

INTRODUCTION TO VOLUME 4

By Roger Chalmers, M.A. (Cantab.), M.B., B.Chir., M.R.C.P.

Vice-Chancellor, Maharishi European Research University,
Seelisberg, Switzerland

A GLOBAL TASTE OF UTOPIA: VERIFYING THE FORMULA FOR CREATING UNIFIED FIELD BASED PERFECT CIVILIZATION

Great men in every age have dreamed of creating an ideal civilization, in which man could enjoy the unrestricted expression of his creativity, free from problems, suffering, and weakness. With this goal in mind, the wise have looked at the majesty of the universe, and at the flawless precision with which the laws of nature administer every aspect of creation, and have wondered how man might adopt the supreme intelligence of nature for the administration of his own affairs.

It is the special dignity of the fourth volume in this series to record the experimental evidence that the means for harnessing the total potential of natural law are now in our grasp. The Maharishi Technology of the Unified Field, developed in 1983 by His Holiness Maharishi Mahesh Yogi, provides us with the formula for enriching all levels of life from the most basic field of existence—the unified field of all the laws of nature—the source of all the diverse manifestations of natural law which make up the universe.

In the introduction to *Collected Papers, Volume 3* the events leading up to the development of the Maharishi Technology of the Unified Field were discussed. Research contained in the present volume now documents the successful application of the Maharishi Technology of the Unified Field to enliven the evolutionary qualities of the unified field in the collective consciousness of the entire world, bringing to all mankind a sample taste of utopia. This practical demonstration presents us with the formula for the realization of mankind's most exalted goals in the creation of unified field based perfect civilization throughout the world.

The Progress of Research on Higher States of Consciousness

The publication of the fourth volume of collected research papers on the Transcendental Meditation and TM-Sidhi programme, following less than a year after the preceding volume, gives an indication of the rapidity with which all aspects of research in this field are now progressing. The early completion of Volume 4 was also made imperative by the importance of the studies it contains relating to the large-scale sociological effects of the development of higher consciousness.

The first volume of this series served to illustrate something of the extraordinary range and depth of the benefits of the Transcendental Meditation and TM-Sidhi programme. In the

introduction to Volume 1, Dr Lawrence Domash discussed the significance for science of Maharishi's work in bringing to light systematic procedures for the unfoldment of the full potential of human consciousness.

The papers contained in Volumes 2 and 3 confirmed and extended the findings of earlier research and advanced our understanding of the mechanisms underlying the effects of Transcendental Meditation. In the introductions to these volumes, the progression of research on higher states of consciousness was examined in the light of the history of Maharishi's worldwide Transcendental Meditation movement. A central theme of this analysis was the mutually enriching interaction of the growth of experiences of higher states of consciousness, advances in both theoretical and experimental research, and new developments in the application of the Transcendental Meditation and TM-Sidhi programme in different areas of human concern. As we shall discuss, the interplay of these factors has continued to be prominent in the events of recent months.

Among the most significant developments considered in this historical review were those relating to the Maharishi Effect, whereby even a small fraction of a population practising the Transcendental Meditation and TM-Sidhi programme creates a powerful influence of orderliness and integration throughout the whole society. The present volume has special importance in this context, since it brings together more than 20 research papers on this phenomenon.¹ These studies employ a wide variety of experimental designs and have been conducted on population groups ranging in size from cities to states, nations, and, most recently, the world as a whole. These papers document the great progress that has been made both in the systematic application of the Maharishi Effect to raise the quality of life in society, and in the sophistication of research in this field.

A particularly notable discovery reported here is that the influence of orderliness and coherence created in society by the practice of Transcendental Meditation is greatly enhanced by the addition of the TM-Sidhi programme, especially when practised collectively. With the group practice of the Transcendental Meditation and TM-Sidhi programme, the level of participation required to generate the Maharishi Effect in a province or nation has been found to be approximately the square root of one percent of the total population,² as compared to about one percent when participants are practising only the Transcendental Meditation technique.

The study that forms the centrepiece of this volume is the climax of a decade of research on the Maharishi Effect. In terms of the grand scale and outstanding success of the undertaking and the significance of its implications for mankind, this study may also be seen as the most important event in the history of science to date. The background to this project is best appreciated with reference to the historical progression of research on the development of consciousness, for a detailed discussion of which the reader is invited to consult the introduction to

1. Please refer to the introduction to the section on 'Quality of Life' in this volume.

2. A slightly larger percentage is required for small populations.

Volume 3. Of most immediate relevance is the development in 1983 of the Maharishi Technology of the Unified Field, a unique synthesis of the theoretical understanding of the unified field of all the laws of nature provided by modern science, and the practical procedures for directly experiencing and enlivening the unified field in human awareness,³ as brought to light from ancient Vedic Science by Maharishi.

With the availability of this technology for utilizing the total potential of natural law, the way has been opened for man to rise above the limitations which have restricted his fulfilment and develop a perfect civilization based upon the knowledge of the unified field. Equipped with this knowledge, the World Government of the Age of Enlightenment made a startling announcement in August 1983, offering to solve the problems of any government, regardless of the magnitude or nature of the problems, and independent of the system of administration in operation in the nation.⁴

A Global Taste of Utopia

In order to demonstrate the practicality of this undertaking, Maharishi International University (MIU) co-ordinated a single grand experiment designed to give the world a sample taste of utopia. In this project, conducted between 17th December 1983 and 6th January 1984, more than 7000 experts in the Maharishi Technology of the Unified Field⁵ from over 50 countries assembled in the presence of His Holiness Maharishi Mahesh Yogi at the central campus of MIU in Fairfield, Iowa, U.S.A. In the weeks preceding the Assembly, announcements were made in the major national and international press throughout the world explaining the nature of the experiment. The text of this announcement appears on the following pages.⁶

3. These procedures include the Transcendental Meditation and TM-Sidhi programme.

4. The text of this announcement, which appeared in the world's leading newspapers and news magazines, is reprinted in the introduction to Volume 3.

5. Slightly more than the square root of one percent of the world's population.

6. The following newspapers and news magazines were among those which carried this announcement—U.S.A.: *Time*, 19 Dec. 1983; *Newsweek*, 19 Dec. 1983; *Washington Post*, 5 Dec. 1983; *New York Times*, 12 Dec. 1983; *Wall Street Journal*, 19 Dec. 1983 (European edition) and 20 Dec. 1983 (Asian edition); *Diplomatic World Bulletin* (United Nations), 19 Dec. 1983; *Los Angeles Times*, 19 Dec. 1983; *San Francisco Chronicle*, 16 Dec. 1983; *Chicago Tribune*, 15 Dec. 1983; *Miami Herald*, 15 Dec. 1983 (Miami edition) and 16 Dec. 1983 (international edition); *Boston Globe*, 16 Dec. 1983; *Detroit Free Press*, 5 Dec. 1983; *Atlanta Journal*, 14 Dec. 1983; *Atlanta Constitution*, 14 Dec. 1983; *Minneapolis Star and Tribune*, 16 Dec. 1983; *Indianapolis Star*, 8 Dec. 1983; *St. Louis Post Dispatch*, 16 Dec. 1983; *St. Louis Globe*, 14 Dec. 1983; *Denver Post*, 16 Dec. 1983; *Philadelphia Inquirer*, 16 Dec. 1983; *Seattle Times*, 19 Dec. 1983. **Canada:** *Toronto Globe and Mail*, 16 Dec. 1983; *Ottawa Citizen*, 16 Dec. 1983; *Montréal La Presse*, 20 Dec. 1983. **England:** *The Economist*, 17 Dec. 1983; *The Times*, 9 Dec. 1983; *The Daily Telegraph*, 12 Dec. 1983; *The Guardian*, 17 Dec. 1983; *New Scientist*, 15 Dec. 1983; *Middle East*, Jan. 1984; *South*, Jan. 1984; *New African*, Jan. 1984; *West Africa*, 19 Dec. 1983. **Germany:** *Stern*, 29 Dec. 1983; *Die Welt*, 21 Dec. 1983; *Süddeutsche Zeitung*, 21 Dec. 1983; *Handelsblatt*, 20 Dec. 1983. **Switzerland:** *Tribune de Genève*, 24 Dec. 1983; *Tagesanzeiger*, 27 Dec. 1983. **France:** *International Herald Tribune*, 9 and 14 Dec. 1983. **Brazil:** *Veja*, 14 Dec. 1983; *O Globo*, 18 Dec. 1983; *Journal do Brasil*, 18 Dec. 1983; *Correio Brasiliense*, 15 Dec. 1983; *O Estado de São Paulo*, 15 Dec. 1983; *Estado de Minas*, 15 Dec. 1983. **India:** *Indian Express* (New Delhi, Bombay, Madras, Bangalore, Ahmedabad, Chandigarh, Cochin, Madurai, Vijayawada, and Hyderabad editions), 18 Dec. 1983; *Statesman*, 14 Dec. 1983; *Hindustan Times*, 22 Dec. 1983; *Sunday Observer*, 18 Dec. 1983; *Telegraph*, 19 Dec. 1983. **Hong Kong:** *Far Eastern Economic Review*, 22 Dec. 1983; *South China Morning Post*, 15 Dec. 1983; *Sing Tao Wan Pao*, 15 Dec. 1983. **Japan:** *Japan Times*, 21 Dec. 1983. **Kenya:** *Daily Nation*, 24 Dec. 1983.

On the basis of previous research into the Maharishi Effect and theoretical considerations regarding the nature and qualities of the unified field, research scientists at MIU predicted in early December 1983 that the reality of the Global Taste of Utopia would be demonstrated by improved relations between nations, greater co-operation between political parties, increased social harmony, and signs of worldwide economic recovery, and would also be reflected in growing optimism, confidence, and self-reliance, and in a general sense of well-being in the family of nations. It was emphasized that above all it would be the head of state, the embodiment of national life, who would be the first to enjoy the sweet taste of utopia rising in his country and the world. When asked about the anticipated results, Maharishi commented: 'Anything that is good will rise; anything that is not good will vanish, as darkness disappears with the first ray of light'.

During the assembly world news media reported a wide variety of positive developments, including many indications of increased international harmony, greater strength and unity within nations, increased freedom and tolerance, progress towards recovery in the world economy, and greater balance in nature, as reflected by reversal of imbalances in world weather patterns. The expressions of heads of state reported during this period were clearly indicative of rising strength and coherence in national and world consciousness.

The papers of Orme-Johnson, Cavanaugh, and their collaborators (papers 336 and 337)⁷ record the findings of a detailed study of world events before, during, and after the Assembly of 7000. Employing a rigorous procedure for content analysis of world press reports, and drawing upon standard sources of data on economic trends, health, crime, and other sociological parameters, these investigators confirmed that world events had improved strikingly during the three weeks of the assembly, and had reverted afterwards to their previous, less positive trends.

Advances in Knowledge during the Taste of Utopia

Maharishi had predicted that with the influence of intense coherence generated in world consciousness during the Assembly of 7000, the ground would be laid for profound developments in our knowledge of nature's functioning. Important advances were indeed reported during the assembly, and these came from both the objective approach of modern science and the subjective approach of Vedic Science. By far the most significant of these discoveries were those dealing with the unified field itself.

In the introduction to Volume 3 of this series the central contribution of theoretical physics to the Maharishi Technology of the Unified Field is discussed. The global application of the Maharishi Technology of the Unified Field during the Assembly of 7000 has now led to a

7. D. W. Orme-Johnson, K. L. Cavanaugh, C. N. Alexander, P. Gelderloos, M. Dillbeck, A. G. Lanford, and T. M. Abou Nader, 'The Influence of the Maharishi Technology of the Unified Field on World Events and Global Social Indicators: The Effects of the Taste of Utopia Assembly'.

K. L. Cavanaugh, D. W. Orme-Johnson, and P. Gelderloos, 'The Effect of the Taste of Utopia Assembly on the World Index of International Stock Prices'.

For an overview of the findings please refer to figures 1 to 13 in paper 337.

MAHARISHI TECHNOLOGY

SOLVING PROBLEMS OF GOVERNMENTS CREATING IDEAL CIVILIZATION ON EARTH

A TASTE OF UTOPIA—DEC. 17—JAN. 6, 1984



His Holiness Maharishi Mahesh Yogi

Founder of the Maharishi Technology of the Unified Field (1983), Founder of Maharishi International University (1971), and Founder of the World Government of the Age of Enlightenment (1976).

The World Government of the Age of Enlightenment offered last month to solve the problems of all governments.

In the same wave of inspiration, Maharishi International University has now planned to give a sample taste of utopia to all mankind.

Seven thousand experts in the Maharishi Technology of the Unified Field will assemble at MIU from December 17 to January 6 to collectively create a strong influence of coherence and positivity in the whole world.

This unique demonstration of global coherence, originating from one place and reaching all parts of the world, will inspire governments to follow this example in their own countries and create a group of experts in the Maharishi Technology of the Unified Field so that negative trends do not arise in the country, law and order are spontaneously maintained, and administration becomes simple, effective, free from problems, and free from the elements of fear and punishment. Real freedom will be enjoyed by the people and by the government.

"It is fulfilling to proclaim that with the discovery of the unified field of all the laws of nature and the development of the technology of the unified field, and with the authority that every government enjoys in its country, there is nothing that cannot be accomplished by a sovereign government. Now not only can every government rise above the reach of problems but also it can attain any desired height of achievement." —Maharishi

THE UNIFIED FIELD

The unified field is described by the supergravity theory of quantum physics as a super-symmetric (perfectly balanced), non-Abelian (self-interacting) field of pure intelligence, which generates the fundamental particles and forces of nature through its infinitely self-referral dynamics at the Planck scale of nature's functioning (10^{-33} cm. or 10^{-43} sec.), giving rise to the infinite diversity of the universe.

MODERN SCIENCE VEDIC SCIENCE

The discovery of the unified field as a self-referral reality through the objective approach of modern science, the experience of this self-referral reality as the simplest state of human awareness—transcendental consciousness—gained through the subjective approach of ancient Vedic Science as recently brought to light by Maharishi, and the benefits of this experience verified through a large body of scientific research have given rise to the Maharishi Technology of the Unified Field, which trains the individual to function from the self-referral level of nature's functioning so that nature's perfect balance, supreme efficiency, infinite organizing

power, and unlimited creativity are available in daily life.

UTOPIA

The Maharishi Technology of the Unified Field has placed mankind on the doorstep of utopia—the unified field based civilization. Trends and tendencies in society will be maintained in the evolutionary direction, bringing fulfillment to all areas of governmental responsibility, including administration, education, defense, health, rehabilitation, economics, and agriculture.

Government PROBLEM-FREE ADMINISTRATION

The Maharishi Technology of the Unified Field applied to administration offers to every government that supreme efficiency with which nature governs the universe, without altering the present system of government in any way.

This beautiful approach of bringing national law into alliance with natural law strengthens the government and improves the destiny of the nation in such a balanced and natural way that the creation of an ideal society can be a reality for any sovereign nation within as short a time as is desired.

In his Absolute Theory of Government, Maharishi explains that every government, irrespective of its system, is an innocent mirror of its nation. The strength and success of the government depends upon the strength and integrity of national consciousness. Since the government draws its inspiration and vitality from the collective consciousness of the people, it is essential that the government does whatever it can to maintain the highest quality of national consciousness.

All trends and tendencies in the country are fundamentally governed by the laws of nature. The unified field, being the fountainhead of all the laws of nature, underlies all aspects of national life and as such is available everywhere. Furthermore, the means of enlivening the unified field in national consciousness is also available everywhere, in the brain physiology of each individual in every country. Thus, every government already has in its population everything that it could ever need to make life fulfilling and the nation ideal. It is just a matter of knowing how to use the nation's most precious resource—the brain physiology of every citizen.

"Human brain physiology is that hardware of the cosmic computer which, through proper programming, can draw upon the cosmic software of nature to accomplish anything." —Maharishi

What is fortunate is that only the square root of one percent of the population of the country (a slightly larger proportion for a country with a small population) practicing the Maharishi Technology of the Unified Field in any one place in the country is sufficient to fully awaken national consciousness. What is still more fortunate is that any group, regardless of education or economic status, can be trained to create this desired effect. What is most fortunate is that MIU is prepared to train such groups at its campuses in Iowa and in Washington, D.C., or in any country at the invitation of its government, universities, public or private organizations, or any one well-wisher of the nation.

Governments have always enjoyed their parental role of bringing maximum happiness to their people. The benefits that the Maharishi Technology of the

Unified Field brings to all fields of life are so extensively documented by scientific research that any head of state can adopt, without reservation, this practical knowledge of the unified field to fulfill his aspiration to do maximum for his people and the world.

Now the knowledge of the unified field and the availability of the technology of the unified field make it mandatory for every government to base its administration on the infinite organizing power of the unified field of natural law.

Education UNFOLDING CREATIVE GENIUS

The Maharishi Unified Field Based Integrated System of Education offers a new approach to teaching whereby every lesson is taught with reference to the knowledge of the whole discipline and the source of all disciplines is shown to be the field of pure intelligence, which the student experiences in the simplest state of his own awareness, transcendental consciousness.

The student grows in the awareness that all branches of knowledge are different modes of his own intelligence. His creative genius blossoms as his awareness is identified more and more fully with pure intelligence, the unified field of all the laws of nature. Instinctively, his thoughts are right; he does not make mistakes; his behavior is spontaneously evolutionary. He grows in ideal citizenship—the ability to fulfill his own interests and promote the interests of the whole society simultaneously.

The numerous benefits of this integrated system of education have been verified through a large body of scientific research and are further demonstrated in the high quality of life of MIU students and their

OF THE UNIFIED FIELD

natural focus on academic study, from primary level to Ph.D.

This unified field based approach, which raises life to be lived in full accord with natural law, can be easily introduced to fulfill the goals of any system of education without the need to revise the existing curriculum. Educators from all countries are invited for training in this ideal system of education.

Defense

VICTORY BEFORE WAR

Maharishi's contribution in the field of defense is invincibility for every nation. The Maharishi Technology of the Unified Field offers absolute defense in that it eliminates the very need for defending by preventing the birth of an enemy. This approach promotes life in accordance with natural law, maintains evolutionary trends within the country, and radiates life-supporting influences in all directions, automatically preventing the birth of an enemy.

The need for defense has its basis in fear, which is caused by stress. Since education does not train the people to think and act spontaneously in accordance with the full potential of natural law, the whole population is violating the laws of nature, causing stress, fear, and weakness, and creating the need for defense.

Destructive means of defense can at best leave the enemy in a state of fear, which can serve only to postpone confrontation. History records that destructive means of defense have always proven suicidal for any nation. Fortunately, those days are now coming to an end.

The predominant sense of restraint observed in the family of

nations today with regard to the use of nuclear arms demonstrates the growth of the most fortunate, tender quality of life—the desire of the leaders of the world to ensure security without destroying life. This noble search of world leadership finds its fulfillment in the Maharishi Technology of the Unified Field, which offers absolute defense by bringing nourishment to life.

This unified field based approach has raised defense from the ground of ignorance and cruelty to the heights of wisdom and compassion. Nourishing the hearts of all nations, every nation will enjoy invincibility. Victory before war is the clarion call of unified field based defense.

Health

REVERSAL OF AGING

Maharishi's unified field based approach to health simultaneously promotes the health of the individual and the collective health of the nation by bringing life into accordance with the full potential of natural law.

This approach produces perfect integration of mind, body, and behavior and eliminates imbalance, leaving no chance for weakness to remain on any level of life—individual, national, or international.

Immortality, being a quality of the unified field, is enlivened on every level of life through this unified field based approach to health. This brings perfect health and longevity to the individual and the nation. Perfect health is marked by the ability to use the full creative potential of life in the state of fulfillment.

Extensive scientific research indicates improvements in all areas of health, including reversal of the aging process, through the Maharishi Technology of the Unified Field (Ref.: Scientific research papers in four volumes, 2800 pages).

Rehabilitation

RESTORING BALANCE

The Maharishi Unified Field Based Integrated System of Rehabilitation eliminates stress and restores balance in the individual and his environment. It eliminates negativity in life, promotes evolutionary tendencies, and offers the perfect means of rehabilitation by naturally raising life to be lived in accordance with all the laws of nature.

This ideal approach to crime prevention and rehabilitation has been validated by extensive scientific research, including studies in prisons showing improved mental and physical health, reduced negativity and hostility, and reduced recidivism. It has also been used in probationary sentencing as a positive alternative to incarceration.

Now it is within the reach of every government to empty its prisons and uphold life in its full dignity.

Economics

FULFILLING PROSPERITY

The contribution of the Maharishi Unified Field Based Integrated

System of Economics is unlimited for the simple reason that creativity, the basis of all prosperity and progress, is fully lively in the unified field. When the unified field is enlivened in national consciousness, infinite creativity is lively in the national economy, business and industry are free from problems, and prosperity is crowned with fulfillment.

Agriculture

SELF-SUFFICIENCY

Maharishi's unified field based approach to agriculture creates perfect balance in nature. All the laws of nature rise to support the soil, the seed, the weather, and the farmer. Seasons come on time. Crops are abundant. National self-sufficiency is the harvest of unified field based agriculture.

UNIFIED FIELD BASED LEADERSHIP TRAINING

Beginning on January 12, 1984, unified field based leadership training courses will be offered in Washington, D.C. Weekend and week-long conferences will be available for the top level of leadership in all major areas of society. Other courses of varying duration will be held for administrators and future leaders.

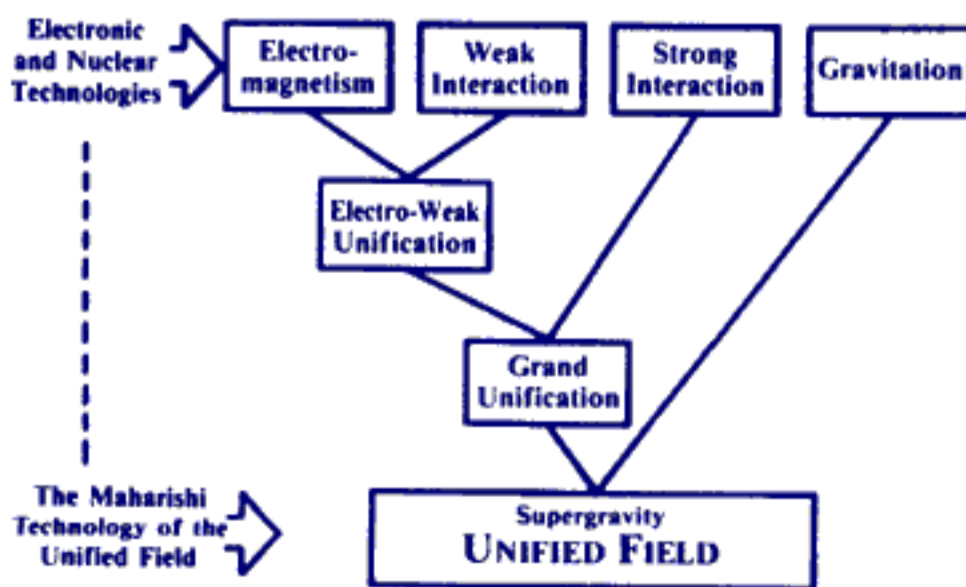
Qualities of the Unified Field

Since the unified field is a field of all possibilities, the qualities of the unified field are innumerable. A few of its characteristic qualities are described here in the light of the supergravity theory of quantum physics in order to give a glimpse of the benefits that the technology of the unified field can bring to individual and collective life:

- 1. Perfect Balance**—supersymmetry: balance of bose and fermi fields.
- 2. Invincibility**—though the physical particle states appear broken, the Lagrangian of the unified field remains eternally supersymmetric—the laws governing the unified field are inviolable.
- 3. Self-referral**—the non-Abelian property of self-interaction.
- 4. Self-sufficiency**—a unified gauge field, containing the whole of physics, interacts with itself alone.
- 5. Infinite Creativity**—the fountainhead of natural law: from this unified source, sequential dynamical symmetry breaking gives rise to all the particles and forces of nature.
- 6. Infinite Dynamism**—the quantum fluctuations at the Planck scale express infinite dynamism.
- 7. Infinite Organizing Power**—the Hamiltonian of the unified field governs the time evolution of the entire universe.
- 8. All Possibilities**—all the fundamental quantum fields are fully enlivened as dynamical degrees of freedom at the Planck scale of superunification.
- 9. Immortality**—time translational invariance of the Lagrangian density of the unified field.
- 10. Nourishing**—the eternal continuum of the self-interaction of the unified field sustains the time evolution of the universe.

All beautiful, evolutionary qualities spontaneously blossom in individual and collective life as the mind gains increasing familiarity with the unified field. This has been amply verified by extensive scientific research in the areas of physiology, psychology, sociology, and ecology and demonstrated in the lives of millions of people and in the improving quality of national life on all continents during the past 25 years. These achievements are at the basis of our global initiative to give a sweet taste of utopia to all mankind and to invite our family of nations to collectively create unified field based ideal civilization in our generation.

Discovery of the Unified Field Unification of the Four Fundamental Forces of Nature



As the figure shows, the unified field is basic to all other levels of natural law, including the electronic and nuclear levels. Therefore, identification with the unified field brings the advantage of the infinite creativity and organizing power of all the laws of nature to any individual and any nation.

The sweet taste of utopia comes as the supreme gift of the Silver Jubilee Celebrations of Maharishi's worldwide Transcendental Meditation movement, 1958 to 1983. Maharishi declared 1983 to be the "Year of the Unified Field." Now, 1984 will be welcomed as the "Year of Unified Field Based Civilization."

INSTITUTE OF WORLD LEADERSHIP, MAHARISHI INTERNATIONAL UNIVERSITY, FAIRFIELD, IOWA 52556, USA

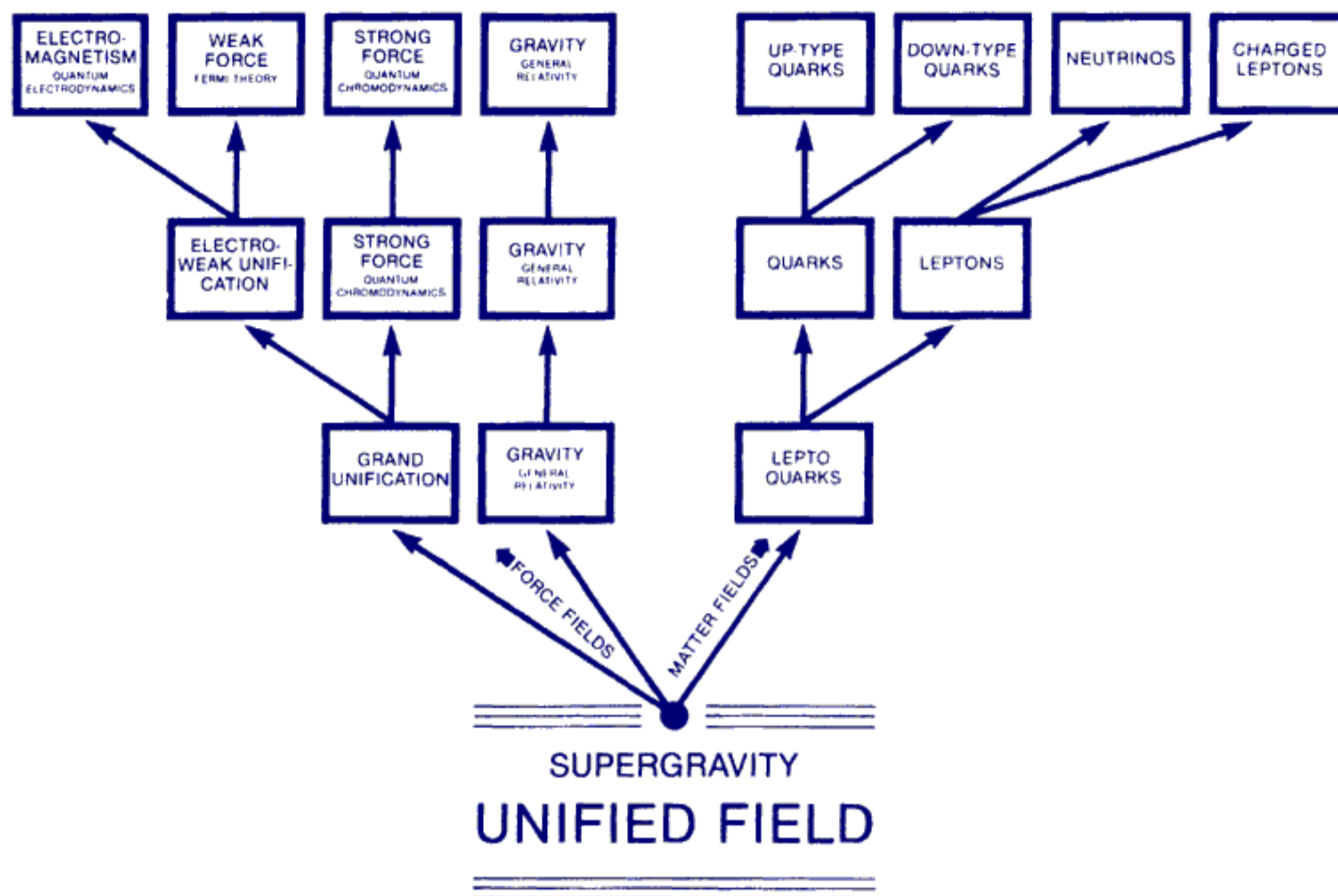


FIG. 1. THE FUNDAMENTAL FORCE AND MATTER FIELDS OF NATURE ARISING FROM THE UNIFIED FIELD OF NATURAL LAW

breakthrough in the physics of the unified field: experimental verification of the superunification of the fundamental forces and particles of nature.

Over the past two decades, great progress has been made in the development of unified quantum field theories (see figure 1). However, prior to the Taste of Utopia, only the electro-weak theory put forward by Weinberg, Salam, and Glashow⁸ had been confirmed by experiment.⁹ Interestingly, it was during the Assembly of 7000 that observations of proton decay were reported from Japan¹⁰ which, if confirmed, will serve to verify the next level of unification as described by grand unified field theories.¹¹ However, the most important advance to occur during the Taste of Utopia was the experimental confirmation of the complete unification of all the fundamental particles and forces described by superunified field theories.

8. S. Weinberg, *Physical Review Letters* 19 (1967): 1264; A. Salam, in *Elementary particle theory: Relativistic groups and analyticity* (Nobel Symp. no. 8), ed. N. Svartholm (Stockholm: Almquist and Wiksell, 1968): p. 367.

9. This was achieved in 1983 with the observation of the W and Z gauge bosons in proton-antiproton collisions in the Super Proton Synchrotron at CERN, Geneva, Switzerland. G. Arnison et al., *Physics Letters* 122B (1983): 103, and 126B (1983): 398; M. Banner et al., *Physics Letters* 122B (1983): 476; P. Bagnaia et al., *Physics Letters* 129B (1983): 130.

10. M. Koshiba, 'Kamioka Results on Nucleon Decay'. Invited talk at the Fifth Workshop on Grand Unification, Providence, Rhode Island, 1984.

11. See, for example, J. C. Pati and A. Salam, *Physical Review Letters* 31 (1973): 661, and *Physical Review D* 8 (1973): 1242; H. Georgi and S. L. Glashow, *Physical Review Letters* 32 (1974): 438.

Experimental Verification of the Unified Field

As discussed in the introduction to Volume 3, experimental verification of the unified field presents a unique challenge to the physicist. Ultimately, because the unified field is completely holistic in its nature and interacts with itself alone, it can be fully verified only on its own self-interacting level. The Assembly of 7000 provided an unprecedented opportunity for direct experiential verification of the unified field in the self-interacting state of consciousness, a state where the unified field is wide-awake within its own nature and functions in a self-interacting way. The Golden Domes of MIU, the world's leading facilities for research in consciousness, provided the ideal laboratory setting for the unified field to play the role of both subject and object in its own investigation, and thereby:

1. to function in the different modes of its own self-referral activity;
2. to observe the various modes of its own self-referral functioning;
3. to enjoy the enlivenment of its total potential in the full blossoming of all its beautiful qualities simultaneously; and
4. spontaneously to purify and nourish its innumerable expressions on every level of life—individual, national, international, and universal.

In addition to verification by direct experience, the Assembly of 7000 provided the opportunity for another approach to the experimental confirmation of the unified field. The theoretical basis for the experimental verification of the unified field was developed by Dr John Hagelin, Professor of Physics and Chairman of the Department of Physics at MIU, in his derivation of the fundamental qualities of the unified field¹² from the Lagrangian of $N=8$ supergravity theory (see figure 2). $N=8$ supergravity theory,¹³ the most complete description of the unified field to date, utilizes a profound symmetry principle, known as supersymmetry,¹⁴ to unify all the particles and forces of nature into a single unified field.

The Lagrangian of $N=8$ supergravity theory, recently formulated by de Wit and Nicolai,¹⁵ gives the most complete mathematical description of the unified field, and contains the fundamental laws of nature responsible for all structures and activity in the universe. Hagelin's derivation of the qualities of the unified field from the Lagrangian permitted the experimental verification of the superunification of all the forces and particles of nature. Evidence for superunification came with the enlivenment of the qualities of the unified field in world consciousness demonstrated by the improved character of world events, resulting from the collective performance of the Maharishi Technology of the Unified Field by the Assembly of 7000.

12. J. Hagelin, 'An Introduction to Unified Field Theories' (Fairfield, Iowa: Maharishi International University Press, 1983).

13. E. Cremmer and B. Julia, *Nuclear Physics* B159 (1979): 141–212; J. Ellis, M. K. Gaillard, and B. Zumino, *Physics Letters* 94B (1980): 343.

14. J. Wess and B. Zumino, *Nuclear Physics* B70 (1974): 39.

15. B. de Wit and H. Nicolai, *Physics Letters* 108B (1982): 285.

DERIVATION OF THE QUALITIES OF THE UNIFIED FIELD

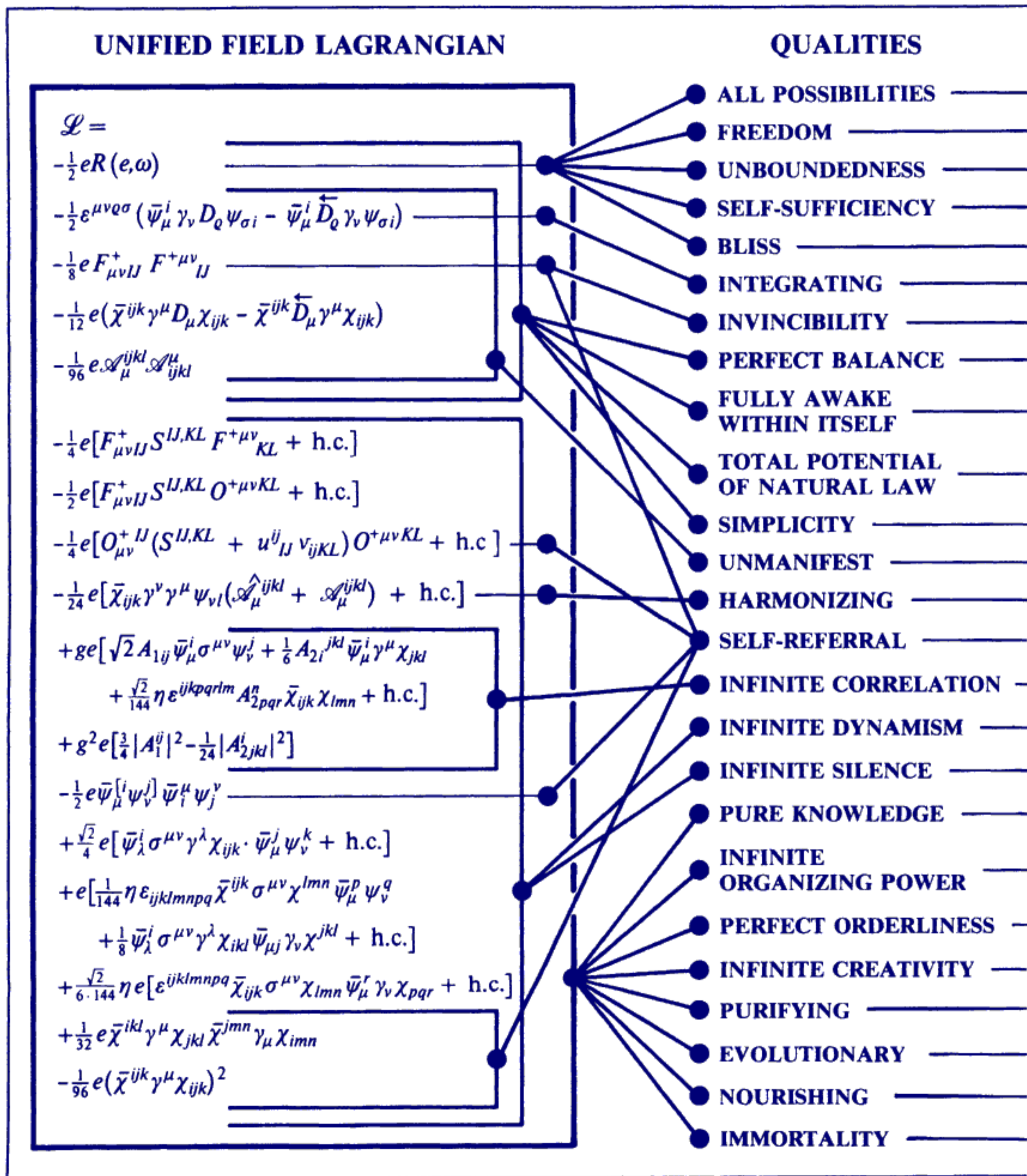


FIG. 2. DR JOHN HAGELIN'S DERIVATION OF THE QUALITIES OF THE UNIFIED FIELD FROM THE LAGRANGIAN OF N = 8 SUPERGRAVITY THEORY (AS FORMULATED BY DE WIT AND NICOLAI), AN EXAMPLE OF A SUPERSYMMETRIC UNIFIED QUANTUM FIELD THEORY.

FROM THE LAGRANGIAN OF $N = 8$ SUPERGRAVITY THEORY

DERIVATION

SCIENTIFIC RESEARCH

- All possible local gauge-invariant operators are generated by non-perturbative quantum gravitational effects at the Planck scale. (Vol. 1: 21, 62, 63, 87, 102, 103; Vol. 2: 130, 150, 152, 153, 164; Vol. 3: 222, 239, 242, 257, 258; Vol. 4: 294, 300, 312, 321, 324, 332, 333, 337)
- The graviton remains a free, unbound particle in the physical spectrum, and the entire supermultiplet becomes asymptotically free at the Planck scale. (Vol. 1: 6, 63, 69, 73, 80, 83, 84, 89, 101, 102, 103; Vol. 2: 153, 161, 163; Vol. 3: 249, 253, 258, 282, 286, 287; Vol. 4: 301, 312, 313, 332, 334)
- The translational invariance of the Lagrangian density; also expressed by the graviton, which is the gauge field of an infinite range force. (Vol. 1: 21, 51, 52, 102, 103; Vol. 2: 152, 153; Vol. 3: 197, 205, 213, 216, 218, 253, 258; Vol. 4: 312)
- The graviton does not participate in the activity of preon binding and is a singlet with respect to the internal $SO(8)$ and $SU(8)$ symmetries of the Lagrangian. (Vol. 1: 31, 51, 65, 67, 71, 89, 90, 103; Vol. 2: 139, 151, 153; Vol. 3: 197, 213, 234, 247, 249, 261, 283, 286, 290; Vol. 4: 303, 313, 335, 336, 337)
- Expressed by the continuous effervescence of topological fluctuations at the Planck scale and by the universally attractive nature of the graviton field. (Vol. 1: 67, 69, 70, 73, 76, 90, 97; Vol. 2: 121, 122, 147, 150, 158, 165; Vol. 3: 197, 241, 249, 268, 290; Vol. 4: 310, 312, 330, 333, 337)
- The gravitino fields dynamically uphold local supersymmetry, which integrates the different spin components of the unified field—graviton, gravitinos, vectors, spinors, and scalars. (Vol. 1: 1, 2, 3, 4, 14, 15, 16, 17, 18, 20, 21, 30, 45, 48, 49, 51, 67, 102, 103; Vol. 2: 165; Vol. 3: 205, 210, 211, 215, 216, 217, 222, 223, 224, 225, 257, 258, 277, 281; Vol. 4: 294, 295, 303, 312, 322, 333, 337)
- A non-Abelian gauge field dynamically upholds its own invariance under local symmetry transformations. (Vol. 1: 25, 26, 27, 28, 51, 52, 65, 73, 77, 87, 103; Vol. 2: 123, 147, 150, 151, 153, 164; Vol. 3: 197, 238, 241, 259; Vol. 4: 301, 308, 318, 319, 320, 321, 322, 323, 325, 326, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337)
- Supersymmetry—perfect balance of bosonic and fermionic degrees of freedom. (Vol. 1: 12, 13, 16, 18, 25, 31, 44, 51, 65, 76, 87; Vol. 2: 109, 110, 124, 165; Vol. 3: 194, 198, 202, 208, 211, 233, 257, 290; Vol. 4: 316, 333, 335)
- The zero-point motion of the quantum fields reaches its ultimate level of dynamism at the Planck scale. (Vol. 1: 2, 7, 14, 17, 19, 21, 29, 50, 51, 102, 103, 104; Vol. 2: 115, 117, 126, 147, 164; Vol. 3: 197, 205, 210, 211, 216, 217, 218, 222, 226, 227, 230, 251, 255, 257, 258; Vol. 4: 294, 296, 303, 312, 323, 327, 333, 337)
- All of the fundamental field types are fully enlivened as dynamical degrees of freedom at the Planck scale. (Vol. 1: 2, 7, 17, 18, 21, 62, 69, 71, 102, 103; Vol. 2: 150, 153, 159, 164; Vol. 3: 197, 216, 222, 223, 239, 242, 258; Vol. 4: 312, 324, 332, 333, 337)
- All of the fundamental components together comprise a single irreducible representation of the symmetry group. (Vol. 1: 1, 6, 8, 30, 65, 69, 73, 77; Vol. 2: 142, 150, 151, 157; Vol. 3: 197, 213, 216, 218, 234, 239, 277, 280; Vol. 4: 316, 322, 323, 332, 337)
- The fundamental components of the unified field, the preons, do not appear as manifest particles. (Vol. 1: 1, 2, 3, 4, 6, 7, 8, 14, 15, 17, 18, 21, 30, 51, 52, 69, 73, 94, 102, 103; Vol. 2: 150; Vol. 3: 197, 205, 213, 216, 218, 255, 259; Vol. 4: 293, 312)
- The gravitino is the gauge field of local supersymmetry which unites completely opposite values—bose and fermi fields. (Vol. 1: 15, 17, 20, 21, 65, 71, 73, 89, 96, 102; Vol. 2: 153, 165, 166; Vol. 3: 278; Vol. 4: 296, 297, 312, 314, 316, 322, 326, 328, 331, 333, 335, 337)
- The non-Abelian property of self-interaction of the vector fields that uphold the local $SO(8)$ symmetry. The property of self-interaction is also present in the graviton, gravitino, spinor, and scalar fields, and therefore in the entire supermultiplet. (Vol. 1: 21, 31, 51, 52, 65, 67, 90, 94, 103; Vol. 2: 139, 144; Vol. 3: 205, 206, 213, 216, 218, 240, 249, 258, 274, 290; Vol. 4: 304, 307, 312)
- Expressed by the terms which uphold the local $SO(8)$ gauge invariance of the Lagrangian. (Vol. 1: 17, 48, 73, 96, 102; Vol. 2: 114, 116, 165; Vol. 3: 211, 213, 222, 225; Vol. 4: 294, 320, 322, 323, 324, 326, 329, 330, 333, 335, 336, 337)
- The trilinear and quartic couplings describe the dynamical interaction of the preon fields. (Vol. 1: 29, 45, 53, 62; Vol. 2: 114, 126, 129, 130, 147, 150, 164; Vol. 3: 248, 251, 254, 257, 258, 277, 284; Vol. 4: 301, 308, 316, 330, 336, 337)
- The trilinear and quartic couplings preserve the invariance of the Lagrangian under local supersymmetry transformations. (Vol. 1: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 22, 23, 24, 30, 71, 104; Vol. 2: 122; Vol. 3: 150, 197, 205, 207, 213, 269, 275, 280; Vol. 4: 293, 308, 322, 331)
- The Lagrangian is the most compact mathematical expression of the complete structure of the laws of nature. (Vol. 1: 14, 16, 17, 18, 20, 21, 54, 56, 57, 58, 102, 103; Vol. 2: 144; Vol. 3: 210, 213, 216, 219, 221, 223, 230, 231, 265, 270; Vol. 4: 294, 303, 307)
- The Hamiltonian operator, derived from the Lagrangian by a Legendre transformation, governs all activity in the universe. (Vol. 1: 16, 17, 21, 31, 48, 56, 58, 94, 95, 98; Vol. 2: 105, 107, 113, 114, 116, 120, 150, 153, 164, 166; Vol. 3: 192, 196, 202, 205, 206, 208, 218, 219, 250, 251, 258, 284; Vol. 4: 294, 303, 323, 324, 332, 333, 334, 337)
- The $SO(8)$, $SU(8)$, and extended super-Poincaré symmetries of the Lagrangian. (Vol. 1: 3, 4, 15, 17, 21, 58, 89, 98; Vol. 2: 115, 157, 160, 164; Vol. 3: 202, 216, 221, 222, 224, 269, 286; Vol. 4: 318, 321, 322, 325, 326, 331, 337)
- The fountainhead of natural law—from this unified source, all the particles and forces of nature are generated through the process of dynamical symmetry breaking. (Vol. 1: 21, 62, 63, 77, 96, 102, 103; Vol. 2: 150; Vol. 3: 216, 257, 258, 260; Vol. 4: 294, 305, 312, 323, 329, 330, 332, 336, 337)
- The symmetries of the Lagrangian, which are broken at macroscopic distances, are spontaneously restored at the Planck scale. (Vol. 1: 12, 65, 68, 84, 88; Vol. 2: 109, 163; Vol. 3: 202, 233, 238, 239, 243, 281, 282, 290; Vol. 4: 312, 314, 321, 322, 325, 326, 332, 337)
- The Hamiltonian generates the time-evolution of the universe. (Vol. 1: 102; Vol. 2: 147, 153; Vol. 4: 303, 312, 321, 322, 332, 335, 337)
- The supermultiplet is a gauge field which dynamically upholds the unified structure of all its individual components. (Vol. 1: 67, 73, 77, 90; Vol. 2: 105, 149, 150, 151, 153; Vol. 3: 194, 234, 239, 242, 243, 245, 246, 247, 277; Vol. 4: 316, 330, 331, 332, 335, 337)
- The time-translational invariance of the Lagrangian density. (Vol. 3: 239, 242, 244, 245, 246, 257; Vol. 4: 300, 321, 322, 323, 327, 332)

The far right hand column gives reference numbers for research studies contained in the four volumes of this series which document the enlivenment of specific qualities of the unified field in individual and collective life.

This discovery represents the supreme achievement of our scientific age; inasmuch as it has elevated science from the knowledge of isolated laws of nature to the complete, holistic knowledge of the unified field of all the laws of nature, and has presented the possibility of living life fully supported by the total potential of natural law.

The Nature and Dynamics of the Unified Field Understood from Vedic Science

The Maharishi Technology of the Unified Field brings together the most ancient and most modern scientific traditions. It was appropriate, therefore, that while advances were being made in the understanding of the unified field from the objective approach of modern science, corresponding insights were also being brought to light from the subjective approach of Vedic Science.¹⁶ With reference to the Lagrangian of the unified field developed by modern physics, Maharishi brought out the Lagrangian of the universe as it is available in the Veda.

During the Assembly of 7000, Maharishi described the Self as the state of pure knowledge and explained that its first expression, अ, 'A', the first syllable of Rig Veda, is the one-syllable Lagrangian of the universe. From there it sequentially unfolds itself to appear in progressively more elaborated versions. As explained in figure 3, by the time the first syllable, 'A', has developed into the first word, अग्नि, 'AGNIM', it has already expressed the complete dynamics of the unified field. Maharishi went on to explain how 'AGNIM', in turn, continues to unfold and finally appears as the four Samhitas of the Veda, the fully expanded Lagrangian of the universe. Each Samhita has its own corresponding Brahmana, or organizing power aspect of pure knowledge, corresponding to the Hamiltonian of physics.

This vision of the Lagrangian developing from the Self through the whole range of the Veda makes it clear that the whole of the Veda, the total potential of pure knowledge and its inherent organizing power, is contained in the Self, and that it emerges from the self-referral performance of the Self. The emergence of the Vedic Lagrangian of the universe from the Self identifies the Self with the unified field of all the laws of nature.

The conclusion of Maharishi's analysis is of great practical importance: Since the total potential of natural law is inherent in the Self, and since it emerges from the Self through its self-referral functioning, self-referral performance becomes the direct means of harnessing the total potential of natural law.

Discussing this point at the close of the Assembly of 7000, Maharishi said:

The Maharishi Technology of the Unified Field utilizes this self-referral mechanics to harness the infinite organizing power of nature for the fulfilment of any desire. It is this that has enlivened the unified field in world consciousness and created evolutionary trends of life every-

16. For a brief, general introduction to Vedic Science, the reader is invited to consult the introduction to Volume 3. A more detailed discussion will be contained in theoretical papers to appear in Collected Papers, Volume 5 (in press).

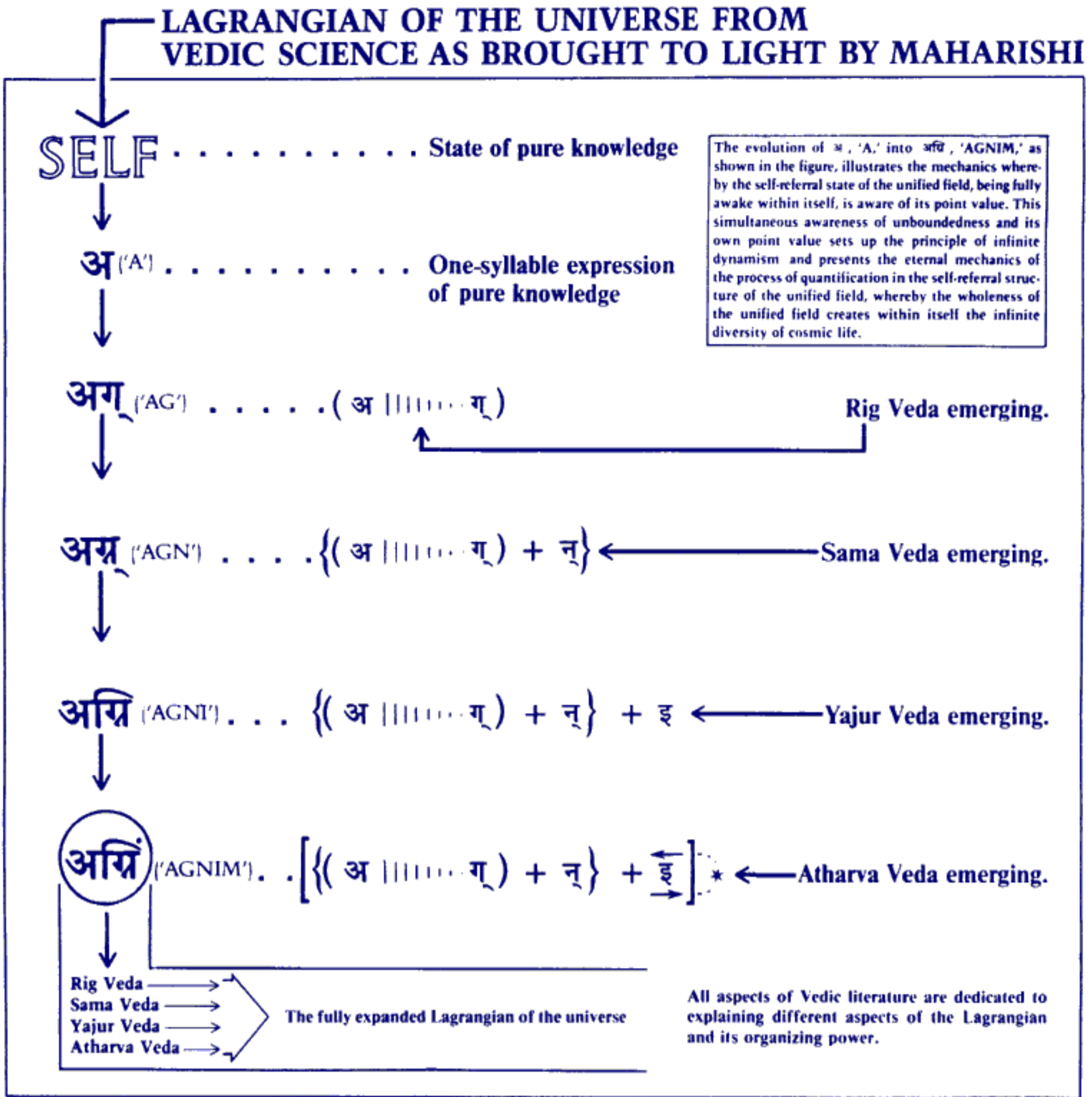


FIG. 3. THE VEDIC LAGRANGIAN OF THE UNIVERSE AS BROUGHT TO LIGHT BY MAHARISHI. The figure illustrates the sequential emergence of the Lagrangian from the Self.

where, giving a Global Taste of Utopia, and it is this that is going to perpetuate utopia—unified field based perfect civilization for generations to come.

It was on this confident note of inspiration that Maharishi inaugurated 1984 as the Year of Unified Field Based Civilization.

The Formula for Creating Utopia in this Scientific Age

As we have seen, the reality of the Global Taste of Utopia has been verified by both world press reports and by scientific research, and has been understood on the basis of the total

knowledge of nature's functioning from both the objective approach of modern science and the subjective approach of Vedic Science. The successful demonstration of global coherence, originating from the Assembly of 7000 at MIU and reaching all parts of the world, has established both the principle and the practicality of creating positivity throughout society through the collective performance of the Maharishi Technology of the Unified Field by the square root of one per cent of the population.

This remarkable experiment has shown that any nation can create and enjoy utopia with the spontaneous blossoming of all the evolutionary qualities of the unified field on every level of individual and national life. Now it is for the custodians of every nation to make use of this technology to create and perpetuate utopia in their countries.

The Institute of World Leadership

In order to apprise the leaders of society of the formula for creating unified field based civilization, Maharishi has founded the Institute of World Leadership, with its headquarters at MIU. The Institute of World Leadership offers courses designed to develop unified field based leadership and thereby equip leaders with the means for creating a problem-free society through the Maharishi Technology of the Unified Field. Leadership training assumes great importance as coherence in world consciousness rises, since under these circumstances the leaders of society must be capable of effectively representing progressively higher levels of coherence in collective consciousness.

At the time of the Assembly of 7000, Maharishi formulated the principles for applying the knowledge of the unified field to bring fulfilment to different areas of human concern. These principles, which are contained in the Maharishi Unified Field Based Integrated Systems of Education, Health, Government, Economics, Defence, Rehabilitation, and Agriculture,¹⁷ will become the cornerstones of the institutions of society as the world rises to unified field based civilization.

The Immediate Need: A Permanent Group of 7000 Experts in the Maharishi Technology of the Unified Field

With the success of the Global Taste of Utopia, the immediate need is clear—the establishment of a permanent group of 7000 experts in the Maharishi Technology of the Unified Field in one place on earth. This will ensure that the rising trend of positivity witnessed during the three weeks of the Assembly of 7000 is maintained throughout the world. In order to intensify the effect of coherence and ensure that no pocket of negativity remains, similar groups should be established on each continent and in every country. It can be seen that the number of experts in the Maharishi Technology of the Unified Field required for each continent is very modest:

17. These will be discussed in theoretical papers to appear in *Collected Papers, Volume 5* (in press).

- for Europe 2900
- for Africa 2200
- for Asia 5000
- for North America 1600
- for South and Central America 1900
- for Australia and the Pacific 500

The task is thus so simple that any government or educational institution can successfully establish a coherence creating group for the whole world, for their continent, or for their country. Even a single school or college with the required number of students collectively practising the Maharishi Technology of the Unified Field can create an invincible nation and usher in unified field based civilization in their country for all generations to enjoy.

It is fulfilling to proclaim that, with the discovery of the unified field of all the laws of nature by modern science and the development of the technology of the unified field and with the authority and love of the people that every government enjoys in its country, there is nothing that cannot be accomplished by a sovereign government for its people and there is nothing that cannot be accomplished by the people for their government. Every nation now has the chance to create heaven on earth.—*Maharishi*

*Maharishi European Research University
Seelisberg, Switzerland
July 1984*

