dynamics forms the basis for all contemporary social and economic policies.

Until recently, scientific understanding of the laws of nature in every field has been incomplete. Partial and fragmented understanding of the laws of nature resulting from incomplete knowledge has led to technologies that have, on the one hand, brought a degree of progress and comfort to society but, not being holistic, have also resulted in physiological, psychological, sociological, and ecological imbalances. Nuclear technologies, for example, based on the scientific understanding of the laws of nature governing nuclear structure and transformations, have given rise to an alternative energy source that can be economically cost effective,⁴ but they have also given rise to the growing problem⁵ of long-lived radioactive waste disposal and to a form of weapons that has threatened mankind with total annihilation. The continued progress of society now demands the practical utilization of a level of nature's functioning which is at once more powerful and more holistic—a technology based on the total potential of natural law available in the unified field.

DISCOVERY OF THE UNIFIED FIELD

DURING THE PAST TWO DECADES, PROGRESS IN THEORETICAL and experimental physics has led to a progressively more unified understanding of the laws of nature, culminating in the recent discovery of completely unified field theories.¹ This discovery began in 1967 with the introduction by Professors Weinberg and Salam of the unified theory of the weak and electromagnetic forces,⁶ uniting two of the four fundamental forces governing all physical phenomena in nature (see Figure 1). The profound success of this unified "electroweak" theory confirmed that at deeper levels of nature's dynamics—at more fundamental (i.e., smaller) spacetime scales—the laws of nature present a simpler, more unified structure in which superficially diverse laws of nature become unified.

In the early 1970's, it was shown that this same unifying principle could be extended to include the strong nuclear force, leading to "grand unified theories" of the strong, weak, and electromagnetic forces.⁷ In 1974, the concept of supersymmetry⁸ was introduced—a profound mathematical symmetry principle capable of unifying particles of different "spin," i.e., force fields and matter fields—providing the mathematical basis for completely unified field theories. During the past several years, the application of this principle has led to the development of completely unified theories of all the fundamental forces and particles of nature⁹ based on the heterotic string.¹

The heterotic string or "superstring" describes all the fundamental forces and particles as the various modes of vibration of a single, underlying unified field. The superstring thereby provides a completely unified understanding of the fundamental forces and particles of nature, in addition to the first quantum-mechanically consistent theory of the gravitational field.

Now with the discovery of the unified field, the total range of natural law is open to scientific knowledge and exploration. Since the progress of society is based on scientific knowledge, the discovery of the unified field—the most fundamental and powerful level of nature's dynamics—can be expected to have the most far-reaching implications for human life and civilization. Moreover,

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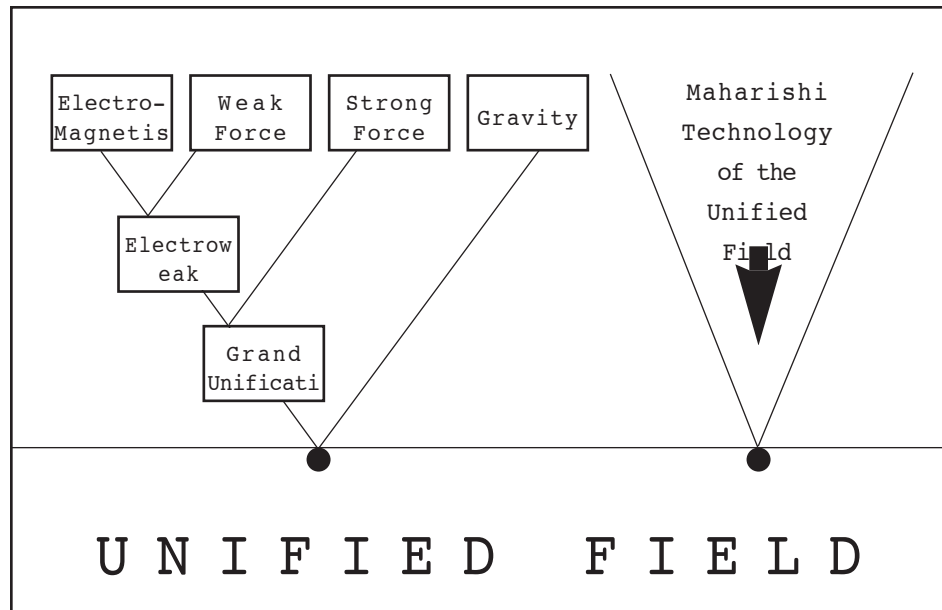


FIGURE 1. The progressive unification of the four fundamental forces of nature (left-hand side) along with the systematic technology to access and apply the unified field for the benefit of human life (right-hand side).

The applications of this technology have already demonstrated its capacity to create a quality of life and civilization which is far beyond that which was possible based on previous levels of scientific knowledge.

because the discovery of the unified field constitutes scientific knowledge of the total potential of natural law, in contrast to the more superficial, partial, and fragmented levels of scientific knowledge, its application can be expected to produce holistic benefits, creating balance, and neutralizing the destructive side effects of previous levels of scientific knowledge. For this to be practically realized, however, a technology of the unified field is clearly necessary. Fortunately, such a technology exists,² and has been the subject of intensive scientific research. During the past 20 years, its effectiveness has been verified by hundreds of published studies appearing in leading scientific journals throughout the world.¹⁰⁻¹⁶ The applications of this technology in the fields of health,¹² education,¹³ rehabilitation,¹⁴ economics,¹⁵ and world peace¹⁶ have already demonstrated its capacity to create a quality of life and civilization which is far beyond that which was possible based on previous levels of scientific knowledge.

THE UNIFIED FIELD AND CONSCIOUSNESS

IT WAS CLEAR EVEN FROM THE PIONEERING WORK IN THE AREA OF unified field theories by Einstein and contemporaries that the application of this most fundamental and powerful level of natural law would necessarily be through a technology of consciousness.¹⁷ This is partly because the domain of superunification—the Planck scale of 10^{-33} cm—is beyond the range of any microscope or conceivable particle accelerator. In addition, the objective approach of modern science, which is founded upon the separation between the observer and the observed, is essentially unsuited to investigate the fundamentally indivisible structure of natural law at its unified foundation.¹⁸ However, although the unified field is beyond the range of any objective technology, it is not beyond the range of human intelligence, as today's highly successful unified field theories have demonstrated. Indeed, it is now well known¹⁷⁻²⁰ that through proper training, human awareness can gain direct access to the unified field in the most fundamental state of human consciousness—the state of “pure consciousness,” which lies at the foundation of conscious experience.^{2-3,19-20}

During the past 20 years, extensive scientific research,¹⁰⁻¹⁶ along with the direct personal experience of millions of individuals practicing a simple, subjective technology called the Maharishi Technology of the Unified Field,³ has shown that human intelligence, like nature's intelligence, has at its basis a unified field of intelligence¹⁸ (see Figure 1). In this most fundamental state of awareness, known as transcendental consciousness or pure consciousness, the knower, the known, and the process of knowing are united in a single, self-interacting structure of experience.^{2,18} The defining characteristics of this field of pure consciousness—e.g., self-referral or self-interaction, pure intelligence, and infinite dynamism—are identical to the essential characteristics of the unified field derived from the Lagrangian of the superstring (see Appendix, entitled “Qualities of the Unified Field”). The most natural conclusion is that the most fundamental level of human intelligence (pure consciousness) and the most fundamental level of nature's intelligence (the unified field) are not independent, but one and the same, providing a profound unification of objective and subjective realms of existence at the level of the unified field.^{17,18}

This unification is easily verified through the Maharishi Technology of the Unified Field, which opens human awareness to the direct experience of pure consciousness, in which the conscious mind is found identified with the unified field of all the laws

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of nature—the infinite, unbounded field of intelligence at the basis of all forms and phenomena in the universe. From this pure, self-referral field of consciousness, all the subjective and objective aspects of existence are directly experienced to emerge as modes of one's own intelligence, establishing pure consciousness as the unified fountainhead of natural law.¹⁸

A further, dramatic confirmation of the fundamental identity of pure consciousness and the unified field is the experimental observation¹⁶ of extended field effects of consciousness resulting from the collective practice of the Maharishi Technology of the Unified Field. Extensive scientific research has shown that even a small proportion of a population (the square root of one percent) collectively practicing the Maharishi Technology of the Unified Field generates a powerful influence of positivity and coherence that extends to society as a whole¹⁶ (see section entitled Unified Field Based Economics). Group practice of the Maharishi Technology of the Unified Field enlivens the evolutionary qualities of the unified field in the collective consciousness of the whole population, transforming the trends of life in society from crime, negativity, war, and suffering to positivity, coherence, progress, and prosperity.^{3,16} These consistent demonstrations of field effects of consciousness, known in the literature as the Maharishi Effect,¹⁶ preclude any superficial understanding of consciousness, and place pure consciousness unambiguously at the level of the unified field.^{17,18}

THE MAHARISHI TECHNOLOGY OF THE UNIFIED FIELD

THE MAHARISHI TECHNOLOGY OF THE UNIFIED FIELD IS A SYSTEMATIC technology which opens human awareness to the direct experience of consciousness in its pure, self-referral state, in which the conscious mind is identified with the unified field of all the laws of nature^{2,3} (see Figure 1). It systematically expands human comprehension to experience and explore more abstract and fundamental levels of intelligence, corresponding to more fundamental and universal levels of nature's intelligence,¹⁷ culminating in the experience of a level of intelligence that is completely universal and unified in its nature—the experience of the unified field itself. Research has shown that this experience of pure consciousness constitutes a fourth major state of consciousness,^{19,20} physiologically distinct from waking, dreaming, and

deep sleep. It is characterized by high EEG coherence,²¹ indicating profound integration and orderliness of brain functioning, together with other unique physiological and biochemical changes.²² Over 430 scientific studies¹⁰⁻¹⁶ conducted at 160 universities and research institutes in 27 countries throughout the world have extensively documented the profound physiological,¹² psychological,¹⁰ and sociological^{15,16} benefits resulting from this fundamental experience, including increased intelligence¹⁰ and creativity,¹¹ improved physical and mental health,¹² improved productivity and job performance,²³ improved job satisfaction,²⁴ and increased longevity.²⁵ The completely holistic nature of these benefits further supports the hypothesis that this subjective technology operates at the most fundamental and holistic level of nature—the level of the unified field.¹⁸

The unified field is the total potential of natural law. In its self-interacting dynamics are contained the mechanics of "symmetry breaking," by which it becomes expressed as the apparently diverse values of the observed elementary particles and forces of nature.¹⁸ During the practice of the Maharishi Technology of the Unified Field, an individual experiences directly the mechanics by which thought arises from the unified field, the field of pure intelligence or pure consciousness of the mind.²⁰ Repeated experience results in an innate familiarity with the laws of nature that govern the transformation of the unified field into its superficially diverse values.^{3,18}

Innumerable laws of nature apply to human life in its natural pursuit of health, happiness, and progress. These laws determine the consequences of our thoughts and actions and thereby either support the fulfillment of our desires or lead us to corrective action. When, through repeated experience of pure consciousness, an individual's awareness becomes identified with the unified field, the total potential of natural law, then he enjoys life spontaneously in accord with all the laws of nature.³ This is to say that the person's thought and action spontaneously are suitable to the environmental context. They meet with no problems, conflict, or resistance, and create no suffering for the individual nor for the society. Taking maximal advantage of the laws of nature, such thoughts and actions are naturally supported by all the laws of nature governing physiological, psychological, and sociological processes.^{3,10-16} They do not set in motion any processes that, even in part, conflict with the intent of the thought and action. This state of human life supported by natural law is possible only

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when the total potential of natural law, the unified field, is fully enlivened in human awareness. No other level of natural law, and no other level of human awareness, is sufficiently holistic that it could comprehend all the laws of nature that affect human life.

To live a life in accordance with natural law has been the goal of moral philosophers²⁶ and thoughtful medical scientists²⁷ throughout history. These scholars have attempted to develop codes of behavior based on intellectual knowledge of the laws of nature. An intellectual approach, however, can at best be incomplete because the totality of all laws of nature is too vast and complex to be understood intellectually. It is nevertheless possible for human awareness to comprehend by direct experience the unified field, the completely holistic level of natural law, from which nature itself spontaneously conducts all activity in the universe.^{2-3,17-20} By repeated experience,²⁰ the mind becomes identified with this field, and thereby develops an innate familiarity with the total potential of natural law upholding life and evolution on all levels of the physical universe. Thought and action become automatically aligned with the evolutionary power of natural law,³ and thereby enjoy the same natural effectiveness and efficiency with which nature governs the universe—with absolute efficiency and economy in accordance with the universal principle of least action.¹⁸

When the total potential of natural law—the unified field—is fully lively in the manager's awareness, the manager's thought and action are automatically aligned with the invincible, evolutionary power of natural law.

In this state of alliance with natural law, an individual can be said³ to enjoy the "fruit of all knowledge:" a life free from mistakes and problems—spontaneously in accord with natural law—in which one enjoys the full support of the evolutionary power of natural law in every phase of one's life and living.

The spontaneous application of the unified field to individual life through the Maharishi Technology of the Unified Field can also be understood simply as the result of the upsurge of all the evolutionary qualities of the unified field in the individual mind as the conscious awareness identifies more and more fully with the unified field (see Appendix). The increased intelligence, creativity, dynamism, self-sufficiency, balance, integration, happiness, and organizing power which result¹⁰⁻¹⁴ from the practice of the Maharishi Technology of the Unified Field are precisely what one would expect when the conscious mind opens to its unified source in the unified field and awakens more and more to the qualities of its own essential nature. These two scientifically validated principles—life in accord with natural law³ and the blossoming of the fundamental qualities of the unified field (see

Appendix)—provide the basic mechanisms which underlie the practical application of the unified field to individual life, as well as to the field of economics.

UNIFIED FIELD BASED ECONOMICS

IN THE FIELD OF ECONOMICS, THE APPLICATION OF THE UNIFIED FIELD is equally spontaneous. Its profound benefits have been established by extensive scientific research conducted at the individual,¹⁰⁻¹⁴ organizational,^{23,24} national,¹⁵ and international scales.¹⁶ The application of the unified field within a business or organization occurs on at least three levels: at the level of the management, of the employees, and of the whole society, that constitutes the overall economic environment in which the individual business exists and operates.

MANAGEMENT

At the managerial level, the application of the unified field is the spontaneous result of the increased intelligence,¹⁰ broad comprehension,²⁸ and spontaneous right action³ of the individual managers practicing the Maharishi Technology of the Unified Field. If the total potential of natural law—the unified field—is fully lively in the manager's awareness, the manager's thought and action will be automatically aligned with the invincible, evolutionary power of natural law. Decisions from this unified level of nature's intelligence are naturally progressive and spontaneously evolutionary, and guide the whole organization in a progressive and evolutionary direction.³

When comprehension is maximally expanded through direct experience of the unified field—the most universal field of intelligence in nature—all the innumerable elements and factors that can affect a business initiative or venture, or which contribute to the success or failure of a business, are naturally comprehended, and the mind spontaneously selects the most progressive and effective course of action. Only in the coexistence of broad comprehension and the ability to focus sharply, which is a direct result of regular practice of the Maharishi Technology of the Unified Field,²⁸ is it possible to spontaneously choose the course of action which is fully evolutionary—of maximum benefit to oneself, one's organization, and the world as a whole.

Again, the spontaneity of thought and action in accordance with natural law is important and deserves further comment.^{3,18} It is not possible to comprehend intellectually the full range of influ-

It is the lack of knowledge of how to act spontaneously in accord with natural law that has made economic success a matter of hit-or-miss, subject to the uncertainties of market fluctuations and environmental influences of which one has little awareness and over which one has limited control.

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ence of all present and future market trends and other environmental influences on a business, or to know the full range of effects of one's own business decisions on the organization, on the general economic environment, and on the nation as a whole. Such detailed knowledge is beyond the computational ability of the mind, and indeed of any existing electronic computer. Hence it is not always possible to determine intellectually the most effective and evolutionary course of action. It is therefore essential to gain the ability to act spontaneously from a level of consciousness that is more fundamental than the intellect—the field of pure consciousness, the unified field of natural law. Such action is automatically aligned with the invincible, evolutionary power of natural law, and thereby represents the most effective and progressive course of action.^{3,18} It is the lack of knowledge of how to act spontaneously in accord with natural law that has made economic success a matter of hit-or-miss, subject to the uncertainties of market fluctuations and environmental influences of which one has little awareness and over which one has limited control.

A business idea which is fully evolutionary—i.e., fully in accord with natural law—is an idea which fulfills a genuine and timely need of society. Being fully evolutionary, it is naturally free of short-term or long-term negative sociological and environmental side effects; hence there are no obstacles to obstruct its immediate progress or to interfere with its long-term success and fulfillment. If, in the course of time, the needs of society change, the unified field based business executive, whose comprehension is broad and whose awareness is established in the unified field, will naturally perceive and respond to that change. The executive is ideally positioned to respond to, and profit from, the evolutionary trends that function within society, accomplishing maximum for him or herself, his organization, and the whole society.

The key to long-term economic success is to always fulfill a genuine, evolutionary need of society, i.e., to remain fully aligned with the invincible, evolutionary power of natural law. This is easily achieved by bringing thought and action spontaneously in accord with natural law through the Maharishi Technology of the Unified Field, so that one always enjoys the full support of all the laws of nature. Only natural law is invincible, governing behavior at all levels of the physical universe. To align oneself with natural law is thus the only means to permanently guarantee economic success in a constantly changing and evolving society. This has been the

direct experience of managers and executives practicing the Maharishi Technology of the Unified Field in major businesses and corporations throughout the world,²⁹ and is documented by scientific research based on objective measures of business success.^{23,24}

Once again, the benefits of the Maharishi Technology of the Unified Field in the area of business management can be understood quite simply³ as the result of the growth of fundamental qualities of the unified field that are essential to business administration (see Appendix). Growth of creativity, intelligence, discrimination, dynamism, integration, balance, self-sufficiency, and organizing power, which have been scientifically shown¹⁰⁻¹⁴ to develop as a result of regular practice of the Maharishi Technology of the Unified Field, constitute the essential characteristics of the successful business executive. It is worth emphasizing that prior to the introduction of the Maharishi Technology of the Unified Field, there had been no educational approach or developmental technology that was capable of improving basic measures of intelligence and creativity, such as intelligence quotient (IQ), field independence, fluency, flexibility, and originality. Intelligence, for example, has been generally considered to be fixed at adolescence, and to undergo a gradual decline beginning around the age of 25 or 30. In contrast, IQ has been shown¹⁰ to increase significantly in longitudinal studies involving university students practicing the Maharishi Technology of the Unified Field, at an age where intelligence is not supposed to change. This simply shows that the science and technology of the unified field provides a more profound and complete understanding and technology of consciousness than has been previously possible based on prior levels of scientific knowledge.

EMPLOYEES

In addition to management, which is responsible for setting the directives and guiding the activities of a business or organization, the Maharishi Technology of the Unified Field has important applications to the employees as well. In the past 25 years, economists have come to recognize the central importance of the quality of a business' or a nation's human resources in contributing to economic growth and development.³⁰ Improvement in the quality of human resources has been shown to play a principal role in promoting economic growth and increasing the standard of living.

Economic theory identifies two fundamental ways to promote economic growth. First, growth can occur by increasing the quan-

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tity of resources used in the production of goods and services. For example, national output can be increased by expanding the labor force, building more factories, adding more computers and other machinery and equipment, or by putting more land into cultivation. Second, growth can be generated by increasing the productivity of these same resources. Increased productivity means that, due to greater production efficiency, more goods and services can be produced with the same quantity of resources (or even less) than before: more output is produced per unit of input.

The importance of productivity improvements in economic growth is highlighted by research on the sources of growth in per-capita national output or GNP, the most widely used measure of the material standard of living. For example, research by John W. Kendrick³¹ indicates that the increase in U.S. per capita GNP over the period from 1948 to 1973 was entirely attributable to productivity improvements; increases in the quantity of inputs to production were only sufficient to prevent the standard of living from declining. Kendrick and Edward Denison³² also established that the major source of productivity growth in the U.S. and many other industrialized countries over long historical periods has been improvements in the quality of human resources due primarily to education and training. In the words of Frederick Harbison,³⁰ "Human resources—not capital, nor income, nor material resources—constitute the ultimate basis for the wealth of nations."

One obvious and important contribution of the Maharishi Technology of the Unified Field to human resource development is in the area of health. According to the Harvard Business Review (July-August, 1985), health benefits are now the third-largest cost element after raw materials and straight-time pay for most manufacturers, and the second-largest expense for most service businesses. It is becoming increasingly common that otherwise profitable businesses are driven into bankruptcy by the spiraling costs of health care. The Maharishi Technology of the Unified Field has been scientifically shown to be a highly effective means of

*The recent Gulf crisis highlights the extreme sensitivity of world economics to events in the political sphere, as well as the vulnerability caused by economic dependence and lack of self-sufficiency faced by every nation today. It clearly demonstrates the failure of existing economic methods and approaches, which do not ensure the overall stability and progressive nature of the

reducing health care costs.³³ Through the regular practice of the Maharishi Technology of the Unified Field, every aspect of the mind, body, and behavior becomes profoundly connected to its unified source in the unified field.^{3,18} As a result, physiological and neurophysiological functioning becomes integrated and balanced.³⁴ The immune system and other homeostatic mechanisms become spontaneously capable of resisting any physiological imbalance or disorder, creating a natural state of health and well-being.¹²

A recent study of health insurance statistics on over 2000 individuals practicing the Maharishi Technology of the Unified Field found that their doctor's visits and hospitalizations were less than half that of other groups of comparable age, sex, and profession.³³ Improvements were observed in every major disease category, including an 87% drop in cardiovascular illness and 87% less incidence of nervous disorders and diseases of the nervous system. These and numerous other studies^{12,22} on the physiological, neurophysiological, and psychological benefits of the Maharishi Technology of the Unified Field make this technology the most thoroughly validated and effective means of health-care prevention. The annual health care expenditure in the U.S. alone at the federal, state and private sector levels was \$600 billion in 1989, and is projected by the U.S. Department of Health and Human Services to exceed \$1 trillion by 1995. The estimated³⁵ savings in health care costs for the U.S. which would result from the widespread use of the Maharishi Technology of the Unified Field amounts to hundreds of billions of dollars annually.

Other scientifically established benefits of the Maharishi Technology of the Unified Field in the areas of human resource development include increased creativity,¹¹ intelligence¹⁰ and learning ability,¹³ improved optimization of brain functioning as measured by EEG coherence and topographical brain mapping,²¹ broader comprehension along with ability to focus,²⁸ improved academic performance,¹³ development of personality,^{10,19} reduced negative traits,¹⁴ decreased anxiety³⁶ and improved recovery from stress,³⁷ and reduced use of alcohol, tobacco and both non-prescribed and prescribed drugs.¹⁴ Further applications in business settings include increased productivity,²³ improved job performance and job satisfaction,²⁴ reduced absenteeism,²⁴ and improved relations with co-workers and supervisors.²⁴ The Maharishi Technology of the Unified Field has also been shown to be highly effective against stress associated with high-level management responsibilities, as well as stress and frustration born of

Most remarkably, the Maharishi Technology of the Unified Field has direct application at the societal level. Specifically, it has been scientifically shown to be fully capable of affecting and improving the whole social, political, and economic climate in which all businesses exist and operate.

Group practice of the Maharishi Technology of the Unified Field by as few as the square root of one percent of a population produces a powerful influence in the collective consciousness of the whole society, leading to measurable and often dramatic reductions in crime rate, accident rate, sickness, and other measures of societal incoherence, and to an upsurge in positive trends throughout the

routine work.^{36,37}

By increasing creativity, intelligence, job performance and job satisfaction, and by improving health and reducing susceptibility to stress, the Maharishi Technology of the Unified Field provides the single, most effective and thoroughly documented means of developing full physical and mental potential, and of thereby developing human resources, which are the principal factor in the success of any organization or of the nation as a whole.

SOCIO-ECONOMIC ENVIRONMENT

Finally, and perhaps most remarkably, the Maharishi Technology of the Unified Field has direct application at the societal level. Specifically, it has been scientifically shown to be fully capable of affecting and improving the whole social, political, and economic climate in which all businesses exist and operate.¹⁵ Any business exists within the broader context of a national and global socio-economic environment. Business analysts are well aware of how their organizations are influenced by trends in this environment, such as inflation rates, unemployment rates, economic cycles, social unrest, and international conflict.* Few analysts, however, are aware of how their organizations, rather than being a victim of these environmental circumstances, can powerfully change these trends in a positive direction for the benefit of the organization and the whole society.

Research on the Maharishi Technology of the Unified Field,^{15,16} together with the direct personal experience of millions of individuals throughout the world, has shown that consciousness, in its most basic and universal aspect, is a field phenomenon.¹⁷ This finding is fully consistent with other major developments in scientific knowledge which have shown that everything in nature, including all the elementary particles and forces, are simply manifestations of fundamental fields.⁶⁻⁸ All of these fields, in turn, have been shown^{1,9} to arise from a single field—the unified field of all the laws of nature—which is the unified source of all subjective and objective phenomena in nature (see Figure 1). The specific content of human experience—sensations, thoughts, feelings, etc.—is, of course, intimately tied to localized electrochemical and electrophysiological processes in the brain. However, the phenomenon of consciousness itself—the essential subjectivity or liveliness of experience—is not a product of the nervous system: it is a much deeper phenomenon, which has its ultimate origin at the most fundamental level of nature's dynamics—the level of

the unified field itself.^{3,17,18}

If, as the latest research shows, consciousness ultimately has a field-theoretic origin, then one would expect phenomena of consciousness to include effects that are inherently nonlocal or field-like in nature. This prediction was made as early as 1960 by Maharishi Mahesh Yogi,³⁸ based on his own understanding and experience of the nature and dynamics of consciousness and on the Vedic tradition of knowledge which he represents. This prediction has since been verified by more than 35 consecutive experiments which have appeared in leading scientific journals.^{15,16} These studies have shown that the subjective experience of the unified field by an individual or by a group of individuals practicing the Maharishi Technology of the Unified Field produces a measurable influence of positivity and coherence in the collective consciousness of the surrounding population. That is, the state of high EEG coherence which is characteristic of individual experience of the unified field is not entirely confined within the central nervous system, but also has a nonlocal or field-theoretic component. Moreover, the intensity of this long-range component grows approximately as the square of the number of subjects practicing as a group, as one would expect on the basis of field-theoretic arguments.¹⁸ As a consequence of this powerful N^2 behavior, the group practice of the Maharishi Technology of the Unified Field by as few as the square root of one percent of a population produces a powerful influence of positivity and coherence in the collective consciousness of the whole society, leading to measurable and often dramatic reductions in crime rate, accident rate, sickness, and other measures of societal incoherence, and to an upsurge in positive trends throughout the whole society.^{3,16}

One especially critical experimental test of the hypothesis that the group practice of the Maharishi Technology of the Unified Field by the square root of one percent of a population would positively affect sociological measures was conducted in Israel in August and September of 1983.³⁹ Based on the results of previous experiments, the research hypotheses and the specific measures to be used in the study were lodged in advance of the experiment with an independent review board of scientists in the U.S. and Israel.

It was predicted that the group practice of the Maharishi Technology of the Unified Field in Jerusalem would reduce stress in the collective consciousness of Israel and Lebanon. Box-Jenkins ARIMA intervention, cross correlation, and transfer function analyses were used to study the effects of changes in the size of the

There is now a scientifically established means of eliminating violence, negativity, war, and terrorism, even in recalcitrant areas where political and negotiated settlements have repeatedly demonstrated their inability to do so.

Any organization or business of sufficient size can, through group practice of the Maharishi Technology of the Unified Field, not only maximize its own internal efficiency and its use of human resources, but can actually improve in a demonstrable way the entire national economic environment in which the organization functions.

group on several variables and composite indices reflecting the quality of life in Jerusalem and Israel, and also the war in Lebanon.

The study found a striking correlation between the size of the group of experts practicing the Maharishi Technology of the Unified Field and a composite index of quality of life that was the arithmetic average of standardized scores for crime rate, traffic accidents, fires, stock market, national mood, and the number of war deaths as a measure of war intensity in Lebanon. Increases in the size of the group had a statistically significant effect on the individual variables and on the composite quality-of-life index. Cross correlations and transfer functions indicated that the group had a leading relationship to change in the quality-of-life indicators, supporting a causal interpretation. There was a 34% reduction in war intensity and a 76% reduction in war deaths during periods of high numbers of participants. Time series analysis also showed that the effect could not be attributed to seasonality (such as weekend effects or holidays) or to changes in temperature.^{39, 40}

The hypothesis that this influence occurred at a fundamental and holistic level of nature—the level of the unified field—is supported by the fact that the arithmetic average of the different measures produced the clearest results and by the observation that the different sociological measures tended to change independently of each other when the group size was small, but all changed coherently in a positive direction as the group size was increased. The completely holistic nature of the effect, together with the fact that electromagnetic and other proposed mechanisms within the 3+1 dimensional structure of classical spacetime appear unable to account for the large distances and effect size, establishes the Maharishi Effect as an inherently unified field-theoretic phenomenon, resulting from the enlivenment of the unified field in the collective consciousness of society.¹⁸ Indeed, the collective effects of the Maharishi Technology of the Unified Field are most easily understood³ as a natural consequence of the upsurge of the evolutionary qualities of the unified field, such as infinite creativity, infinite correlation, harmony and abundance, in the collective consciousness of the whole society (see Appendix, entitled "Qualities of the Unified Field").

This study, combined with numerous subsequent published studies,¹⁶ has confirmed the efficacy of the Maharishi Effect to a degree of statistical confidence that is unprecedented in the social sciences, and rare even in the physical sciences, placing this effect

among the most well-established phenomena in the 400-year history of scientific investigation. Practically, it means that there is now a scientifically established means of eliminating violence, negativity, war, and terrorism, even in recalcitrant areas where political and negotiated settlements have repeatedly demonstrated their inability to do so. This effect can be easily produced by as few as the square root of one percent of the affected population, or as few as 7000 individuals for a permanent state of peace, international harmony, and cooperation on a global scale.

One would expect that increased coherence in the collective consciousness of society, reduction of the threat of war and violence, reductions in accident and illness rate, and the upsurge of fundamental qualities such as intelligence and creativity would create a more positive and stable environment for economic growth and prosperity. This natural hypothesis has been the subject of extensive investigation.¹⁵ Early studies seeking signs of increased affluence and economic productivity due to collective practice of the Maharishi Technology of the Unified Field, including the Israel study cited earlier,³⁹ noted rising stock market prices, increased strength of the national currency on the international market, and increased patent applications as a sign of increased creativity. The most recent and sophisticated studies¹⁵ have used time series analysis to study the effects of group practice on Okun's "misery index" of inflation and unemployment. In a ten-year study of the U.S. and Canadian economies between 1979 and 1988,¹⁵ time series impact assessment analysis found a sizable and statistically significant reduction of the misery index caused by a group of 1600 experts practicing the Maharishi Technology of the Unified Field—approximately the square root of one percent of the combined U.S. and Canadian population. After controlling for supply-side shocks, aggregate demand and the business cycle, the reduction in the misery index that was directly attributed to the coherence-creating group was 4.23 points, increasing to 5.62 points during periods when the size of the group increased to 1700 or more. The statistical likelihood that this result was due to chance was less than 5 in 100,000 ($p < .00005$).¹⁵ Numerous other improvements in quality-of-life indicators in the United States and Canada during this same time period were also strongly correlated with the daily number of participants in the coherence-creating group.

*See footnote, page 12.

A unified field based manager will automatically guide the organization in the most progressive and evolutionary direction, achieving maximum for the organization and for society as a whole.

The national economic benefits resulting from even one such unified field based organization have been established by numerous scientific studies of inflation, unem-

Providing a practical and proven formula for ensuring fulfilling economic progress, the science and technology of the unified field will raise the quality of life in society to a level of dignity, economic self-sufficiency, and supreme fulfillment which is unparalleled in the annals of recorded history.

These empirical studies show that creating coherence in national consciousness through group practice of the Maharishi Technology of the Unified Field by as few as the square root of one percent of the population provides a simple and practical means of improving national productivity and economic performance. This means that any organization or business of sufficient size can, through group practice of the Maharishi Technology of the Unified Field, not only maximize its own internal efficiency and its use of human resources, but can actually improve in a demonstrable way the entire national economic environment in which the organization functions. By training or hiring experts in the Maharishi Technology of the Unified Field, any organization can become a source of coherence and creativity for the social and economic environment of the nation, or, if the group exceeds the square root of one percent of the world's population (about 7000 individuals), for the world as a whole. This offers to any organization or to any government a proven, practical means of achieving its economic aspirations, and of creating and sustaining an economic climate that will ensure stability, self-sufficiency, and unrestricted progress for as long as the group is maintained.

These results provide a striking example of how the application of more advanced and complete scientific knowledge of natural law—i.e., the knowledge of the unified field—produces more fundamental and powerful effects, including effects which were inconceivable based on previous levels of scientific knowledge. The completely positive and holistic nature of these benefits on the physiological, psychological, and sociological levels is a direct result of the more complete and holistic nature of scientific knowledge available at the level of the unified field.

SECTION SUMMARY

The previous paragraphs describe three levels of application of the Maharishi Technology of the Unified Field within an individual business or organization: the level of the management, of the employees, and of the national economic environment. The application to management is primarily through the increased intelligence and expanded comprehension of the managers practicing the Maharishi Technology of the Unified Field. By raising human intelligence to the level of nature's intelligence—the level of the unified field—thought and action are brought spontaneously into accord with natural law, so that all decisions automatically gain the support of all the laws of nature. Such a unified field based manager,

who is fully aligned with the invincible, evolutionary power of natural law, will automatically guide the organization in the most progressive and evolutionary direction, achieving maximum for the organization and for society as a whole. At the level of the employees, extensive scientific research has shown that the Maharishi Technology of the Unified Field provides the most effective means of developing the full mental and physical potential of the individual, thereby allowing maximum use of an organization's human resources. This in turn leads to substantial savings in the areas of health care, substance abuse, turnover, replacement costs, disability payments, absenteeism, errors, antagonistic behavior, and other human problems that cost organizations billions of dollars annually. On the level of the national economic environment, the group practice of the Maharishi Technology of the Unified Field by the square root of one percent of a nation's population has been scientifically shown to eliminate stress in the collective consciousness of society, to reduce negative trends, and to enliven the evolutionary qualities of the unified field, resulting in the growth of positive trends throughout the society.

The national economic benefits resulting from even one such unified field based organization have been established by numerous scientific studies of inflation, unemployment, and other major economic indicators.¹⁵ When more organizations adopt the Maharishi Technology of the Unified Field as part of their management approach and/or employee health benefits, nations everywhere will begin to enjoy unprecedented progress—freed from the uncertainties of collective stress, international conflict,* and market instabilities—leading to economic security, abundance, and national self-sufficiency, with greater affluence and prosperity for every citizen.

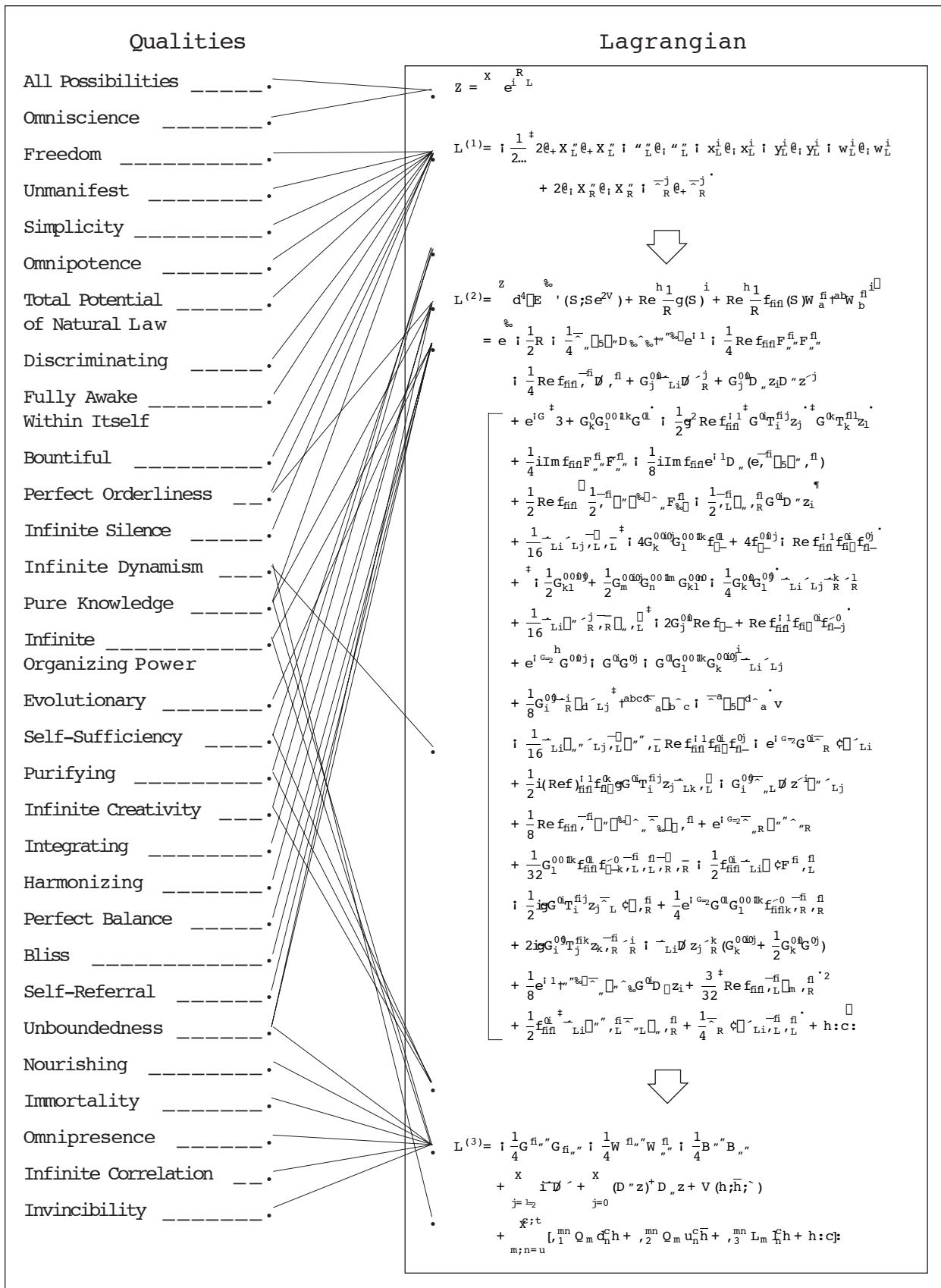
FULFILLMENT OF ECONOMICS

THE PURPOSE OF ECONOMICS IS TO SECURE THE MATERIAL SAFETY and comfort of individuals everywhere, providing the material basis for unrestricted personal growth and fulfillment. The fulfillment of every individual can therefore be seen as the ultimate goal of economics. Fulfillment in life is ensured by the Maharishi Technology of the Unified Field on two separate levels: on the level of outer material affluence, as discussed in the previous sections of this paper, and also directly on the level of one's inner experience of life. Inner fulfillment is achieved by establish-

ing one's awareness in the unified field, which is scientifically and experientially known to be a field of infinite satisfaction, inner expansion, and bliss (see Appendix). Being the field of unbounded intelligence, infinite creativity, and infinite organizing power of nature, it represents the most expanded state of the mind and the ultimate goal of evolution of consciousness. The craving for material wealth that has gripped the world in search of fulfillment will therefore be satisfied on two levels: 1) by the growing ability to fulfill one's material desires through development of human intelligence and creativity, and 2) through the growth of inner fulfillment which spontaneously results when the conscious mind identifies with the unified field, the field of infinite bliss. The ultimate goal of economics to provide fulfillment is thereby achieved through the Maharishi Technology of the Unified Field by developing a state of inner and outer fulfillment.⁴¹

The spontaneous application of the unified field to enrich all aspects of life contrasts with the previous, technological application of specific, isolated laws of nature based on the intellectual understanding of those laws. It was this scientific understanding of specific laws of nature and their technological application which laid the foundation for the industrial revolution, in which more and more rapid progress became possible through the use of increasingly sophisticated machines and technologies. The industrial revolution has, however, led to a highly machine-dependent civilization, to a degree that has robbed life of some of its natural self-sufficiency and dignity. In contrast, the discovery of the unified field and its practical application through the Maharishi Technology of the Unified Field allows the spontaneous utilization of the total potential of natural law to enrich all aspects of life in a completely balanced and holistic way.¹⁸

This spontaneous utilization of the total potential of natural law, as compared to the technological application of specific, isolated laws of nature, lays the foundation for a post-industrial revolution to a unified field based civilization—a civilization based on the complete knowledge and practical utilization of the unified field of natural law. The application of this complete science and technology of the unified field to health, education, rehabilitation, economics, and world peace have already demonstrated their capacity to produce a quality of life and civilization which is far beyond that which was possible based on previous levels of scientific knowledge.¹⁰⁻¹⁶ Providing a practical and proven formula for ensuring fulfilling economic progress, the science and technology



of the unified field will raise the quality of life in society to a level of dignity, economic self-sufficiency, and supreme fulfillment which is unparalleled in the annals of recorded history—a unified field based ideal civilization in which life everywhere is supported by the invincible, evolutionary power of natural law, and all citizens enjoy a state of inner and outer affluence—Heaven on Earth.

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WE ARE GRATEFUL TO MAHARISHI MAHESH YOGI FOR PROVIDING the systematic, applied technologies which have allowed the practical application of this most advanced scientific knowledge of natural law for the benefit of mankind. We also wish to thank Ken Cavanaugh, Kurleigh King, and Robert Wynne for valuable comments and discussions.

APPENDIX: QUALITIES OF THE UNIFIED FIELD

THE ESSENTIAL CHARACTERISTICS OF THE UNIFIED FIELD ARE derived below from a detailed analysis of the Lagrangian of the superstring. The Lagrangian represents the most compact mathematical expression of the detailed structure of the unified field—its symmetries, components, and self-interaction.

In order to facilitate the derivation of the essential characteristics of the unified field, the Lagrangian is presented in several stages of its sequential unfoldment (see Figure 2). This sequential unfoldment begins with the abstract Lagrangian of the superstring itself which, although valid at all time and distance scales, is especially relevant to physics at the superunified scale. This is followed by the Lagrangian of an $N=1$ locally supersymmetric point particle theory, which is the low-energy effective field theory obtained from the massless modes of the string. This Lagrangian is presented in both its manifestly supersymmetric, superfield formulation as an integral over superspace variables and in its more elaborated component form. Finally, we present the Lagrangian of the standard $SU(3)\times SU(2)\times U(1)$ theory of the strong, weak, and electromagnetic forces relevant to physics at ordinary scales. Every stage in the sequential unfoldment of the laws of nature from the unified field has its corresponding Lagrangian, bringing to light new qualities of the unified field which were present but unexpressed at the level of the super-

string.

DERIVATION

1 ALL POSSIBILITIES: All possible worldsheet topologies and all possible field histories contribute to the superstring partition function Z , which embodies the complete dynamics of the quantized theory.

1 OMNISCIENCE: The partition function simultaneously computes all possible world histories P and their associated actions $\int L(P)$ in determining the quantum-mechanical evolution of the system.

1 FREEDOM: In the free-fermionic formulation, the unified field is comprised of free, non-interacting bosonic and fermionic degrees of freedom defined on the superstring.

1 UNMANIFEST: The fundamental bosonic and fermionic string degrees of freedom remain unmanifest—they do not appear as particles in the physical spectrum.

1 SIMPLICITY: The entire, diversified structure of natural law emerges sequentially from the simple, unified dynamics of a relativistic quantum string.

1 OMNIPOTENCE: The laws governing the dynamics of the unified field are absolute and invincible. The low-energy effective field theories governing physics at larger scales are merely partial reflections of, and approximations to, the total potential of natural law available at the level of the superstring.

1 TOTAL POTENTIAL OF NATURAL LAW: All the massive and massless string modes are fully enlivened as dynamical degrees of freedom at the Planck scale.

1 DISCRIMINATING: The boundary conditions of the 4-D string construction discriminate among thousands of possible string vacua.

1 FULLY AWAKE WITHIN ITSELF: The zero-point motion (quantum fluctuations) of the unified field reaches its ultimate level of dynamism at the Planck scale.

REFERENCES:

1 BOUNTIFUL: The energy eigenspectrum of the quantized string field contains an infinite tower of massive string modes in addition to all the massless modes responsible for the observable universe.

1 INFINITE SILENCE: Expressed by the non-interacting nature of the fundamental string degrees of freedom.

1 INFINITE DYNAMISM: Expressed by the dynamical interaction of all the various fields appearing in the effective low-energy theories derived from the superstring.

1 PURE KNOWLEDGE: The Lagrangian represents the most compact mathematical expression of the complete structure of the laws of nature at every level.

1 INFINITE ORGANIZING POWER: The Hamiltonian operator, derived from the Lagrangian by a Legendre transformation, dynamically generates all activity in the universe.

1 EVOLUTIONARY: The Hamiltonian operator generates the time evolution of the universe.

1 PERFECT ORDERLINESS: Reflected in the superconformal invariance, local supersymmetry, and gauge symmetries of the Lagrangian.

1 SELF-SUFFICIENCY: The structure and dynamics of the unified field is sufficient within itself to initiate spontaneous gauge and supersymmetry breaking radiatively, leading to the sequential unfoldment of the diversified structure of natural law illustrated in the chart.

1 PURIFYING: Broken symmetries are successively restored at more fundamental spacetime scales, ensuring the consistency and renormalizability of the theory.

1 INFINITE CREATIVITY: The fountainhead of natural law—from this unified source, all the particles and forces of nature emerge through a sequential process of spontaneous symmetry breaking.

1 INTEGRATING: The gravitino dynamically upholds local supersymmetry, which integrates the different spin components of the

various supermultiplets, maintaining the unbroken wholeness of the superfields.

1 HARMONIZING: Supersymmetry unifies completely opposite values—bose and fermi fields—within the context of a single superfield.

1 PERFECT BALANCE: Supersymmetry—the perfect balance of bosonic and fermionic degrees of freedom.

1 BLISS: Expressed by the continuous effervescence of topological fluctuations at the Planck scale (“spacetime foam”) spontaneously arising from the non-perturbative dynamics of quantum gravity.

1 SELF-REFERRAL: The non-Abelian property of self-interaction of the vector fields responsible for local gauge symmetry. This property of self-interaction is also found in all the other spin components, including the graviton, gravitino, chiral fermions, and scalar fields.

1 UNBOUNDEDNESS: The Poincare invariance of the Lagrangian density.

1 NOURISHING: A non-Abelian gauge field dynamically upholds the unified structure of all its individual components.

1 IMMORTALITY: The time-translational invariance of the Lagrangian density.

1 OMNIPRESENCE: The translational invariance of the Lagrangian density reveals that the total structure of the unified field is present everywhere, and is not restricted by any finite boundaries.

1 INFINITE CORRELATION: The seemingly fragmented structure of the Standard Model arises from and reflects the infinite correlation and balance of its unified origin in the superstring, giving rise to relations between couplings (e.g., m_b/m_t and $\sin^2\theta_W$), electric charge quantization, and freedom from gauge and gravitational anomalies.

1 INVINCIBILITY: A non-Abelian gauge field dynamically upholds

its own invariance under local symmetry transformations.

ALL THESE BEAUTIFUL, EVOLUTIONARY QUALITIES OF the unified field blossom in individual and collective life through the Maharishi Technology of the Unified Field, which opens human awareness to the direct experience of consciousness in its self-referral state, pure consciousness, where consciousness is found identified with the unified field of all the laws of nature.

The enlivenment of all these qualities in world consciousness was profoundly demonstrated by the improved quality of world events when 7000 experts in the Maharishi Technology of the Unified Field (approximately the square root of one percent of the world's population) gathered at Maharishi International University from December 17, 1983 to January 6, 1984. Over 35 scientific studies^{15,16} analyzing this and other subsequent assemblies have rigorously verified the practical formula to create a unified field based ideal civilization, a civilization based on complete knowledge and practical utilization of the unified field of natural law.

1. J.H. Schwarz, Phys. Rep. 89 (1982) 223;

- M.B. Greene, *Surv. in High Energy Phys.* 3 (1983) 127.
2. K. Chandler, *Modern Science and Vedic Science* 1 (1987).
 3. Maharishi Mahesh Yogi, *Life Supported by Natural Law, Age of Enlightenment Press, Washington, DC (1986); Maharishi Vedic University Inauguration, Age of Enlightenment Press, Washington, DC (1985).*
 4. *Power Engineering* 9 2 (1988) 7.
 5. B.R. Nair, *Mechanical Engineering* 1 1 1 (1989) 52.
 6. S. Weinberg, *Phys. Rev. Lett.* 19 (1967) 1264;
A. Salam, in *Elementary Particle Theory: Relativistic Groups and Analyticity (Nobel Symposium No. 8)*, edited by N. Svartholm (Almqvist and Wiksell, Stockholm, 1968).
 7. H. Georgi and S.L. Glashow, *Phys. Rev. Lett.* 3 2 (1974) 438.
 8. P. Fayet, in *Unification of the Fundamental Particle Interactions*, edited by S. Ferrara, J. Ellis and P. van Nienwenhuizen, Plenum, NY (1981) 587, and references therein.
 9. I. Antoniadis, J. Ellis, J.S. Hagelin and D.V. Nanopoulos, *Phys. Lett.* 194 B (1987) 231, 208 B (1988) 209 and 231 B (1989) 65;
B. Greene, K.H. Kirklin, P.J. Miron and G.G. Ross, *Phys. Lett.* 180 B (1986) 69; *Nucl. Phys.* B 278 (1986) 668 and B 292 (1987) 606;
R. Arnowitt and P. Nath, *Phys. Rev.* D 39 (1989) 2006; *Phys. Rev. Lett.* 60 (1988) 1817 and 62 (1989) 1437, 2225; Texas A&M University preprints CTP-TAMU-74/88 (1988) and 36/89 (1989);
L.E. Ibanez, J.E. Kim, H.P. Nilles and F. Quevedo, *Phys. Lett.* 191 B (1987) 282;
L.E. Ibanez, J. Mas, H.P. Nilles and F. Quevedo, *Nucl. Phys.* B 301 (1988) 157;
A. Font, L.E. Ibanez, H.P. Nilles and F. Quevedo, *Phys. Lett.* 210 B (1988) 101;
J.A. Casas, E.K. Katehou and C. Munoz, *Nucl. Phys.* B 317 (1989) 171;
J.A. Casas and C. Munoz, *Phys. Lett.* 209 B (1988) 214; 212 B (1988) 343 and 214 B (1988) 63;
D. Bailin, A. Love and S. Thomas, *Phys. Lett.* 194 B (1987) 385; *Nucl. Phys.* B 298 (1988) 75.

10. M.C. Dillbeck, D.W. Orme-Johnson and R.K. Wallace, *International Journal of Neuroscience* 15 (1981) 151;
 A. Jedrczak, M. Toomey and G. Clements, *Journal of Clinical Psychology* 42 (1986) 151;
 L.A. Hjelle, *Perceptual and Motor Skills* 39 (1974) 623;
 M.J. Turnbull and H. Norris, *British Journal of Psychology* 73 (1982) 57;
 S.I. Nidich, P. Moulin, F. Travis and R.J. Nidich, Department of Education, Maharishi International University (1987);
 D.W. Orme-Johnson and B. Granieri, in *Scientific Research on the Transcendental Meditation and TM-Sidhi Programme: Collected Papers Vol. 1*, MERU Press, Livingston Manor, NY (1977) 713.
11. F. Travis, *Journal of Creative Behavior* 13 (1979) 169;
 D.W. Orme-Johnson and C.T. Haynes, *International Journal of Neuroscience* 13 (1981) 211;
 H.E. Shecter, *Dissertation Abstracts International* 38, 7B (1978) 3372;
 D.W. Orme-Johnson, G. Clements, C.T. Haynes and K. Badawi, in *Scientific Research on the Transcendental Meditation and TM-Sidhi Programme: Collected Papers Vol. 1*, MERU Press, Livingston Manor, NY (1977) 705.
12. D.W. Orme-Johnson, *Psychosomatic Medicine* 49 (1987) 493;
 R. H. Schneider et al., *Proceedings of the International College of Psychosomatic Medicine* (in press);
 R.K. Wallace, J. Silver, P.J. Mills, M.C. Dillbeck and D.E. Wagoner, *Psychosomatic Medicine* 45 (1983) 41;
 M.J. Cooper and M.M. Aygen, *Journal of Human Stress* 5 (1979) 24;
 R.K. Wallace, M. Dillbeck, E. Jacobe and B. Harrington, *International Journal of Neuroscience* 16 (1982) 53;
 B. Blackwell, I.B. Hanenson, S.S. Bloomfield, H.G. Magenheimer, S.I. Nidich and P. Gartside, *Psychosomatic Medicine* 37 (1975) 86;
 R.W. Honsberger and A.F. Wilson, *Clinical Research* 21 (1973) 278;
Respiration Therapy: The Journal of Inhalation Technology 3 (1973) 79.
13. S. Appelle and L.E. Oswald, *Perceptual and Motor Skills* 38 (1974) 1263;
 M.J. Turnbull and H. Norris, *British Journal of Psychology* 73 (1982) 57;
 M.C. Dillbeck, *Memory and Cognition* 10 (1982) 207;