

ANNOTATED BIBLIOGRAPHY

SCIENTIFIC RESEARCH ON MAHARISHI'S TRANSCENDENTAL MEDITATION AND TM-SIDHI PROGRAM VOLUMES 1-7

The following pages contain a complete reference list and summarize the findings of the first 605 scientific research papers on Maharishi's Transcendental Meditation and TM-Sidhi program contained in Volumes 1, 2, 3, 4, 5, 6 and 7 of *Scientific Research on Maharishi's Transcendental Meditation and TM-Sidhi Program: Collected Papers*, 5394 pages in all. The numbers before the references refer to the designated numbers of the papers as they are reprinted in the Collected Papers.

Whenever a paper has previously been published in a professional journal, book or other publication, the reference to that publication is given. In all other cases, details of the institutions or universities at which the research was conducted and conferences at which the results were presented are given.

VOLUME 1

ORME-JOHNSON, D. W., and FARROW, J. T., eds. 1977. *Scientific research on the Transcendental Meditation program: Collected papers, vol. 1*. Rheinweiler, W. Germany: MERU Press.

PART I: PHYSIOLOGY

The Studies in the First Two Sections Document Changes during the Practice of the Transcendental Meditation Technique Unless Otherwise Stated.

A: Metabolic Changes

1. WALLACE, R. K. Physiological effects of Transcendental Meditation. *Science* 167: 1751–1754, 1970.

Indications of Deep Rest along with Wakeful, Ordered State of Brain Functioning: Decreased Metabolic Rate (Decreased Oxygen Consumption and Unchanged Respiratory Quotient); Decreased Minute Ventilation; Decreased Heart Rate; Increased Basal Skin Resistance; Increased Regularity and Intensity of EEG Alpha Activity.

2. WALLACE, R. K. The physiological effects of Transcendental Meditation: A proposed fourth major state of consciousness. Doctoral thesis, Department of Physiology, School of Medicine, University of California at Los Angeles, Los Angeles, California, U.S.A., 1970. Indications of Deep Rest along with Wakeful, Ordered State of Brain Functioning: Decreased Metabolic Rate (Decreased Oxygen Consumption and Decreased Carbon Dioxide Elimination); Normal Arterial Oxygen and Carbon Dioxide Partial Pressures; Decreased Respiration Rate; Decreased Heart Rate; Increased Basal Skin Resistance; Increased Regularity and Intensity of EEG Alpha Activity in Frontal and Central Regions. Reduction in Biochemical Index of Stress: Decreased Arterial Lactate Levels. Self-Reported Improvements in Physical and Mental Health, and Resistance to Disease.

3. WALLACE, R. K., et al. A wakeful hypometabolic physiologic state. *American Journal of Physiology* 221: 795–799, 1971.

Indications of Deep Rest along with Wakeful, Ordered State of Brain Functioning: Decreased Metabolic Rate (Decreased Oxygen Consumption and Decreased Carbon Dioxide Elimination); Normal Arterial Oxygen and Carbon Dioxide Partial Pressures; Decreased Respiration Rate; Decreased Minute Ventilation; Decreased Heart Rate; Increased Basal Skin Resistance; Increased Regularity and Intensity of EEG Alpha Activity in Frontal and Central Regions; Episodes of Rhythmical EEG Theta Activity in Frontal Region. Reduction in Biochemical Index of Stress: Decreased Arterial Lactate Levels.

4. WALLACE, R. K., et al. The physiology of meditation. *Scientific American* 226: 84–90, 1972.

Indications of Deep Rest along with Wakeful, Ordered State of Brain Functioning: Decreased Metabolic Rate (Decreased Oxygen Consumption and Decreased Carbon Dioxide Elimination); Normal Arterial Oxygen and Carbon Dioxide Partial Pressures; Decreased Respiration Rate; Decreased Minute Ventilation; Decreased Heart Rate; Increased Skin Resistance; Increased Regularity and Intensity of EEG Alpha Activity in Frontal and Central Regions. Reduction in Biochemical Index of Stress: Decreased Arterial Lactate Levels.

5. ALLISON, J. Respiratory changes during Transcendental Meditation. *Lancet* (7651): 833, 1970.

Indication of Deep Rest: Decreased Respiration Rate.

6. COREY, P. W. Airway conductance and oxygen consumption changes associated with practice of the Transcendental Meditation technique. University of Colorado Medical Center, Denver, Colorado, U.S.A., 1973.

Increased Ease of Breathing: Increased Airway Conductance. Indications of Deep Rest: Decreased Metabolic Rate (Decreased Oxygen Consumption and Decreased Carbon Dioxide Elimination); Decreased Heart Rate. Maintenance of a Relaxed Style of Physiological Functioning Outside of Meditation: Lower Basal Metabolic Rate After Meditation.

7. FARROW, J. T. Physiological changes associated with transcendental consciousness, the state of least excitation of consciousness. Psychophysiology Laboratory, Centre for the Study of Higher States of Consciousness, Maharishi European Research University, Switzerland, 1975. Experience of Transcendental Consciousness Associated with: High EEG Coherence in the Theta, Alpha, and Beta Bands; Episodes of Spontaneous Breath Suspension (Not Followed by Hyperventilation); Marked Reductions in Respiration Rate, Minute Ventilation, Metabolic Rate (Oxygen Consumption and Carbon Dioxide Elimination), and Heart Rate; Increased Basal Skin Resistance; Cessation of Spontaneous Skin Resistance Response.
8. HEBERT, J. R. Periodic suspension of respiration during the Transcendental Meditation technique. Psychophysiology Laboratory, Centre for the Study of Higher States of Consciousness, Maharishi European Research University, Switzerland, 1976. Maximum State of Deep Rest: Episodes of Spontaneous Breath Suspension (Not Followed by Hyperventilation).
9. DHANARAJ, V. H., and SINGH, M. Reduction in metabolic rate during the practice of the Transcendental Meditation technique. Doctoral thesis of first author (summary), Department of Physical Education, University of Alberta, Edmonton, Alberta, Canada. Paper presented at the first Canadian Congress for Multidisciplinary Study of Sport and Physical Activity, Quebec, Canada, October 1973. Indications of Deep Rest: Decreased Metabolic Rate (Decreased Oxygen Consumption and Unchanged Respiratory Quotient); Decreased Tidal Volume; Decreased Respiration Rate.
10. BAKKER, R. Decreased respiratory rate during the Transcendental Meditation technique: A replication. Department of Biology, California State College at Sonoma, Sonoma, California, U.S.A., 1974. Indication of Deep Rest: Decreased Respiration Rate.
11. LEVANDER, V. L., et al. Increased forearm blood flow during a wakeful hypometabolic state. *Federation Proceedings* 31: 405 (Abstract), 1972. Small Increase in Forearm Blood Flow.
12. JEVNING, R.; WILSON, A.; VANDERLAAN, E.; and LEVINE, S. Plasma prolactin and cortisol during Transcendental Meditation. Findings previously published in *The Endocrine Society Program 57th Annual Meeting*, New York City, 18–20 June 1975, p. 257 (Abstract). Reduction in Biochemical Index of Stress: Decreased Plasma Cortisol Levels. Small Increase in Plasma Prolactin Immediately following Transcendental Meditation.
13. JEVNING, R.; WILSON, A. F.; and SMITH, W. R. Plasma amino acids during the Transcendental Meditation technique: Comparison to sleep. Findings previously

published in *Sleep research*, vol. 4, ed. M. H. Chase, W. C. Stern, and P. L. Walter, pp. 79–80 (Abstract). Los Angeles: Brain Information Service, Brain Research Institute, University of California at Los Angeles, Los Angeles, California, U.S.A., 1975.
Increased Plasma Phenylalanine Levels.

B: Electrophysiological and Electroencephalographic Changes

14. BANQUET, J. P. EEG and meditation. *Electroencephalography and Clinical Neurophysiology* 33: 454 (Abstract), 1972.

EEG Indications of Restful Alertness: Coexistence of Theta and Delta with Alpha and Beta EEG Activity. Increased Orderliness and Integration of Brain Functioning: Hypersynchrony and Rhythmicity; Synchronization of Anterior and Posterior Channels; Periods of Uniformity of Frequency and Amplitude from All Leads.

15. BANQUET, J. P. Spectral analysis of the EEG in meditation. *Electroencephalography and Clinical Neurophysiology* 35: 143–151, 1973.

Increased Orderliness and Integration of Brain Functioning: High Amplitude EEG Alpha Activity Extending to Anterior Channels; Bursts of High Amplitude Theta Activity in All Channels; Rhythmic High Amplitude Beta Activity in All Channels; Synchronization of Anterior and Posterior Channels. Electromyographic Evidence of Deep Muscular Relaxation.

16. WESTCOTT, M. Hemispheric symmetry of the EEG during the Transcendental Meditation technique. Department of Psychology, University of Durham, Durham, England, 1973.

Increased Orderliness and Integration of Brain Functioning: High Levels of Interhemispheric EEG Alpha Correlation; Greater Power Balance between Right and Left Hemispheres.

17. BANQUET, J. P., and SAILHAN, M. EEG analysis of spontaneous and induced states of consciousness. *Revue d'électroencéphalographie et de neurophysiologie clinique* 4: 445–453, 1974.

EEG Indications of Restful Alertness: Less Activation (Decreased Proportion of Beta to Alpha); Greater Wakefulness (Increased Proportion of Alpha to Delta). Increased Orderliness and Integration of Brain Functioning: Greater Interhemispheric and Intrahemispheric EEG Synchrony.

18. KRAS, D. J. The Transcendental Meditation technique and EEG alpha activity. Department of Psychology, Stirling University, Stirling, Scotland, 1974.

EEG Indications of Restful Alertness: Increased Alpha Activity in All Areas of the Brain. Maintenance of a More Relaxed Style of Physiological Functioning Outside of Meditation: Persistence of Greater Alpha Activity following Meditation.

19. BANQUET, J. P., and SAILHAN, M. Quantified EEG spectral analysis of sleep and

Transcendental Meditation. Stanley Cobb Laboratories for Psychiatric Research, Massachusetts General Hospital and Harvard Medical School, Boston, Massachusetts, U.S.A., and Institut La Rochefoucauld, Paris, France. Paper presented at the Second European Congress on Sleep Research, Rome, Italy, 10 April 1974.

EEG Indications of Inner Wakefulness during Sleep.

20. LEVINE, P. H.; HEBERT, J. R.; HAYNES, C. T.; and STROBEL, U. EEG coherence during the Transcendental Meditation technique. Psychophysiology Laboratory, Centre for the Study of Higher States of Consciousness, Maharishi European Research University, Switzerland, 1976.

Increased Orderliness and Integration of Brain Functioning: Increased EEG Coherence Especially in Alpha and Theta Bands.

21. HAYNES, C. T.; HEBERT, J. R.; REBER, W.; and ORME-JOHNSON, D. W. The psychophysiology of advanced participants in the Transcendental Meditation program: Correlations of EEG coherence, creativity, H-reflex recovery, and experience of transcendental consciousness. Psychophysiology Laboratory, Centre for the Study of Higher States of Consciousness, Maharishi European Research University, Switzerland, 1976.

Correlations between High EEG Coherence, High Levels of Creativity, Enhanced Neurological Efficiency (Faster H-Reflex Recovery), and Clarity of Experiences of Transcendental Consciousness.

22. JANBY, J. Immediate effects of the Transcendental Meditation technique: Increased skin resistance during first meditation after instruction. Institute of Psychology, University of Aarhus, Aarhus, Denmark, 1973.

Indication of Deep Relaxation: Marked Increase in Basal Skin Resistance.

23. LAURIE, G. An investigation into the changes in skin resistance during the Transcendental Meditation technique. Department of Psychology, Portsmouth Polytechnic, Portsmouth, Hampshire, England, 1973.

Indication of Deep Relaxation: Marked Increase in Basal Skin Resistance.

24. WEST, M. A. Changes in skin resistance in subjects resting, reading, listening to music, or practicing the Transcendental Meditation technique. University College of Swansea, University of Wales, Swansea, Wales, 1973.

Indication of Deep Relaxation: Marked Increase in Basal Skin Resistance.

C: Physiological Efficiency and Stability

25. ORME-JOHNSON, D. W. Autonomic stability and Transcendental Meditation. *Psychosomatic Medicine* 35: 341–349, 1973.

Improved Resistance to Stress and Greater Autonomic Stability: Faster Habituation of Skin Resistance Response to Stressful Stimuli; Fewer Multiple Responses; Fewer Spontaneous Skin Resistance Responses.

26. WILCOX, G. G. Autonomic functioning in subjects practicing the Transcendental Meditation technique. School of Applied Psychology, University of New South Wales, Sydney, New South Wales, Australia, 1973.
Improved Resistance to Stress and Greater Autonomic Stability: Faster Habituation of Skin Resistance Response to Stressful Stimuli; Fewer Spontaneous Skin Resistance Responses.
27. BERKER, E. Stability of skin resistance responses one week after instruction in the Transcendental Meditation technique. Department of Biology, Rollins College, Winter Park, Florida, U.S.A., 1974.
Improved Resistance to Stress and Greater Autonomic Stability: Faster Habituation of Skin Resistance Response to Stressful Stimuli; Fewer Spontaneous Skin Resistance Responses.
28. SMITH, T. R. The Transcendental Meditation technique and skin resistance response to loud tones. Department of Psychology, Eastern Michigan University, Ypsilanti, Michigan, U.S.A., 1974.
Improved Resistance to Stress and Greater Autonomic Stability: Faster Habituation of Skin Resistance Response to Stressful Stimuli.
29. WILLIAMS, P., and WEST, M. EEG responses to photic stimulation in persons experienced at meditation. *Electroencephalography and Clinical Neurophysiology* 39: 519–522, 1975.
EEG Indications of Greater Alertness (in Response to Photic Stimulation).
30. ROUTT, T. J. Low normal heart and respiration rates in individuals practicing the Transcendental Meditation technique. Department of Psychology, Huxley College of Environmental Studies, Western Washington State College, Bellingham, Washington, U.S.A., 1973.
Increased Basal Skin Resistance during Transcendental Meditation. Maintenance of a Relaxed Style of Physiological Functioning outside the Practice of Transcendental Meditation: Lower Heart Rate; Lower Respiration Rate.
31. MCDONAGH, J. M., and EGENES, T. The Transcendental Meditation technique and temperature homeostasis. Department of Psychology, St. Mary's College, Notre Dame, Indiana, U.S.A., 1973.
Enhanced Temperature Homeostasis: Faster Recovery of Normal Skin Temperature following Exertion.

D: Health

32. WALLACE, R. K., et al. Decreased blood pressure in hypertensive subjects who practiced meditation. Supplement 11 to *Circulation* 45 and 46: 516 (Abstract), 1972.
Improvements in Hypertensive Subjects: Decreased Blood Pressure.

33. BLACKWELL, B.; HANENSON, I. B.; BLOOMFIELD, S. S.; MAGENHEIM, H. G.; NIDICH, S. I.; and GARTSIDE, P. Effects of Transcendental Meditation on blood pressure: A controlled pilot experiment. *Psychosomatic Medicine* 37(1): 86 (Abstract), 1976.
Improvements in Hypertensive Subjects: Decreased Blood Pressure; Decreased Anxiety.
34. SIMON, D. B.; OPARIL, S.; and KIMBALL, C. P. The Transcendental Meditation program and essential hypertension. Hypertension Clinic and Department of Psychiatry, Pritzker School of Medicine, University of Chicago, Chicago, Illinois, U.S.A., 1974.
Improvements in Hypertensive Subjects: Decreased Blood Pressure. Improvements in Patients with Angina Pectoris: Improved Exercise Tolerance; Increased Maximum Workload; Delayed Appearance of Electrocardiographic Abnormalities during Exercise (Delayed Onset of ST Segment Depression); Decreased Double Product; Clinical Observations of Decreased Anxiety; Decreased Need for Tranquillizers and Anti-Anginal Drugs; Improved Sleeping Patterns; Improved Personal Relationships.
35. ZAMARRA, J.W. ; BESSEGHINI, I.: and WITTENBERG, S. The effects of the Transcendental Meditation program on the exercise performance of patients with angina pectoris. Department of Medicine, State University of New York at Buffalo, New York, U.S.A., and Buffalo Veterans Administration Hospital, Buffalo, New York, U.S.A., 1975.
Improvements in Patients with Angina Pectoris; Improved Exercise Tolerance; Increased Maximum Workload; Delayed Appearance of Electrocardiographic Abnormalities during Exercise (Delayed Onset of ST Segment Depression); Decreased Double Product; Clinical Observations of Decreased Anxiety; Decreased Need for Tranquillizers and Anti-Anginal Drugs; Improved Sleeping Patterns; Improved Personal Relationships.
36. HONSBERGER, R. W., and WILSON, A. F. The effect of Transcendental Meditation upon bronchial asthma. *Clinical Research* 21: 278 (Abstract), 1973.
Improvements in Patients with Bronchial Asthma: Decreased Severity of Symptoms Reported by Patients and Physicians; Reduced Airway Resistance.
37. HONSBERGER, R. W., and WILSON, A. F. Transcendental Meditation in treating asthma. *Respiratory Therapy: The Journal of Inhalation Technology* 3: 79–80, 1973.
Improvements in Patients with Bronchial Asthma: Decreased Severity of Symptoms; Reduced Airway Resistance.
38. WILSON, A. F.; HONSBERGER, R. W.; CHIU, J. T.; and NOVEY, H. S. Transcendental Meditation and asthma. *Respiration* 32: 74–80, 1975.
Improvements in Patients with Bronchial Asthma: Decreased Severity of Symptoms Reported by Patients and Physicians; Reduced Airway Resistance.

39. KLEMONS, I. M. Changes in inflammation in persons practicing the Transcendental Meditation technique. Department of Health Education, Pennsylvania State University, University Park, Pennsylvania, U.S.A., 1972.

Improved Periodontal Health: Decreased Gingival Inflammation.

40. MISKIMAN, D. E. The effect of the Transcendental Meditation program on compensatory paradoxical sleep. Graduate Department of Psychology, University of Alberta, Edmonton, Alberta, Canada, 1972.

Faster Recovery from Sleep Deprivation.

41. MISKIMAN, D. E. The treatment of insomnia by the Transcendental Meditation program. Graduate Department of Psychology, University of Alberta, Edmonton, Alberta, Canada, 1972.

Relief from Insomnia: Decreased Time Taken to Fall Asleep.

42. MISKIMAN, D. E. Long-term effects of the Transcendental Meditation program in the treatment of insomnia. Graduate Department of Psychology, University of Alberta, Edmonton, Alberta, Canada, 1975.

Relief from Insomnia: Decreased Time Taken to Fall Asleep (Benefits Sustained over Time).

43. MCINTYRE, M. E.; SILVERMAN, F. H.; and TROTTER, W. D. Transcendental Meditation and stuttering: A preliminary report. *Perceptual and Motor Skills* 39: 294 (Abstract), 1974.

Decreased Stuttering.

44. WELDON, J. T., and ARON, A. The Transcendental Meditation program and normalization of weight. Department of Psychology, Maharishi International University, Fairfield, Iowa, U.S.A., 1974.

Normalization of Weight.

E. Motor and Perceptual Ability, and Athletic Performance

45. SHAW, R., and KOLB, D. Reaction time following the Transcendental Meditation technique. Graduate Department of Psychology, University of Texas at Austin, Austin, Texas, U.S.A., 1971.

Improved Mind-Body Co-ordination: Faster Reactions.

46. APPELLE, S., and OSWALD, L. E. Simple reaction time as a function of alertness and prior mental activity. *Perceptual and Motor Skills* 38: 1263–1268, 1974.

Improved Mind-Body Co-ordination: Faster Reactions.

47. ORME-JOHNSON, D. W.; KOLB, D.; and HEBERT, J. R. An experimental analysis of the effects of the Transcendental Meditation technique on reaction time. International Center for Scientific Research, Maharishi International University, Fairfield, Iowa, U.S.A., 1973.

Improved Mind-Body Co-ordination: Faster Reactions.

48. BLASDELL, K. S. The effects of the Transcendental Meditation technique upon a complex perceptual-motor task. Department of Kinesiology, University of California at Los Angeles, Los Angeles, California, U.S.A., 1971.
Improved Mind-Body Co-ordination: Superior Perceptual-Motor Performance.
49. RIMOL, A. G. P. The Transcendental Meditation technique and its effects on sensory-motor performance. Department of Psychology, Princeton University, Princeton, New Jersey, U.S.A., 1974.
Improved Mind-Body Co-ordination: Short- and Long-Term Improvements in Complex Sensory-Motor Performance.
50. PIROT, M. The effects of the Transcendental Meditation technique upon auditory discrimination. Department of Psychology, University of Victoria, Victoria, British Columbia, Canada, 1973.
Increased Perceptual Acuity: Improved Auditory Temporal Discrimination.
51. PELLETIER, K. R. Influence of Transcendental Meditation upon autokinetic perception. *Perceptual and Motor Skills* 39: 1031–1034, 1974.
Increased Field Independence (Growth of a Stable Internal Frame of Reference, Increased Perceptual Acuity).
52. PELLETIER, K. R. The effects of the Transcendental Meditation program on perceptual style: Increased field independence. Langley Porter Neuropsychiatric Institute, University of California School of Medicine, San Francisco, California, U.S.A. Paper presented at the meeting of the Western Psychological Association, San Francisco, California, 25–28 April 1974.
Increased Field Independence (Growth of a Stable Internal Frame of Reference, Increased Perceptual Acuity).
53. REDDY, M. K.; BAI, A. J. L.; and RAO, V. R. The effects of the Transcendental Meditation program on athletic performance. A.P. Sports Council, Lal Bahadar Stadium, and Nilouffer Hospital Hyderabad, Andhra Pradesh, India, 1974.
Benefits for Athletes: Improved Physiological Functioning—Improved Cardiovascular Efficiency; Improved Respiratory Efficiency (Increased Vital Capacity); Reduction of Blood Pressure to More Ideal Levels; Increased Hemoglobin Concentration. Improved Athletic Performance and Neuromuscular Integration—Increased Running Speed; Improved Standing Broad Jump; Improved Agility; Faster Reactions and Improved Co-ordination. Increased Intelligence.

PART II: PSYCHOLOGY

A: Intelligence, Learning, and Academic Performance

54. TJOA, A. Some evidence that the Transcendental Meditation program increases

intelligence and reduces neuroticism as measured by psychological tests. G.I.T.P., Amsterdam, the Netherlands, 1972.

Benefits for High School Students: Decreased Neuroticism; Greater Intelligence Growth Rate; Increased Fluid Intelligence.

55. TJOA, A. Increased intelligence and reduced neuroticism through the Transcendental Meditation program. Findings previously published as —Meditation, neuroticism and intelligence: A follow-up in *Gedrag: Tijdschrift voor Psychologie (Behavior: Journal of Psychology)* 3: 167–182, 1975.

Increased Fluid Intelligence; Decreased Neuroticism; Decreased Somatic Neurotic Instability.

56. ABRAMS, A. I. Paired-associate learning and recall: A pilot study of the Transcendental Meditation program. Graduate Department of Education, University of California at Berkeley, Berkeley, California, U.S.A., 1972.

Benefits for University Students: Quicker Acquisition of Information (Better Learning Ability); Superior Recall.

57. MISKIMAN, D. E. Performance on a learning task by subjects who practice the Transcendental Meditation technique. Graduate Department of Psychology, University of Alberta, Edmonton, Alberta, Canada, 1972.

Benefits for University Students: Superior Learning Ability.

58. MISKIMAN, D. E. The effect of the Transcendental Meditation program on the organization of thinking and recall (secondary organization). Graduate Department of Psychology, University of Alberta, Edmonton, Alberta, Canada, 1973.

Benefits for University Students: Improved Spontaneous Organization of Memory; Improved Stabilization of Organized Memory; Improved Problem-Solving Ability.

59. COLLIER, R. W. The effect of the Transcendental Meditation program upon university academic attainment. Department of English as a Second Language, College of Arts and Sciences, University of Hawaii, Honolulu, Hawaii, U.S.A., 1973.

Benefits for University Students: Improved Academic Performance.

60. HEATON, D. P., and ORME-JOHNSON, D. W. The Transcendental Meditation program and academic achievement. International Center for Scientific Research, Maharishi International University, Fairfield, Iowa, U.S.A., 1974.

Benefits for University Students: Improved Academic Performance.

61. CORY, R., and HUFNAGEL, P. The effect of the Science of Creative Intelligence course on high school students: A preliminary report. American Foundation for the Science of Creative Intelligence, Hartford, Connecticut, U.S.A., 1974.

Benefits for High School Students: Improved Academic Performance; Reduced State and Trait Anxiety.

62. SHECTER, H. The Transcendental Meditation program in the classroom: A psychological evaluation. Doctoral thesis (summary), Graduate Department of Psychology, York University, North York, Ontario, Canada. *Dissertation Abstracts International* 38 (07) (1977): 3372B. Benefits for High School Students: Improved Intellectual Performance (Increased Problem Solving Ability); Increased Creativity; Increased Energy Level; Increased Innovation, Autonomy, and Independence; Increased Self-Esteem; Increased Tolerance; Increased Ability to Deal with Abstract and Complex Situations; Decreased Anxiety.

63. MACCALLUM, M. J. The Transcendental Meditation program and creativity. Graduate Department of Psychology, California State University at Long Beach, Long Beach, California, U.S.A., 1974. Greater Creativity: Greater Fluency, Flexibility, and Originality of Creative Thought.

B: Development of Personality

64. SEEMAN, W.; NIDICH, S.; and BANTA, T. Influence of Transcendental Meditation on a measure of self-actualization. *Journal of Counseling Psychology* 19: 184–187, 1972. Increased Self-Actualization: Increased Inner-Directedness (Independence, Self-Supportiveness)¹; Increased Spontaneity; Enhanced Self-Regard.

¹The terms in parentheses are taken from the manual of the psychological test employed in order to clarify the characteristics measured by the test.

65. FEHR, T.; NERSTHEIMER, U.; and TORBER, S. Study of personality changes resulting from the Transcendental Meditation program: Freiburger Personality Inventory. Department of Social Affairs, MIU/Forschungsring Schopferische Intelligenz, Dormagen, W. Germany, 1972. Less Nervousness (Less Psychosomatic Disturbance); Less Aggressiveness (Greater Self-Control, Greater Emotional Maturity); Less Depression (Greater Contentment, Greater Self-Confidence); Less Irritability (Greater Calm in Frustrating Situations, Greater Tolerance); Greater Sociability (Greater Friendliness, Greater Liveliness); Greater Placidity (Greater Self-Assuredness, More Good Humor, Less Tendency to Procrastinate); Less Tendency to Dominate (Greater Respectfulness); Less Inhibition (Greater Naturalness, Greater Spontaneity, Greater Self-Sufficiency); Less Neuroticism (Greater Emotional Stability, Less Tension); Greater Self-Reliance (Greater Effectiveness, More Balanced Mood, Greater Vigor).

66. STEK, R. J., and BASS, B. A. Personal adjustment and perceived locus of control among students interested in meditation. *Psychological Reports* 32: 1019–1022,

1973.

Interest in Learning Transcendental Meditation Found to Be Uncorrelated with Personality Factors.

67. BERG, W. P. VAN DEN, and MULDER, B. Psychological research on the effects of the Transcendental Meditation technique on a number of personality variables. Findings previously published in *Gedrag: Tijdschrift voor Psychologie (Behavior: Journal of Psychology)* 4: 206 – 218, 1976 . See also DIJK, H. VAN, and BERG, W. P. VAN DEN. Begripsvaliditeit van de NPV-Zelfwaarde-Ringsschaal. *Heymans Bulletins*, Psychologische Instituten R.U., Groningen, the Netherlands, NR: HB-74–147 Ex.

Less Neuroticism; Greater Self-Esteem; Better Self-Image; Greater Ego Strength; Greater Trust; Greater Satisfaction; Greater Self-Actualization; Less Sensitivity to Criticism; Less Depression; Decreased Sense of Physical Inadequacy.

68. NIDICH, S.; SEEMAN, W.; and SEIBERT, M. Influence of the Transcendental Meditation program on state anxiety. Department of Psychology, University of Cincinnati, Cincinnati, Ohio, U.S.A., 1973.
Decreased Anxiety.

69. HJELLE, L. A. Transcendental Meditation and psychological health. *Perceptual and Motor Skills* 39: 623–628, 1974.

Increased Self-Actualization: Increases in— Time Competence (Ability to Live More Fully in the Present, Ability to Connect Past and Present Meaningfully); Inner-Directedness (Independence, Self-Supportiveness); Self-Actualizing Value (Holding of Values of Self-Actualizing People); Feeling Reactivity (Sensitivity to One's Own Needs and Feelings); Spontaneity; Self-Regard; Capacity for Intimate Contact (Capacity for Warm Interpersonal Relationships). Greater Inner Locus of Control; Less Anxiety.

70. NIDICH, S.; SEEMAN, W.; and DRESKIN, T. Influence of Transcendental Meditation on Self-Actualization: A replication. *Journal of Counseling Psychology* 20: 565–566, 1973.

Increased Self-Actualization: Increases in— Time Competence (Ability to Live More Fully in the Present, Ability to Connect Past, Present, and Future Meaningfully); Inner-Directedness (Independence, Self-Supportiveness); Self-Actualizing Value (Holding of Values of Self-Actualizing People); Feeling Reactivity (Sensitivity to One's Own Needs and Feelings); Spontaneity; Self-Acceptance; Capacity for Intimate Contact (Capacity for Warm Interpersonal Relationships).

71. PENNER, W. J.; ZINGLE, H. W.; DYCK, R.; and TRUCH, S. Does an in-depth Transcendental Meditation course effect change in the personalities of the participants? *Western Psychologist* 4: 104–111, 1974.

Greater Interest in Academic Activities; Greater Intellectual Orientation; Greater Aestheticism; Greater Respect for Traditional Religious Values; Greater

Adaptability of Mental Orientation; Greater Autonomy; Greater Social Extraversion; Less Impulsiveness; Greater Personal Integration (Decreased Social Alienation and Emotional Disturbance); Lower Anxiety Level; Greater Altruism.

72. DAVIES, J. The Transcendental Meditation program and progressive relaxation: Comparative effects on trait anxiety and self-actualization. Department of Psychology, University of New England at Armidale, Armidale, New South Wales, Australia, 1974.
Increased Self-Actualization: Increased Inner-Directedness/Time Competence. Increased Feeling Reactivity (Increased Sensitivity to One's Own Needs and Feelings). Reduced Trait Anxiety.

73. SCHILLING, P. B. The effect of the regular practice of the Transcendental Meditation technique on behavior and personality. Department of Clinical Psychology, Eastern Kentucky University, Richmond, Kentucky, U.S.A., 1974.
Decreased Aggression (Increases in: Tactfulness, Calmness, Easygoingness, Forgiveness, and Consideration; Decreases in: Argumentativeness, Irritability, and Threatening Behavior); Improved Leadership Ability; Growth of a More Brave, Adventurous, Action-Oriented Nature; Increased Affiliation (Increases in: Enjoyment of Friends, Maintenance of Associations with Others, Warmth, Neighborliness, and Co-cooperativeness); Increased Nurturance (Increases in: Need to Give Sympathy and Assistance to Others, Protectiveness, and Consideration for Others); Decreased Use of Drugs; Decreased Use of Alcohol.

74. SHAPIRO, J. The relationship of the Transcendental Meditation program to self-actualization and negative personality characteristics. Doctoral thesis (summary), Department of Psychology, University of Southern California, Los Angeles, California, U.S.A., 1974.
Increased Self-Actualization; Decreased Depression; Decreased Neuroticism; Decreased Aggression; Decreased Anxiety.

75. STERN, M. The effects of the Transcendental Meditation program on trait anxiety. Department of Education, Xavier University, Cincinnati, Ohio, U.S.A., 1974.
Decreased General Anxiety.

76. ORME-JOHNSON, D. W., and DUCK, B. Psychological testing of MIU students: First report. Department of Psychology, Maharishi European Research University, Switzerland, and International Center for Scientific Research, Maharishi International University, Fairfield, Iowa, U.S.A., 1974.
Greater Self-Actualization in Students at Maharishi International University than in Other College Students: Greater—Time Competence (Ability to Live More Fully in the Present, Ability to Connect Past and Present Meaningfully); Inner-Directedness (Independence, Self-Supportiveness); Self-Actualizing Value (Holding of Values of Self-Actualizing People); Spontaneity; Self-Regard; Nature of Man, Constructive (Ability to See Man as Essentially Good); Synergy (Ability to See Opposites of Life as Meaningfully Related); Capacity

for Intimate Contact (Capacity for Warm Interpersonal Relationships).

77. FEHR, T. A longitudinal study of the effect of the Transcendental Meditation program on changes in personality. Department of Social Affairs, MIU/Forschungsring Schöperische Intelligenz, Dormagen, W. Germany, 1974.

Decreased Nervousness (Decreased Psychosomatic Disturbance); Decreased Aggressiveness (Increased Self-Control, Increased Emotional Maturity); Decreased Depression (Increased Contentment, Increased Self-Confidence); Decreased Irritability (Increased Calm in Frustrating Situations, Increased Tolerance); Increased Sociability (Increased Friendliness, Increased Liveliness); Increased Placidity (Increased Self-Assuredness, Increased Good Humor, Decreased Tendency to Procrastinate); Decreased Tendency to Dominate (Increased Flexibility, Respectfulness, and Tolerance); Decreased Inhibition (Increases in: Naturalness, Spontaneity, Self-Sufficiency); Increased Extraversion (Increased Capacity for Warm Interpersonal Relationships); Decreased Neuroticism (Increased Emotional Stability, Decreased Tension); Increased Self-Reliance (Increased Effectiveness, More Balanced Mood, Increased Vigor).

78. FERGUSON, P. C., and GOWAN, J. C. Psychological findings on Transcendental Meditation. Also published as —TM—some preliminary psychological findings in *Journal of Humanistic Psychology* 16(3): 51–60, 1976.

Increased Self-Actualization; Decreased Anxiety; Decreased Depression; Decreased Neuroticism.

PART III: SOCIOLOGY

A: Rehabilitation

79. WINQUIST, W. T. The Transcendental Meditation program and drug abuse: A retrospective study. Department of Sociology, University of California at Los Angeles, Los Angeles, California, U.S.A., 1969.

Decreased Drug Abuse.

80. WALLACE, R. K., et al. Decreased drug abuse with Transcendental Meditation: A study of 1,862 subjects. In *Drug Abuse: Proceedings of the International Conference*, ed. Chris J. D. Zarafonetis, pp. 369–376. Philadelphia: Lea and Febiger, 1972.

Decreased Drug Abuse; Decreased Use of Alcohol; Decreased Use of Cigarettes; Decreased Drug Selling; Increased Tendency to Discourage the Use of Drugs by Others.

81. BRAUTIGAM, E. Effects of the Transcendental Meditation program on drug abusers: A prospective study. Department of Psychology, University of Lund, Lund, Sweden, 1972.

Increased Psychological Stability; Increased Adjustment (Increased Self-

Acceptance, Satisfaction, and Ability to Handle One's Situation); Decreased Anxiety; Decreased Tension; Decreased Psycho-Motor Retardation; Decreased Drug Abuse.

82. SHAFII, M.; LAVELY, R. A.; and JAFFE, R. D. Meditation and marijuana. *American Journal of Psychiatry* 131: 60–63, 1974.
Decreased Drug Abuse.

83. SHAFII, M.; LAVELY, R. A.; and JAFFE, R. Meditation and the prevention of alcohol abuse. *American Journal of Psychiatry* 132: 942–945, 1975.
Decreased Use of Alcohol.

84. LAZAR, Z.; FARWELL, L.; and FARROW, J. T. The effects of the Transcendental Meditation program on anxiety, drug abuse, cigarette smoking, and alcohol consumption. Graduate School of Education, Boston University, Boston, Massachusetts, U.S.A.; Department of Social Relations, Harvard University, Cambridge, Massachusetts, U.S.A.; and Graduate Department of Biochemistry, Brandeis University, Waltham, Massachusetts, U.S.A., 1972.
Decreased Anxiety; Decreased Use of Cigarettes; Decreased Use of Alcohol; Decreased Drug Abuse.

85. KATZ, D. Decreased drug use and prevention of drug use through the Transcendental Meditation program. International Center for Scientific Research, Maharishi International University, Fairfield, Iowa, U.S.A., 1974.
Decreased Use of Alcohol; Decreased Drug Abuse.

86. SCHENKLUHN, H., and GEISLER, M. A longitudinal study of the influence of the Transcendental Meditation program on drug abuse. Drug Rehabilitation Center of Arbeiterwohlfahrt Kreisverband, Mülheim/Ruhr, W. Germany, 1974.
Decreased Drug Abuse.

87. ORME-JOHNSON, D.; KIEHLBAUCH, J.; MOORE, R.; and BRISTOL, J. Personality and autonomic changes in prisoners practicing the Transcendental Meditation technique. University of Texas at El Paso, El Paso, Texas, U.S.A., 1971.
Rehabilitation of Prisoners: Increased Physiological Stability and Psychological Adaptability—Fewer Spontaneous Skin Resistance Responses; Decreased Obsessive-Compulsive Behavior (Increased Behavioral Flexibility); Decreased Social Introversiveness (Increased Social Ease and Outgoingness).

88. CUNNINGHAM, M., and KOCH, W. The Transcendental Meditation program and rehabilitation: A pilot project at the Federal Correctional Institution at Lompoc, California. International Meditation Society, Los Angeles, California, U.S.A., 1973.
Rehabilitation of Prisoners: Decreased Anxiety; Other Improvements in Mental Health.

89. BALLOU, D. The Transcendental Meditation program at Stillwater Prison. Graduate

Department of Social Anthropology, University of Kansas, Lawrence, Kansas, U.S.A., 1973.
Rehabilitation of Prisoners: Decreased Anxiety; Decreased Prison Disciplinary Rule Infractions;
Fewer Parole Violations; Increased Participation in Recreational and Educational Activities;
Decreased Drug Abuse.

90. CHILDS, J. P. The use of the Transcendental Meditation program as a therapy with juvenile offenders. Doctoral dissertation (abbr.), Department of Educational Psychology and Guidance, University of Tennessee, Knoxville, Tennessee, U.S.A., 1973. *Dissertation Abstracts International* 34/08-A, 1973, Order Number AAD74-03806.

Rehabilitation of Juvenile Offenders: Decreased Anxiety; Positive Change as Reported by Both Subjects and Parents; Decreased Drug Abuse; Decreased Court Problems; Increased Happiness; Improved Interpersonal Relationships; Increased Self-Actualization; Enhanced Self-Regard.

91. NIDICH, S. I. A study of the relationship of the Transcendental Meditation program to Kohlberg's stages of moral reasoning. Doctoral thesis (abbr.), Department of Learning and Development, College of Education, University of Cincinnati, Cincinnati, Ohio, U.S.A., 1975. *Dissertation Abstracts International* 36: 4361a-4362a, 1975.

Greater Moral Maturity.

92. ROSS, J. The effects of the Transcendental Meditation program on anxiety, neuroticism, and psychoticism. Master's thesis, Graduate Department of Psychology, University of Edinburgh, Edinburgh, Scotland, 1972.

Decreased Anxiety; Decreased Neuroticism; Decreased Psychoticism.

93. ORME-JOHNSON, D. W.; ARTHUR, G. K.; FRANKLIN, L.; and O'CONNELL, J. The Transcendental Meditation technique and drug abuse counselors. Department of Research and Evaluation, Drug and Alcohol Abuse Control and Prevention Program, Fort Bliss, Texas, U.S.A., 1972.

Improvements in Mental Health: Decreased Anxiety; Decreased Hypochondria; Decreased Internal Conflicts and Confusion; Increased Clarity of Mind, Relaxation, Energy Level, and Sensitivity to Others.

94. DICK, L. D., and RAGLAND, R. E. A study of the Transcendental Meditation program in the service of counseling. Departments of Psychology and Education, University of Oklahoma, Norman, Oklahoma, U.S.A., 1973.

Increased Self-Actualization: Increased Time Competence (Ability to Live More Fully in the Present, Ability to Connect Past, Present, and Future Meaningfully); Increased Inner-Directedness (Independence, Self-Supportiveness); Increased Existentiality (Flexibility in Application of Self-Actualizing Values); Enhanced Self-Regard; Increased Self-Acceptance.

95. BLOOMFIELD, H. H. Some observations on the uses of the Transcendental Meditation program in psychiatry. Institute of Psychophysiological Medicine, San

Diego, California, U.S.A., 1975.

Case Histories Illustrating Benefits in the Treatment of Psychiatric Patients with a Variety of Disorders, Including Anxiety Neurosis, Obsessive-Compulsive Neurosis, Depression, Drug and Alcohol Abuse, Psychosomatic Disorders, and Chronic Insomnia.

B: Productivity and Quality of Life

96. FREW, D. R. Transcendental Meditation and productivity. *Academy of Management Journal* 17: 362–368, 1974.

Increased Productivity: Improved Work Performance; Increased Work Satisfaction; Improved Relations with Co-Workers; Improved Relations with Supervisors; Decreased Turnover Propensity; Decreased Self-Report Climb Orientation/Increased Climb Orientation as Reported by Co-Workers and Supervisors.

97. FRIEND, K. E. Effects of the Transcendental Meditation program on work attitudes and behavior. Graduate School of Business, University of Chicago, Chicago, Illinois, U.S.A., 1975.

Improved Work Performance; Increased Work Satisfaction; Improved Relations with Co-Workers; Improved Relations with Supervisors.

98. BORLAND, C., and LANDRITH III, G. Improved quality of city life through the Transcendental Meditation program: Decreased crime rate. Department of Educational Psychology, Maharishi European Research University, Switzerland, and Department of Psychology, Maharishi International University, Fairfield, Iowa, U.S.A., 1976.

Improved Quality of City Life: Decreased Crime Rate (U.S.A., 1973).

PART IV: THEORETICAL PAPERS

99. DOMASH, L. H. The Transcendental Meditation technique and quantum physics: Is pure consciousness a macroscopic quantum state in the brain? Department of Physics, Maharishi European Research University, Switzerland, 1975.

The Transcendental Meditation Technique and Quantum Physics.

100. ORME-JOHNSON, D. The dawn of the Age of Enlightenment: Experimental evidence that the Transcendental Meditation technique produces a fourth and fifth state of consciousness in the individual and a profound influence of orderliness in society. Department of Psychology, Maharishi European Research University, Switzerland, 1976.

The Dawn of the Age of Enlightenment: Experimental Evidence for Growth of Higher States of Consciousness and a Profound Influence of Orderliness in Society.

101. WALLACE, R. K. Neurophysiology of enlightenment. Paper presented at the 26th International Congress of Physiological Sciences, New Delhi, India, October

1974. Livingston Manor, New York: MIU Press, 1974.
Neurophysiology of Enlightenment.

PART V: THE TM-SIDHI PROGRAM²

²In Volumes 2, 3, and 4, studies on the TM-Sidhi program appear according to their results under the appropriate headings of Parts I, II, and III of each volume.

102. ORME-JOHNSON, D. W.; CLEMENTS, G.; HAYNES, C. T.; and BADAWI, K. Higher states of consciousness: EEG coherence, creativity, and experiences of the sidhis. Centre for the Study of Higher States of Consciousness, Maharishi European Research University, Switzerland, 1977.

Global EEG Coherence during Experience of the TM-Sidhis; Correlations between High EEG Coherence, Higher States of Consciousness, Experience of the TM-Sidhis, and Creativity.

103. ORME-JOHNSON, D. W., and GRANIERI, B. The effects of the Age of Enlightenment Governor Training Courses on field independence, creativity, intelligence, and behavioral flexibility. Centre for the Study of Higher States of Consciousness, Maharishi European Research University, Switzerland, 1977.

Increased Field Independence (Growth of a More Stable Internal Frame of Reference, Increased Perceptual Acuity); Increased Creativity—Increased Figural Fluency and Originality; Increased Intelligence; Increased Behavioral Flexibility Increased Psychomotor Speed and Motor-Cognitive Flexibility (Findings Indicate a Reversal of the Aging Process).

104. CLEMENTS, G., and MILSTEIN, S. L. Auditory thresholds in advanced participants in the Transcendental Meditation program. Department of Experimental Psychology, Maharishi European Research University, Switzerland, and Institut National de la Recherche Scientifique, Centre de Recherche en Sciences de la Santé, Université du Québec, Montreal-Gamelin, Québec, Canada, 1977.

Greatly Improved Auditory Thresholds.

VOLUME 2

CHALMERS, R. A.; CLEMENTS, G.; SCHENKLUHN, H.; and WEINLESS, M., eds. 1989. *Scientific research on Maharishi's Transcendental Meditation and TM-Sidhi program: Collected papers, vol. 2*. Vlodrop, the Netherlands: MVU Press.

PART I: PHYSIOLOGY

The Studies in the First Two Sections Document Changes during the Practice of the Transcendental Meditation Technique Unless Otherwise Stated.

A: Metabolic, Biochemical, and Cardiovascular Changes

105. JEVNING, R.; SMITH, R.; WILSON A. F.; and MORTON, M. E. Alterations in blood flow during Transcendental Meditation. *Psychophysiology* 13: 168 (SPR Abstract # 20), 1976. Changes in Regional Blood Flow Indicative of Increased Blood Flow to the Brain.
106. JEVNING, R.; WILSON, A. F.; SMITH, W. R.; and MORTON, M. Redistribution of blood flow in Transcendental Meditation. Department of Medicine, University of California at Irvine, Orange, California, U.S.A. Paper presented at the American Psychological Society, San Francisco, California, U.S.A., October 1975. Changes in Regional Blood Flow Indicative of Increased Blood Flow to the Brain.
107. MCCUAIG, L. W. Salivary electrolytes, protein, and pH during Transcendental Meditation. *Experientia* 30(9): 988–989, 1974. Increased Concentration of Salivary Electrolytes and Protein.
108. STEHLE, R. Ventilation, heart rate, and respiratory partial pressures of athletes practicing the Transcendental Meditation technique. Diplomarbeit (abbr.), Deutsche Sporthochschule Köln, Cologne, W. Germany, 1975. Indications of Deep Rest in Athletes: Decreased Metabolic Rate (Decreased Oxygen Consumption and Decreased Carbon Dioxide Elimination); Decreased Respiration Rate; Decreased Heart Rate; Decreased Minute Ventilation.
109. BEVAN, A. J. W.; YOUNG, P. M.; WELLBY, M. L.; NENADOVIC, P.; and DICKINS, J. A. Endocrine changes in relaxation procedures. *Proceedings of the Endocrine Society of Australia* 19: 59 (Abstract), 1976. Reduction in Biochemical Index of Stress: Decreased Plasma Cortisol Levels. Biochemical Indication of Reduced Stress during Activity: Decreased Urinary Free Cortisol Levels.
110. BUJATTI, M., and RIEDERER, P. Serotonin, noradrenaline, dopamine metabolites in Transcendental Meditation technique. *Journal of Neural Transmission* 39: 257–267, 1976. Changes in Neurotransmitter Balance: Increased Levels of Serotonin Metabolite (Increased 5-HIAA Levels); Decreased Levels of Adrenaline and Noradrenaline Metabolite (Decreased VMA Levels) and Higher Levels of 5-HIAA outside the Practice of Transcendental Meditation.
111. JEVNING, R., and WILSON, A. F. Acute decline in adrenocortical activity during Transcendental Meditation. Department of Medicine, University of California at Irvine, Orange, California, U.S.A., 1977. Reduction in Biochemical Index of Stress: Decreased Plasma Cortisol Levels.
112. JEVNING, R., and WILSON, A. F. Altered red cell metabolism in TM. *Psychophysiology* 14: 94 (Abstract), 1977.

Fundamental Change in Cellular Metabolism: Reduced Glucose Metabolism in Red Blood Cells.

113. JEVNING, R.; PIRKLE, H. C.; and WILSON, A. F. Behavioral alteration of plasma phenylalanine concentration. *Physiology & Behavior* 19: 611–614, 1977.
Increased Plasma Phenylalanine Levels.

B: Electrophysiological and Electroencephalographic Changes

114. KOBAL, G.; WANDHÖFER, R. A.; and PLATTIG, K.-H. EEG power spectra and auditory evoked potentials in Transcendental Meditation (TM). *Pflügers Archiv*, Supplement 359: 191, R 96, 1975.

Improved Efficiency of Information Transfer in the Brain: Shorter Latencies of Auditory Evoked Potentials (Both during and outside the Practice of Transcendental Meditation). Increased EEG Alpha Power.

115. KRAHNE, W., and TANELI, B. EEG and Transcendental Meditation. *Pflügers Archiv*, Supplement 359: 190, R 95, 1975.

EEG Indications of Increased Orderliness of Brain Functioning: High Amplitude Alpha and Theta Activity in All Cortical Regions.

116. WANDHÖFER, A.; KOBAL, G.; and PLATTIG, K.-H. Shortening of latencies of human auditory evoked brain potentials during the Transcendental Meditation technique. *Zeitschrift für Elektroenzephalographie und Elektromyographie EEG-EMG* 7: 99–103, 1976. (Transl.)

Improved Efficiency of Information Transfer in the Brain: Shorter Latencies of Auditory Evoked Potentials (Both during and outside the Practice of Transcendental Meditation).

117. DASH, P., and ALEXANDER, C. N. Electrophysiological characteristics during the Transcendental Meditation program and napping: A pilot study. Divisions of Natural and Social Sciences, University of California at Santa Cruz, Santa Cruz, California, U.S.A., 1976.

EEG Differentiation between Transcendental Meditation and Napping.

118. BANQUET, J. P.; HAYNES, C.; HEBERT, R.; and REBER, B. Analysis of sleep in altered states of consciousness by classical EEG and coherence spectra. *Electroencephalography and Clinical Neurophysiology* 43(4): 503, E 203 (Abstract), 1977.

EEG Indications of Lessened Sleep Requirement.

119. BANQUET, J. P.; HAYNES, C.; HEBERT, R.; and REBER, B. Sleep and dream in altered states of consciousness. LENA, La Salpêtrière, Paris, France, and EEG Laboratory, Maharishi European Research University, Seelisberg, Switzerland, 1976.

EEG Indications of Lessened Sleep Requirement.

120. BENNETT, J. E., and TRINDER, J. Hemispheric laterality and cognitive style associated with Transcendental Meditation. *Psychophysiology* 14: 293–296, 1977.

Greater Adaptability of Brain Functioning outside the Practice of Transcendental Meditation: Greater Lateral EEG Asymmetry during Right and Left Hemisphere Tasks.

121. HEBERT, R., and LEHMANN, D. Theta bursts: An EEG pattern in normal subjects practicing the Transcendental Meditation technique. *Electroencephalography and Clinical Neurophysiology* 42: 397–405, 1977.

EEG Indications of Increased Inner Satisfaction: Synchronous Theta Bursts.

C: Physiological Efficiency and Stability

122. SULTAN, S. E. A study of the ability of individuals trained in Transcendental Meditation to achieve and maintain levels of physiological relaxation. Master's thesis (abbr.), School of Human Behavior, United States International University, San Diego, California, U.S.A., 1975.

Electromyographic Evidence of Deep Muscular Relaxation; Greater Ability to Maintain Relaxation during Activity.

123. DANIELS, D. Comparison of the Transcendental Meditation technique to various relaxation procedures. Department of Psychology, Washington Singer Laboratories, University of Exeter, Exeter, Devon, England, 1976.

Improved Resistance to Stress: Greater Autonomic Stability—Greater Stability of Skin Resistance in Response to Stressful Stimuli. Improved Auditory Discrimination and Greater Ability to Process Information at Speed (Superior Dichotic Listening).

D: Health

124. LOVELL-SMITH, H. D.; DICKIE, A.; and ROBINSON, J. Blood pressure and plasma cholesterol levels before and after learning Transcendental Meditation. University of Otago Medical School, Dunedin, New Zealand, 1975.

Reduction of Blood Pressure to More Ideal Levels in Both Hypertensive and Normotensive Subjects.

125. DONER, D. W. JR. The Transcendental Meditation technique—a "self-care" program for the dialysis/transplant patient. Findings previously published in *Journal of the American Association of Nephrology Nurses and Technicians* 3(3): 119–125, 1976.

Improved Mental and Physical Health in Patients on a Kidney Transplant/Dialysis Program: Decreased Blood Pressure; Decreased Anxiety; Increased Independence; Enhanced Self-Image; Improved Sense of Well-Being.

126. FUSON, J. W. The effect of the Transcendental Meditation program on sleeping and dreaming patterns. Unpublished doctoral dissertation (abbr.), Yale Medical School, New Haven, Connecticut, U.S.A., 1976.

Improvements in Sleeping and Dreaming Patterns: Improved Quality of Sleep; Decreased Time to Fall Asleep; More Rested on Awakening; Decreased Awakenings per Night; Decreased Time to Awaken Fully; Decreased Drowsiness; Decreased Lethargy; Decreased Daytime Napping; Decreased Number of Dreams Remembered; Decrease in Complexity of Dreams; Decrease in Unpleasant Emotional Content of Dreams; Decrease in Recurring Dreams; Decreased Need for Sleep Medications. Decreased Use of Alcohol. Improved Reported State of Mental Health. Reduced Need for Medical Attention.

127. SUURKÜLA, J. The Transcendental Meditation technique and the prevention of psychiatric illness. Vasa Hospital University of Gothenburg, Gothenburg, Sweden, 1977. Epidemiological Evidence for Prevention of Psychiatric Illness.

E: Motor and Perceptual Ability, and Athletic Performance

128. GRAHAM, J. The effects of Transcendental Meditation on auditory thresholds. Department of Experimental Psychology, University of Sussex, Brighton, Sussex, England, 1971. Increased Perceptual Acuity: Improved Auditory Frequency and Amplitude Discrimination.

129. HARDESTY, M. J. The effect of Transcendental Meditation on reaction time. Western Kentucky University, Bowling Green, Kentucky, U.S.A., 1972. Improved Mind-Body Co-ordination: Faster Reactions (Simple and Choice Visual Reaction Time).

130. REDDY, M. K. The role of the Transcendental Meditation program in the promotion of athletic excellence: Long- and short-term effects and their relation to activation theory. Master's thesis, Centre for the Study of Higher States of Consciousness, Maharishi European Research University, Switzerland, 1976. Benefits for Athletes: A Unique State of Deep Rest during Transcendental Meditation—Decreased Metabolic Rate (Decreased Oxygen Consumption); Increased Basal Skin Resistance; Fewer Spontaneous Skin Resistance Responses. Improved Physiological Functioning outside the Practice of Transcendental Meditation—Improved Cardiovascular Efficiency; Improved Respiratory Efficiency (Increased Vital Capacity). Improved Athletic Performance and Neuromuscular Integration—Improved Running Speed; Improved Standing Broad Jump; Improved Agility; Faster Reactions.

131. MARTINETTI, R. F. Influence of Transcendental Meditation on perceptual illusion: A pilot study. *Perceptual and Motor Skills* 43: 822, 1976. Improved Perceptual Ability: Lower Incidence of Perceptual Illusions.

PART II: PSYCHOLOGY

A: Intelligence, Learning, and Academic Performance

132. NATARAJ, P., and RADHAMANI, M. G. The Transcendental Meditation program and its effects on psychological functions in secondary school students of a rural Indian high school. Department of Psychology, Maharani's College, Mysore, India. Research presented at the International Conference on 'Veda and Science', Bangalore, Karnataka, India, 25–30 June 1975. Benefits for High School Students: Improved Concentration; Improved Reading Comprehension; Improved Memory.

133. OVERBECK, K.-D., and TÖNNIES, S. E. Einige Effekte der Transzendentalen Meditation bei lernbehinderten Sonderschülern. Diplomarbeit of first author (abbr.), Psychologisches Institut III, University of Hamburg, Hamburg, W. Germany, 1975. Benefits for School Children with Learning Problems: Decreased Anxiety; Decreased Examination Anxiety; Decreased School Dislike.

134. SCHER, D. The effects of Transcendental Meditation on free recall. Master's thesis (abbr.), State University College, New Paltz, New York, U.S.A., 1975. Improved Memory and Organization of Memory—Effect More Pronounced in Long-Term Meditators.

135. HARRISON, S. D.; PAGANO, R.; and WARKENBURG, S. Meditation and right hemispheric functioning—spatial localization. In *Proceedings of the Biofeedback Research Society*, Seventh Annual Meeting, Colorado Springs, Colorado, U.S.A., 27 February-2 March 1976, p. 33 (Abstract). More Efficient Functioning of the Right Cerebral Hemisphere: Better Spatial Localization.

136. BERRETTINI, R. B. The effects of the Transcendental Meditation program on short-term recall performance. Master's thesis (abbr.), Department of Education, Wilkes College, Wilkes-Barre, Pennsylvania, U.S.A., 1976. Benefits for College Students: Improved Short-Term Memory, Ability to Focus Attention, and Spontaneous Organization of Memory.

137. HARDING, S. D. The Transcendental Meditation program in British secondary schools. Department of Experimental Psychology, University of Sussex, Brighton, Sussex, England, 1976. Decreased Neuroticism in Secondary School Students.

138. BROWN, M. Higher education for higher consciousness: A study of students at Maharishi International University. Doctoral dissertation (abbr.), University of California at Berkeley, Berkeley, California, U.S.A., *Dissertation Abstracts International* 38, 649A–650A, 1976. Benefits for Students Resulting from Maharishi's Integrated System of Education at Maharishi International University: Greater Interest in Academic Activities; Greater Commitment to Higher Education; Greater Intellectual and Scientific Orientation; Greater Aesthetic Orientation; Greater Respect for

Traditional Religious Values; Greater Optimism about the Future of Society; Greater Altruism (Greater Commitment to Helping Others and Improving Society); Greater Sense of Social Responsibility; Greater Tolerance of Authority; Greater Trust; Greater Sociability; Greater Psychological Stability; Greater Commitment to Personal Growth; Less Anxiety; Less Impulsiveness.

139. JACKSON, Y. Learning disorders and the Transcendental Meditation program: Retrospects and prospects. A preliminary study with economically deprived adolescents. Doctoral thesis (abbr.), University of Massachusetts, Amherst, Massachusetts, U.S.A., 1977. *Dissertation Abstracts International* 38 (6): 3351A, 1977.

Increased Self-Actualization in Economically Deprived Adolescents with Learning Problems: Increased Inner-Directedness (Independence, Self-Supportiveness)³; Increased Self-Regard. Decreased Dropout Rate from School.

³The terms in brackets are taken from the manual of the psychological test employed in order to clarify the characteristics measured by the text.

140. PAGANO, R. R., and FRUMKIN, L. R. The effect of Transcendental Meditation on right hemispheric functioning. *Biofeedback and Self-Regulation* 2(4): 407–415, 1977. Superior Synthetic and Holistic Thinking: Enhanced Tonal Memory.

B: Development of Personality

141. CURTIN, T. G. The relationship between Transcendental Meditation and adaptive regression. Doctoral thesis (abbr.), School of Education, Boston University, Boston, Massachusetts, U.S.A., 1973.

Improved Mental Health: Increased Capacity for 'Adaptive Regression' (Conscious Experience of the Inner Self and Ability to Bring the Inner Self to Healthy Expression).

142. BOESE, E., and BERGER, K. Psychological effects of Transcendental Meditation. Department of Behavioral Science, Milton S. Hershey Medical Center, Pennsylvania State University, Hershey, Pennsylvania, U.S.A., 1971.

Decreased Number of Situations in Life Felt to Be a Problem; Decreased Number of Serious Problems Experienced; Decreased Hostility; Enhanced Self-Concept.

143. HAHN, H. R., and WHALEN, T. E. The effects of the Transcendental Meditation program on levels of hostility, anxiety, and depression. Master's thesis (abbr.), Department of Educational Psychology, California State University at Hayward, Hayward, California, U.S.A., 1974.

Decreased Hostility; Decreased Anxiety; Decreased Depression.

144. ROSENTHAL, J. M. The effect of the Transcendental Meditation program on self-actualization, self-concept, and hypnotic susceptibility. Master's thesis (abstract), Department of Psychology, University of Hawaii, Honolulu, Hawaii, U.S.A., 1974.
Benefits for University Students: Increased Self-Actualization; Enhanced Self-Concept.
145. FLOYD III, W. T., and HAYNES, J. The influence of Transcendental Meditation on anxiety. Master's thesis of first author (abbr.), Department of Psychology, North Texas State University, Denton, Texas, U.S.A., 1974.
Decreased Anxiety.
146. WILLIS, C. Transcendental Meditation and its influence on the self-concept. Texas A&M University, College Station, Texas, U.S.A., 1974.
Better Self-Concept and Degree of Adjustment; Improved Psychological Health.
147. WEISS, C. The immediate effect of the Transcendental Meditation technique and theoretical reflections upon the psychology and physiology of subjective well-being. Diplomarbeit (abbr.), Institute of Psychology, University of the Saarland, Saarbrücken, W. Germany, 1975.
Increased Elevated Mood; Increased Mental Clarity and Wakefulness; Increased Readiness for Activity; Decreased Vulnerability; Decreased Nervousness; Decreased Fatigue; Decreased Drowsiness; Decreased Lethargy; Decreased Depressed Mood; Decreased Introversion; Decreased Aggressive Irritation.
148. GUPTA, N. C. Effects of Transcendental Meditation on anxiety and self-concept. Department of Educational Psychology, Ball State University, Muncie, Indiana, U.S.A., 1974.
Enhanced Self-Concept; Decreased Anxiety.
149. GRIGGS, S. T. A preliminary study into the effect of Transcendental Meditation on empathy. Master's thesis (abbr.), School of Human Behavior, United States International University, San Diego, California, U.S.A., 1976.
Greater Empathy.
150. THROLL, D. A., and THROLL, L. A. The effect of a three-month residence course upon the personalities of experienced meditators. Victoria University, Wellington, New Zealand, 1977.
Increased Ego Strength, Emotional Stability and Maturity, and Decreased Overreactionary Behavior; Increased Emotional Harmony and Absence of Regressive Behavior; Increased Emotional Strength and Lessening of Unwelcome Thoughts or Compulsive Habits; Decreased Depression, Showing a Calmer, More Confident Attitude. Increases in—Intelligence; Self-Sufficiency and Resourcefulness; Contentment; Enthusiasm for Work; Trust; Tolerant and Participating Attitude; Creativity. Decreases in—Anxiety and Tension; Use of Alcohol; Use of Cigarettes; Need for Tranquillizers and Other Prescribed Drugs.

151. RUSSIE, R. E. The influence of Transcendental Meditation on positive mental health and self-actualization; and the role of expectation, rigidity, and self-control in the achievement of these benefits. Doctoral thesis (abbr.), California School of Professional Psychology, Los Angeles, California, U.S.A., 1975.

Increased Self-Actualization: Increases in—Time Competence (Ability to Live More Fully in the Present, Ability to Connect Past, Present, and Future Meaningfully); Inner-Directedness (Independence, Self-Supportiveness); Self-Actualizing Value (Holding of Values of Self-Actualizing People); Feeling Reactivity (Sensitivity to One's Own Needs and Feelings); Spontaneity; Self-Regard; Self-Acceptance; Capacity for Intimate Contact (Capacity for Warm Interpersonal Relationships).

152. MADSEN, W. C. Transcendental Meditation and the flexibility of constructions of reality. Department of Psychology, Stanford University, Palo Alto, California, U.S.A., 1976.

Greater Open-Mindedness: Greater Flexibility of Constructions of Reality.

153. THROLL, D. A. The effects of the Transcendental Meditation technique upon adolescent personality. Master's thesis (abbr.), Victoria University, Wellington, New Zealand, 1978.

Increased Self-Actualization: Increases in— Time Competence (Ability to Live More Fully in the Present, Ability to Connect Past, Present, and Future Meaningfully); Inner-Directedness (Independence, Self-Supportiveness); Self-Actualizing Value (Holding of Values of Self-Actualizing People); Feeling Reactivity (Sensitivity to One's Own Needs and Feelings); Spontaneity; Self-Regard; Nature of Man, Constructive (Ability to See Man as Essentially Good); Capacity for Intimate Contact (Capacity for Warm Interpersonal Relationships). Increased Ego Strength and Emotional Maturity, Decreased Overreactionary Behavior; Increased Boldness and Self-Sufficiency, Decreased Inhibition; Increased Self-Reliance, Practicality, Realism, and Logical Behavior; Increased Tolerant and Conciliatory Attitudes; Decreased Instability, Insomnia, and Hypochondriacal and Neurasthenic Symptoms; Increased Self-Control, Persistence, Foresight, Consideration of Others, and Regard for Etiquette; Increased Relaxed, Unfrustrated, Guilt-Free Behavior; Increased Outgoingness and Tendency to Participate; Decreased Anxiety; Increased Self-Sufficiency. Decreased Need for Sleep Medication and Pain Relievers; Decreased Use of Cigarettes; Decreased Use of Alcohol; Decreased Drug Abuse.

154. DILLBECK, M. C. The effect of the Transcendental Meditation technique on anxiety level. *Journal of Clinical Psychology* 33(4): 1076–1078, 1977.

Decreased Anxiety in University Students.

155. BOSMAJIAN, L. S. Role of expectancy and pretreatment personality in subjects' self-actualizing changes while practicing Transcendental Meditation. Doctoral thesis (abbr.), Department of Psychology, The George Washington University, Washington, D.C., U.S.A., 1977.

Increased Self-Actualization: Increases in— Time Competence (Ability to Live

More Fully in the Present, Ability to Connect Past and Present Meaningfully); Inner-Directedness (Independence, Self-Supportiveness).

156. NYSTUL, M. S., and GARDE, M. Comparison of self-concepts of Transcendental Meditators and nonmeditators. *Psychological Reports* 41: 303–306, 1977.
Enhanced Self-Concept: Less Likely to Qualify Self-Description; Fewer Personality Defects; Greater Self-Esteem; Better Opinion of Oneself; Greater Self-Satisfaction; Greater Sense of Personal Worth; Greater Satisfaction with One's Moral Worth and Relationship to God and Religion.

PART III: SOCIOLOGY

A: Rehabilitation

157. CANDELENT, T., and CANDELENT, G. Teaching Transcendental Meditation in a psychiatric setting. *Hospital & Community Psychiatry* 26(3): 156–159, 1975.
Benefits for Psychiatric Patients with Schizophrenia, Neurosis, Personality Disorders, and Alcohol and Drug Problems: Decreased Anxiety and Tension; Decreased Overactive or Impulsive Behavior; Improved Sleep Patterns (Decreased Awakenings per Night, Improved Quality of Sleep).

158. RAMIREZ, J. The Transcendental Meditation program as a possible treatment modality for drug offenders: Evaluation of a pilot project at Milan Federal Correctional Institution. Department of Forensic Studies, Indiana University, Bloomington, Indiana, U.S.A., 1975.
Rehabilitation of Imprisoned Drug Offenders: Enhanced Self-Esteem; Indications of Increased Emotional Stability and Maturity—Decreased Depression; Decreased Neuroticism; Decreased Guilt; Decreased Psychasthenia; Decreased Hypomania; Decreased Schizophrenia; Increased Social Responsibility. Indications of Decreased Aggression—Decreased Hostility; Decreased Assault; Decreased Irritability; Decreased Suspicion; Decreased Resentment; Decreased Psychopathic Deviation.

159. BLOOMFIELD, H. H., and KORY, R. The Transcendental Meditation program, spiritual crisis and enlightenment. Findings previously published in *Holistic way to health and happiness: A new approach to complete lifetime wellness*. 243–259. New York: Simon and Schuster, 1978.
Resolution of Spiritual Crisis through Development of Integration of Personality: Growth of Enlightenment.

160. FERGUSON, R. E. The Transcendental Meditation program at Massachusetts Correctional Institution Walpole: An evaluation report. Institute for Social Rehabilitation, Pacific Palisades, Los Angeles, California, U.S.A., 1977.
Rehabilitation of Prisoners: Decreased Anxiety; Decreased Hostility; Decreased Prison Disciplinary Rule Infractions; Improved Sleep Patterns (Decreased Time to Fall Asleep, Decreased Awakenings per Night, Improved Quality of Sleep).

161. FERGUSON, R. E. A self-report evaluation of the effects of the Transcendental Meditation program at Massachusetts Correctional Institution Walpole—a follow-up. Institute for Social Rehabilitation, Pacific Palisades, Los Angeles, California, U.S.A., 1978.

Rehabilitation of Prisoners: Increased Work Efficiency; Increased Ability to Handle Stress and Tension; Increased Ability to Deal with Others; Decreased Use of Alcohol and Prescribed and Non-Prescribed Drugs; Decreased Use of Cigarettes; Decreased Drug Abuse.

162. DHANARAJ, H. The influence of Transcendental Meditation on cessation of drug use: Some preliminary findings. Findings previously published in *RODA Summer Scholarship Abstracts*, National Health and Welfare, Canada, 1973.

Decreased Drug Abuse; Decreased Use of Cigarettes; Decreased Use of Alcohol.

163. MONAHAN, R. J. Secondary prevention of drug dependence through the Transcendental Meditation program in metropolitan Philadelphia. *The International Journal of the Addictions* 12(6): 729–754, 1977.

Decreased Drug Abuse; Decreased Use of Cigarettes; Decreased Use of Alcohol; Decreased Use of Caffeine; Decreased Need for Tranquillizers and Other Prescribed Drugs.

B: Productivity and Quality of Life

164. JONSSON, C. Organizational development through the Transcendental Meditation program: A study of relationships between the Transcendental Meditation program and certain efficiency criteria. Unpublished master's thesis (abbr.), Department of Business Administration, Stockholm University, Stockholm, Sweden, 1975.

Fulfillment of Goals of Organizational Development: Ability to Accomplish More with Less Effort; Greater Alertness, Attentiveness, and Initiative; Greater Self-Confidence; Greater Decision Making Ability; Greater Ability to Assign Priorities; Greater Ease in Making Contacts with Other People; Greater Ability to Cooperate with Others and Greater Respect for the Views of Others; Greater Tolerance; Less Easily Irritated; Less Often Angry; Less Tendency to Worry about Other People's Opinions; Less Often Tired.

165. SUAREZ, V. W. The relationship of the practice of Transcendental Meditation to subjective evaluations of marital satisfaction and adjustment. Unpublished master's thesis (abbr.), School of Education, University of Southern California, Los Angeles, California, U.S.A., 1976.

Greater Marital Satisfaction: Greater Adjustment; Greater Happiness and Harmony; Greater Intimacy; Greater Acceptance of One's Spouse; Greater Admiration of One's Spouse; Greater Agreement on Conduct and Recreation.

166. HATCHARD, G. Influence of the Transcendental Meditation program on crime rate in suburban Cleveland. Cleveland World Plan Center, Cleveland, Ohio, U.S.A.,

1977.

Improved Quality of City Life: Decreased Crime Rate in Suburban Communities (U.S.A., 1974–1976).

PART IV: REVIEW PAPERS

Papers 167 to 189 review the application of the Transcendental Meditation and TM-Sidhi program in the areas of health, education, development of personality, rehabilitation, and quality of life.

A: Health

167. GRÄF, H.-D. Transzendente Meditation—ein Weg in der psychophysischen Therapie. *Ärzteblatt Baden-Württemberg* (6), 1975 .

168. TOANE, E. B. The Transcendental Meditation program. *Journal of the Canadian Medical Association* 114: 1095–1096, 1976.

169. STUTZ, E. Transzendente Meditation in der Medizin. *Medizinische Klinik* 72(20): 905–908, 1977.

170. ORME-JOHNSON, D. EEG coherence during transcendental consciousness. *Electroencephalography and Clinical Neurophysiology* 43(4): 581–582, E 487 (Abstract), 1977.

171. RIGBY, B. Higher states of consciousness through the Transcendental Meditation program: A literature review. Department of Psychiatry, Maharishi European Research University, Seelisberg, Switzerland. Rheinweiler, W. Germany: MERU Press, 1978.

172. GRÄF, D. Die Technik der Transzendentalen Meditation und ihre Wirkungen auf die Gesundheit. *Erfahrungsheilkunde* 27(3): 99–102, 1978.

173. KANELAKOS, D. P. Transcendental consciousness: Expanded awareness as a means of preventing and eliminating the effects of stress. In *Stress and anxiety*, C.D. Spielberger and I.G. Sarason (Eds.), Vol. 5, pp. 261–315. Washington, D.C.: Hemisphere Publishing Corporation, 1978.

174. GRÄF, D. Die Transzendente Meditation (TM) und ihre therapeutischen Möglichkeiten. *Zeitschrift für Allgemeinmedizin* 54(12): 701–709, 1978.

175. KROENER, D. Transzendente Meditation und ihre Indikationen für den niedergelassenen Arzt. *Biologische Medizin* 9(3): 122–127, 1980.

B: Education

176. LEVINE, P. H. Transcendental Meditation and the Science of Creative Intelligence.

Phi Delta Kappan 54(4): 231–235, 1972.

177. DRISCOLL, F. TM as a secondary school subject. *Phi Delta Kappan* 54(4): 236–237, 1972.

178. PRICE, J. F. Education and the Science of Creative Intelligence. *Vestes: the Australian Universities' Review* 17(1): 28–37, 1974.

179. CLEMENTS, G., and RIGBY, B. P. The Science of Creative Intelligence offers fulfillment in education: Self-realization found in the simplest form of awareness—the field of all possibilities. Paper presented at the Seventh World Congress, International Association for the Advancement of Educational Research, Gent, Belgium, July 1977. Rheinweiler, W. Germany: MERU Press, 1977.

C: Personality

180. SHELLY, M. Meditation and the great evolution. Department of Psychology, University of Kansas, Lawrence, Kansas, U.S.A., 1972.

D: Rehabilitation

181. KNIFFKI, K.-D. Transzendente Meditation—TM—u.a. eine nichtchemische Methode gegen Drogenmißbrauch. *Niedersächsisches Ärzteblatt* 44(24): 805–809, 1971.

182. COX, S. B. Transcendental Meditation and the criminal justice system. *Kentucky Law Journal* 60(2), 1971–1972.

183. SYKES, D. E. Transcendental Meditation—as applied to criminal justice reform, drug rehabilitation and society in general. *The University of Maryland Law Forum* 3(2), 1973.

184. MARCUS, J. B. Transcendental Meditation: A new method of reducing drug abuse. *Drug Forum* 3(2): 113–136, 1974.

185. FULLERMAN, F. J. The Transcendental Meditation program: New hope for criminal rehabilitation. United States Probation Officer, United States District Court, Northern District of Illinois, Illinois, U.S.A. Paper presented at the First International Conference on Criminology and Consciousness, Maharishi International University, Fairfield, Iowa, U.S.A., 29–30 October 1977.

186. KANELAKOS, D. P.; RIGBY, B. P.; BLOOMFIELD, H. H.; CHARLES, B. M.; CLEMENTS, G.; DAVIS, B. V.; and MEAD, G. Enlightenment for ideal rehabilitation: Expansion of consciousness as the basis of the restoration of creative intelligence. The effectiveness of the Transcendental Meditation program for rehabilitation. Paper presented at the Third International Conference on Drug

Dependency, Liverpool, England, 6 April 1976. Rheinweiler, W. Germany: MERU Press, 1976.

187. STUTZ, E. Transzendente Meditation in der Behandlung Drogenabhängiger. *Das öffentliche Gesundheitswesen* 39: 759–766, 1977.

188. RIGBY, B. Enlightenment in world psychiatry: The Transcendental Meditation technique—new light on consciousness. Paper presented at The Sixth World Congress of Psychiatry, Honolulu, Hawaii, U.S.A., 28 August–3 September 1977. Rheinweiler, W. Germany: MERU Press, 1977.

E: Quality of Life

189. BAUMANN, E. Neurophysiologische Integration als Grundlage für Lernen und Arbeiten in der Ökologie. *Verhandlungen der Gesellschaft für Ökologie*, Kiel 1977, 6: 557–560, 1978.

VOLUME 3

CHALMERS, R. A.; CLEMENTS, G.; SCHENKLUHN, H.; and WEINLESS, M., eds. *Scientific research on Maharishi's Transcendental Meditation and TM-Sidhi program: Collected papers, vol. 3*. Vlodrop, the Netherlands: MVU Press, 1989.

PART I: PHYSIOLOGY

The Studies in the First Two Sections Document Changes during the Practice of the Transcendental Meditation Technique Unless Otherwise Stated.

A: Metabolic, Biochemical, and Cardiovascular Changes

190. JEVNING, R.; WILSON, A. F.; and DAVIDSON, J. M. Adrenocortical activity during meditation. *Hormones and Behavior* 10(1): 54–60, 1978.

Reduction in Biochemical Index of Stress: Decreased Plasma Cortisol Levels.

191. JEVNING, R.; WILSON, A. F.; and SMITH, W. R. The Transcendental Meditation technique, adrenocortical activity, and implications for stress. *Experientia* 34: 618–619, 1978.

Reduction in Biochemical Index of Stress: Decreased Plasma Cortisol Levels.

192. JEVNING, R.; WILSON, A. F.; and VANDER LAAN, E. F. Plasma prolactin and growth hormone during meditation. *Psychosomatic Medicine* 40(4): 329–333, 1978.

Change in Hormonal Balance: Small Increase in Plasma Prolactin Levels following Transcendental Meditation.

193. BAUHOFER, U. Die kreislaufphysiologischen Auswirkungen bei der

Transzendentalen Meditation. Unpublished doctoral dissertation, Faculty of Medicine, University of Würzburg, Würzburg, W. Germany. 1978.

Changes in Cardiac Output and Stroke Volume.

194. JEVNING, R.; WILSON, A. F.; SMITH, W. R.; and MORTON, M. E. Redistribution of blood flow in acute hypometabolic behavior. *American Journal of Physiology* 235(1): R89–R92, 1978.

Changes in Regional Blood Flow and Cardiac Output Indicative of Increased Blood Flow to the Brain. Reduction in Biochemical Index of Stress: Decreased Arterial Lactate Levels. Indication of Deep Rest: Decreased Respiratory Minute Volume.

195. JEVNING, R., and WILSON, A. F. Behavioral increase of cerebral blood flow. *The Physiologist* 21: 60 (Abstract), 1978.

Large Increase in Blood Flow to the Brain.

196. ARNHOLD, E.; CHARLES, B. M.; GANDHI, J. S.; BRAGG, M. C.; and RIGBY, B. P. Endocrinological changes following instruction in the TM-Sidhi program. In *XIVth International Congress of Internal Medicine Abstracts*, Rome, Italy, October 1978, p. 363. Amsterdam: Excerpta Medica.

Changes in Hormonal Balance as a Result of the TM-Sidhi Program: Short- and Long-Term Changes in Pituitary Hormone Levels Indicative of Increased Sensitivity in Endocrine Control Systems.

197. SEVEREIDE, C. J. Physiological and phenomenological aspects of Transcendental Meditation. Master's thesis (abbr.), Department of Psychology, University of Trondheim, Trondheim, Norway, 1979.

Experience of Pure Consciousness Associated with: Marked Reductions in Respiration and Heart Rates; Periodic Breath Suspension; Absence of Spontaneous Skin Resistance Responses. Maintenance of Relaxed Style of Physiological Functioning Outside of Meditation: Fewer Spontaneous Skin Resistance Responses.

198. LANG, R.; DEHOF, K.; MEURER, K. A.; and KAUFMANN, W. Sympathetic activity and Transcendental Meditation. *Journal of Neural Transmission* 44: 117–135, 1979.

Integration of Opposite Styles of Physiological Functioning: Simultaneous Increased Activity of Sympathetic and Parasympathetic Branches of Autonomic Nervous System.

199. BEVAN, A. J. W.; SYMONS, R. G.; BENG, C. G.; and WELLBY, M. L. Short-term endocrine changes in Transcendental Meditation. *Proceedings of the Endocrine Society of Australia* 2 (Abstract 56), 1979.

Changes in Hormonal Balance: Decreased Serum Growth Hormone Levels.

200. BEVAN, A. J. W. Endocrine changes in Transcendental Meditation. *Clinical and Experimental Pharmacology and Physiology* 7: 75–76 (Abstract), 1980.

Biochemical Indications of Reduced Stress: Decreased Serum Growth Hormone Levels; Decreased Serum Cortisol Levels; Decreased Serum Triiodothyronine Levels.

201. ROBERTSON, D. W., and PETERSON, J. W. Change in cardiac output during Transcendental Meditation as measured by noninvasive impedance plethysmography. Departments of Physical Education and Biomedical Engineering, University of Texas at Austin, Austin, Texas, U.S.A., 1980.

Changes in Cardiac Output and Stroke Volume.

202. SUBRAHMANYAM, S., and PORKODI, K. Neurohumoral correlates of Transcendental Meditation. *Journal of Biomedicine* 1: 73–88, 1980.

Changes in Biochemical and Hormonal Balance outside the Practice of Transcendental Meditation: Decreased Levels of Catecholamine and Steroid Metabolites; Decreased Plasma Cortisol Levels. Improved Cardiovascular Health: Decreased Serum Cholesterol Levels. Benefits for Patients with Aggressive Behavior, Mental Retardation, and Epilepsy: Normalization of Neurotransmitter Metabolite Levels, Plasma Cortisol Levels, and EEG Features; Decreased Aggression in Aggressive Patients; Improved IQ and Cognitive Functioning in Mentally Retarded Subjects; Reduction of Frequency and Severity of Epileptic Seizures in Epileptic Patients.

203. JEVNING, R.; WILSON, A. F.; and PIRKLE, H. C. Behavioral control of red blood cell metabolism. Departments of Medicine, Physiology, and Pathology, University of California at Irvine, Orange, California, U.S.A., 1981.

Fundamental Change in Cellular Metabolism: Reduced Glucose Metabolism in Red Blood Cells.

204. WALTON, K. G.; LEROM, M.; SALERNO, J.; and WALLACE, R. K. Practice of the Transcendental Meditation (TM) and TM-Sidhi program may affect the circadian rhythm of urinary 5-hydroxyindole excretion. *Society for Neuroscience Abstracts* 7: 48, 1981.

Changes in Serotonergic Activity: Increased Urinary 5-Hydroxyindole Excretion.

205. FARROW, J. T., and, HEBERT J. R. Breath suspension during the Transcendental Meditation technique. *Psychosomatic Medicine* 44(2):133–153, 1982.

Experience of Pure Consciousness Associated with: Periodic Breath Suspension; Marked Reductions in Metabolic Rate (Oxygen Consumption and Carbon Dioxide Elimination), Mean Respiration Rate, and Minute Ventilation Rate; Reduced Heart Rate; Increased Basal Skin Resistance; Stable Phasic Skin Resistance; Increased EEG Coherence in Theta, Alpha and Beta Bands.

206. WERNER, O.; WALLACE, R. K.; CHARLES, B.; JANSSEN, G.; and CHALMERS, R. Endocrine balance and the TM-Sidhi program. Maharishi European Research University, Seelisberg, Switzerland, and Department of Biology, Maharishi International University, Fairfield, Iowa, U.S.A., 1982.

Changes in Hormonal Balance as a Result of the TM-Sidhi Program: Short- and

Long-Term Changes in Pituitary Hormone Levels Indicative of Increased Stability and Sensitivity in Endocrine Control Systems.

207. JEVNING, R.; WILSON, A. F.; and O'HALLORAN, J. P. Muscle and skin blood flow and metabolism during states of decreased activation. *Physiology & Behavior* 29(2): 343–348, 1982. Indication of Deep Rest: Decreased Oxygen Consumption in Muscle Tissue.

208. O'HALLORAN, J. P.; JEVNING, R. A.; WILSON, A. F.; SKOWSKY, R.; and ALEXANDER, C. N. Behaviorally induced secretion of arginine vasopressin. Departments of Medicine and Physiology, University of California at Irvine, Orange, California, U.S.A.; Department of Endocrinology, Long Beach Veteran's Administration Hospital, Long Beach, California, U.S.A.; and Department of Psychology and Social Relations, Harvard University, Cambridge, Massachusetts, U.S.A., 1983.

Changes in Hormonal Balance: Increased Plasma Vasopressin Levels at Regular Twice Daily Practice of Transcendental Meditation. Indication of Deep Rest: Increased Basal Skin Resistance. Lower State and Trait Anxiety.

B: Electrophysiological and Electroencephalographic Changes

209. KEMMERLING, T. Wirkung der Transzendentalen Meditation auf den Muskeltonus. *Psychopathometrie* 4: 437–438, 1978. Electromyographic Evidence of Deep Muscular Relaxation.

210. ORME-JOHNSON, D. EEG coherence and the TM-Sidhi program. Maharishi International University, Fairfield, Iowa, U.S.A. Abstract presented at the American Psychological Association, Toronto, Ontario, Canada, 28 August 1978. Increased Orderliness and Integration of Brain Functioning as a Result of the TM-Sidhi Program: Longitudinal Increases in Interhemispheric EEG Coherence.

211. ROUZERÉ, A.-M.; BADAWI, K.; and HARTMANN, R. High amplitude fronto-central alpha and theta activity during the Transcendental Meditation technique. Department of Neurophysiology, Maharishi European Research University, Seelisberg, Switzerland, 1979. Increased Orderliness and Integration of Brain Functioning: Bursts of High Amplitude EEG Alpha and Theta Activity in Frontal and Central Regions.

212. CHENARD, J.-R. A controlled study of the influence of Transcendental Meditation on a specific value of the H-reflex (Hoffman reflex) recruitment curve and the surface EMG. Centre d'études universitaires dans l'Ouest Québécois, University of Quebec, Rouyn, Quebec, Canada, 1979. Electromyographic Evidence of Deep Muscular Relaxation; Reduction in Amplitude of H-Reflex

213. BADAWI, K.; WALLACE, R. K.; ORME-JOHNSON, D.; and ROUZERÉ, A.-M. Electrophysiologic characteristics of respiratory suspension periods occurring

during the practice of the Transcendental Meditation program. *Psychosomatic Medicine* 46(3): 267–276, 1984.

Experience of Pure Consciousness Associated with Periodic Breath Suspension and High EEG Coherence.

214. MCEVOY, T. M.; FRUMKIN, L. R.; and HARKINS, S. W. Effects of meditation on brainstem auditory evoked potentials. *International Journal of Neuroscience* 10: 165–170, 1980. Changes in Brainstem Auditory Evoked Potentials following the Transcendental Meditation and TM-Sidhi Program Suggesting Improved Processing of Auditory Information.

215. ORME-JOHNSON, D. W.; WALLACE, R. K.; and DILLBECK, M. C. Longitudinal effects of the TM-Sidhi program on EEG phase coherence. Departments of Psychology and Biology, Maharishi International University, Fairfield, Iowa, U.S.A., 1980. Increased Orderliness and Integration of Brain Functioning as a Result of the TM-Sidhi Program: Longitudinal Increases in EEG Alpha and Theta Coherence.

216. ORME-JOHNSON, D. W., and HAYNES, C. T. EEG phase coherence, pure consciousness, creativity, and TM-Sidhi experiences. *International Journal of Neuroscience* 13: 211–217, 1981.

Clear Experiences of Pure Consciousness and TM-Sidhis Correlated with Higher Frontal EEG Alpha Coherence and Greater Creativity.

217. DILLBECK, M. C., and BRONSON, E. C. Short-term longitudinal effects of the Transcendental Meditation technique on EEG power and coherence. *International Journal of Neuroscience* 14: 147–151, 1981.

Increased Orderliness and Integration of Brain Functioning: Longitudinal Increase in Frontal EEG Alpha Coherence.

218. ORME-JOHNSON, D. W. Does the nervous system have a ground state? A description of high EEG coherence events in a single subject. Department of Psychology, Maharishi International University, Fairfield, Iowa, U.S.A., 1981.

Experience of Pure Consciousness Associated with Overall High EEG Coherence.

219. DILLBECK, M. C.; ORME-JOHNSON, D. W.; and WALLACE, R. K. Frontal EEG coherence, H-reflex recovery, concept learning, and the TM-Sidhi program. *International Journal of Neuroscience* 15: 151–157, 1981.

Improved Efficiency of Concept Learning as a Result of the TM-Sidhi Program; Correlations between High Frontal EEG Alpha and Theta Coherence, Greater Neurological Efficiency (Faster H-Reflex Recovery), and Greater Flexibility of Concept Learning.

220. ALEXANDER, C. N., and LARIMORE, W. E. Distinguishing between Transcendental Meditation and sleep according to electrophysiological criteria. Department of

Psychology and Social Relations, Harvard University, Cambridge, Massachusetts, U.S.A., and The Analytic Sciences Corporation, Reading, Massachusetts, U.S.A., 1981.
EEG Differentiation between Transcendental Meditation and Napping.

221. NIDICH, S. I.; ABRAMS, A.; JONES, C.; ORME-JOHNSON, D. W.; and WALLACE, R. K. Neurophysiological entry characteristics: Correlation between EEG coherence and math achievement with subjects practicing the TM program. Maharishi International University, Fairfield, Iowa, U.S.A., 1981.
High Frontal EEG Alpha Coherence Correlated with Superior Performance in Mathematics.

222. ORME-JOHNSON, D.W.; DILLBECK, M. C.; WALLACE, R. K.; and LANDRITH III, G. S. Intersubject EEG coherence: Is consciousness a field? *International Journal of Neuroscience* 16: 203–209, 1982.
Physiological Correlate of Increased Coherence in Collective Consciousness: Increased Intersubject EEG Coherence Due to Long-Range Influence of Group Practice of the TM-Sidhi Program.

223. NIDICH, S. I.; RYNCARZ, R. A.; ABRAMS, A. I.; ORME-JOHNSON, D. W.; and WALLACE, R. K. Kohlbergian cosmic perspective responses, EEG coherence, and the Transcendental Meditation and TM-Sidhi program. *Journal of Moral Education* 12(3): 166–173, 1983.
High Frontal Alpha EEG Coherence Correlated with High Levels of Principled Moral Reasoning and Unified Cosmic Perspective on Life.

224. BERESFORD, M., and CLEMENTS, G. Real time EEG coherence analysis of the Transcendental Meditation and TM-Sidhi program. Department of Neurophysiology, MERU Research Institute, Mentmore, Buckinghamshire, England, 1983.
Increased Orderliness and Integration of Brain Functioning: Increased EEG Coherence in Alpha, Theta, and Beta Bands; Further Increases during the TM-Sidhi Program.

225. BERESFORD, M.; JEDRCZAK, A.; TOOMEY, M.; and CLEMENTS, G. EEG coherence, age-related psychological variables, and the Transcendental Meditation and TM-Sidhi program. Departments of Neurophysiology and Psychology, MERU Research Institute, Mentmore, Buckinghamshire, England, 1983.
Correlations between High EEG Coherence and Superior Performance on Age-Related Psychological Variables: Fluency; Motor Speed; Reaction Time; Shape Memory; Flexibility. Length of Time Practicing TM-Sidhi Program Predictive of Higher Mean Right Alpha Coherence.

The Studies in the Following Sections Document Changes outside the Practice of the Transcendental Meditation and TM-Sidhi Program.

C: Physiological Efficiency and Stability

226. MILLS, P. J., and WALLACE, R. K. The effect of the Transcendental Meditation and TM-Sidhi program on the paired Hoffman reflex. Department of Biology, Maharishi International University, Fairfield, Iowa, U.S.A., 1978.

Enhanced Neurological Efficiency as a Result of the TM-Sidhi Program: Facilitation of the Paired H-Reflex.

227. WARSHAL, D. Effects of the Transcendental Meditation technique on normal and Jendrassik reflex time. *Perceptual and Motor Skills* 50: 1103–1106, 1980.

Enhanced Neuromuscular Efficiency: Decreased Reflex Latency and Reflex Motor Time.

228. MILLS, W. W., and FARROW, J. T. The Transcendental Meditation technique and acute experimental pain. *Psychosomatic Medicine* 43(2): 157–164, 1981.

Reduced Pain-Related Distress.

229. WALLACE, R. K.; MILLS, P. J.; ORME-JOHNSON, D. W.; DILLBECK, M. C.; and JACOB, E. Modification of the paired H reflex through the Transcendental Meditation and TM-Sidhi program. *Experimental Neurology* 79: 77–86, 1983.

Enhanced Neurological Efficiency as a Result of the TM-Sidhi Program: Facilitation of the Paired H-Reflex.

230. WALLACE, R. K.; MILLS, P. J.; ORME-JOHNSON, D. W.; DILLBECK, M. C.; and JACOB, E. The paired H reflex and its correlation with EEG coherence and academic performance in normal subjects practicing meditation. *Society for Neuroscience Abstracts* 8: 537, 1982.

Correlations between High EEG Coherence, Enhanced Neurological Efficiency (Paired H-Reflex Recovery), and Superior Academic Performance.

231. WALLACE, R. K.; ORME-JOHNSON, D. W.; MILLS, P. J.; DILLBECK, M. C.; and JACOB, E. The relationship between the paired Hoffman reflex and academic achievement in participants of the Transcendental Meditation (TM) program. Departments of Biology and Psychology, Maharishi International University, Fairfield, Iowa, U.S.A., 1980.

Enhanced Neurological Efficiency (Paired H-Reflex Recovery) Correlated with Superior Academic Performance.

D: Health

232. GRÄF, D., and PFISTERER, G. Der Nutzen der Technik der Transzendentalen Meditation für die ärztliche Praxis. *Erfahrungsheilkunde* 9: 594–596, 1978.

Case History of Benefits for Patient Recovering from Severe Illness, Including Severe Bronchial Asthma and Heart Disease.

233. COOPER, M. J., and AYGEN, M. M. Effect of Transcendental Meditation on serum cholesterol and blood pressure. Findings previously published in *Harefuah*, the Journal of the Israel Medical Association, 95(1): 1–2, 1978.

Improved Cardiovascular Health: Decreased Serum Cholesterol Levels in Normal and Hypercholesterolaemic Patients; Reduction of Blood Pressure to More Ideal Levels in Normotensive Subjects.

234. HEIDELBERG, R. Transzendente Meditation in der geburtshilflichen Psychoprophylaxe. Doctoral dissertation (abbr.), Medical Faculty, Free University of Berlin, West Berlin, W. Germany, 1979.

Better Health for Mother and Child during Pregnancy and Childbirth: Fewer Medical Complaints during Pregnancy; Less Pain and Anxiety during Pregnancy and Childbirth; Shorter Duration of Labor; Lower Frequency of Vacuum or Forceps Delivery and Other Operative Interventions during Labor; Greater Frequency and Longer Duration of Breast-Feeding.

235. AGARWAL, B. L., and KHARBANDA, A. Effect of Transcendental Meditation on mild and moderate hypertension. Postgraduate Department of Medicine, M.L.N. Medical College, Allahabad, Uttar Pradesh, India. Paper presented at the VIIth Asian-Pacific Congress on Cardiology, Bangkok, Thailand, November 1979.

Improved Cardiovascular Health: Decreased Blood Pressure in Patients with Mild and Moderate Hypertension.

236. COOPER, M. J., and AYGEM, M. M. Transcendental Meditation in the management of hypercholesterolemia. *Journal of Human Stress* 5(4): 24–27, 1979.

Improved Cardiovascular Health: Long-Term Reductions in Serum Cholesterol in Hypercholesterolaemic Patients.

237. SEILER, G., and SEILER, V. The effects of Transcendental Meditation on periodontal tissue. *Journal of the American Society of Psychosomatic Dentistry and Medicine* 26(1): 8–12, 1979.

Better Periodontal Health.

238. KIRTANE, L. Transcendental Meditation: A multipurpose tool in clinical practice. General medical practice, Poona, Maharashtra, India, 1980.

Benefits in General Medical Practice: Improvements in General Health and in a Wide Variety of Physical and Mental Disorders Including Hypertension; Angina Pectoris; Bronchial Asthma; Chronic Bronchitis; Diabetes Mellitus; Menorrhagia; Periodontal Inflammation; Recurrent Upper Respiratory Infections; Allergic Rhinitis; Chronic Back Pain; Rheumatoid Arthritis; Dyspepsia; Chronic Colitis; Insomnia; Chronic Headaches; Anxiety; Depression; Fatigue; Obesity. Decreased Need for Tranquillizers, Sleep Medications, Anti-Asthmatics, Anti-Hypertensives, and Drugs for Hypertension, Asthma, and Heart Disease. Increased Co-operation with Medical Advice. Recovery from Major Illness, Chronic Musculo-Skeletal Complaints.

239. FARINELLI, L. Possibilità di applicazioni della tecnologia della coscienza in aspetti di medicina preventiva: Una ricerca pilota. Unpublished doctoral dissertation (abbr.), Faculty of Medicine and Surgery, University of Padova at Verona, Verona, Italy, 1981.

Multiple Improvements in Physical and Mental Health: Fewer Infectious Diseases; Better Health of the Respiratory and Digestive Systems; Less Eczema and Fewer Allergic Reactions; Less Depression; Greater Self-Actualization; Greater Self-Esteem; Better Social Relationships; Less Nervousness; Less Insomnia; Lower Use of Tranquillizers, Sleep Medication, and Analgesics; Fewer Accidents. Lower Usage of Cigarettes, Alcohol, Non-Prescribed Drugs, and Coffee.

240. YEE, A. C., and DISSANAYAKE, A. S. Glucose tolerance and the Transcendental Meditation program (a pilot study). MERU Research Institute, Singapore, and Department of Physiology, University of Singapore, Singapore. Paper presented at the International Congress on Research on Higher States of Consciousness at the Faculty of Science, Mahidol University, Bangkok, Thailand, 4–6 December 1980.
Improved Blood Sugar Homeostasis as Measured by Oral Glucose Tolerance Test.

241. OVERBECK, K.-D. Auswirkungen der Technik der Transzendentalen Meditation (TM) auf die psychische und psychosomatische Befindlichkeit. *Psychotherapie-Psychosomatik Medizinische Psychologie* 32(6): 188–192, 1982.
Decreased Psychosomatic Complaints; Decreased Musculo-skeletal Complaints; Decreased Limitations Caused by Physical and General Ailments; Increased Efficiency; Increased Emotional Stability; Decreased Use of Medicines and Non-Prescribed Drugs; Decreased Over-Sensitivity.

242. WALLACE, R. K.; DILLBECK, M.; JACOB, E.; and HARRINGTON, B. The effects of the Transcendental Meditation and TM-Sidhi program on the aging process. *International Journal of Neuroscience* 16: 53–58, 1982.
Reversal of Biological Aging: Younger Biological Age Compared with Control Subjects and Population Norms. Length of Time Practicing Transcendental Meditation Associated with Reduction in Biological Age.

243. LOVELL-SMITH, H. D. Transcendental Meditation—treating the patient as well as the disease. *The New Zealand Family Physician* 9: 62–65, April 1982.
Case History Illustrating Holistic Improvements in Physical and Mental Health Including Relief from Insomnia; Decreased Anxiety; Decreased Need for Tranquillizers; Fewer Headaches; Increased Enjoyment of Life, and Increased Efficiency.

244. WALLACE, R. K.; SILVER, J.; MILLS, P. J.; DILLBECK, M. C.; and WAGONER, D. E. Systolic blood pressure and long-term practice of the Transcendental Meditation and TM-Sidhi program: Effects of TM on systolic blood pressure. *Psychosomatic Medicine* 45(1): 41–46, 1983.
Improved Cardiovascular Health: Lower Systolic Blood Pressure Compared to Norms for Age; Effect More Pronounced in Long-Term Meditators.

245. TOOMEY, M.; PENNINGTON, B.; CHALMERS, R.; and CLEMENTS, G. The practice

of the Transcendental Meditation and TM-Sidhi program reverses the physiological ageing process. MERU Research Institute, Mentmore, Buckinghamshire, England, and Department of Biology, University of York, Yorkshire, England, 1982.

Reversal of Biological Aging: Younger Biological Age Compared with Norms. Length of Time Practicing Transcendental Meditation and TM-Sidhi Program Correlated with Younger Biological Age and Younger Functional Age, and Predictive of Lower Systolic Blood Pressure and Auditory Threshold.

246. TOOMEY, M.; CHALMERS, R.; and CLEMENTS, G. The Transcendental Meditation and TM-Sidhi program and reversal of the ageing process: A longitudinal study. MERU Research Institute, Mentmore, Buckinghamshire, England, 1983.

Reversal of Biological Ageing: Longitudinal Reduction in Biological Age; Younger Biological Age Compared with Norms. Length of Time Practicing Transcendental Meditation and TM-Sidhi Program Correlated with Younger Biological Age and Younger Functional Age. Decreased Systolic Blood Pressure and Improved Auditory Threshold.

247. BROWNE, G. E.; FOUGÈRE, D.; ROXBURGH, A.; BIRD, J.; and LOVELL-SMITH, H. D. Improved mental and physical health and decreased use of prescribed and non-prescribed drugs through the Transcendental Meditation program. Age of Enlightenment Medical Council, Christchurch, New Zealand; Heylen Research Centre, Auckland, New Zealand; and Dunedin Hospital, Dunedin, New Zealand, 1983.

Improvements in Physical and Mental Health Correlated with Duration and Regularity of Practice of Transcendental Meditation; Decreased Use of Alcohol; Decreased Use of Cigarettes; Decreased Drug Abuse; Decreased Need for Anti-Hypertensives, Drugs for Heart Disease, Sleep Medications, Tranquillizers, Anti-Depressants, Anti-Asthmatics, Anti-Histamines, Analgesics, and Drugs for Hypertension, Asthma, and Heart Disease.

E: Motor and Perceptual Ability

248. HOLT, W. R.; CARUSO, J. L.; and RILEY, J. B. Transcendental Meditation vs. pseudo-meditation on visual choice reaction time. *Perceptual and Motor Skills* 46: 726, 1978. Improved Mind-Body Co-ordination: Faster Reactions (Visual Choice Reaction Time).

249. FRIEND, K. E., and MALISZEWSKI, M. More on the reliability of the kinesthetic after-effects measure and need for stimulation. *Journal of Personality Assessment* 42(4): 385–391, 1978.

Reduced Need for External Stimulation.

250. ANTES, M. The effects of the TM-Sidhi program on rigidity-flexibility. Diplomarbeit (abbr.), Department of Psychology, University of Saarland, Saarbrücken, W. Germany, 1978.

Increased Behavioral Flexibility as a Result of the TM-Sidhi Program: Increased Perceptual Flexibility; Increased Psychomotor Speed; Increased Functional Efficiency of Psychomotor Co-ordination.

251. BANQUET, J. P., and LESEVRE, N. Event-related potentials in altered states of consciousness. *Motivation, Motor and Sensory Processes of the Brain, Progress in Brain Research* 54: 447–453, 1980.

Increased Vigilance and Improved Capacity for Selective Attention: Faster Reactions with Fewer Mistakes (Visual Choice Reaction Time); Shorter Latency and Larger Amplitude of Visual Evoked Potentials.

252. SCHWARTZ, E. The effects of the Transcendental Meditation program on strength of the nervous system, perceptual reactance, reaction time, and auditory threshold. Master's thesis (abstract), Department of Exercise Science, University of Massachusetts, Amherst, Massachusetts, U.S.A., 1979.

Increased Sensitivity, Strength, and Flexibility of the Nervous System; Improved Auditory Thresholds; Faster Reactions.

253. DILLBECK, M. C. Meditation and flexibility of visual perception and verbal problem-solving. *Memory and Cognition* 10(3): 207–215, 1982.

Improved Efficiency of Visual Perception; Increased Freedom from Habitual Patterns of Perception with Increased Ability to Use Such Patterns Effectively Where Appropriate.

254. ROWE, K. C.; NEUSCHATZ, J. S.; and NIDICH, S. I. Effect of the Transcendental Meditation and TM-Sidhi program on reaction time. State University of New York at New Paltz, New Paltz, New York, U.S.A.; Roger Williams College, Bristol, Rhode Island, U.S.A.; and Maharishi International University, Fairfield, Iowa, U.S.A. Paper presented at the meeting of the American Psychological Association, Montreal, Quebec, Canada, September 1980.

Improved Mind-Body Co-ordination: Faster Reactions (Visual Choice Reaction Time).

255. ORME-JOHNSON, D. W.; RAIMONDI, D.; VESELEY, B.; DILLBECK, M. C.; and WALLACE, R. K. The influence of the Transcendental Meditation and TM-Sidhi program on field independence: The growth of a stable internal frame of reference. Maharishi International University, Fairfield, Iowa, U.S.A., 1981.

More Stable Internal Frame of Reference: Greater Field Independence.

256. HARDING, S. D. The effects of Transcendental Meditation on an auditory temporal discrimination task. Department of Experimental Psychology, University of Sussex, Brighton, Sussex, England, 1981.

Improved Auditory Temporal Discrimination.

257. JEDRCZAK, A. The TM-Sidhi program and age-related psychological variables. Department of Psychology MERU Research Institute, Mentmore, Buckinghamshire, England, 1982.

Length of Time Practicing TM-Sidhi Program Predictive of Superior Performance on Tests Measuring Age-Related Psychological Variables: Visual Memory; Creativity; Field Independence; Perceptual Speed; Motor Speed; Reaction Time; Non-Verbal Intelligence. Length of Time Practicing the TM-Sidhi Program Predictive of Younger Functional Age.

258. JEDRCZAK, A. Psychological correlates of experiences of higher states of consciousness in subjects practicing the Transcendental Meditation and TM-Sidhi program. Department of Psychology, MERU Research Institute, Mentmore, Buckinghamshire, England, 1982. Experience of Higher States of Consciousness Positively Correlated with Superior Performance on Tests Measuring Perceptual Speed, Flexibility, Creativity, Intelligence, Field Independence, and Psycho-Motor Speed.

259. JEDRCZAK, A. The Transcendental Meditation and TM-Sidhi program and field independence. Findings published in *Perceptual and Motor Skills* 59: 999-100, 1984. More Stable Internal Frame of Reference: Greater Field Independence.

PART II: PSYCHOLOGY

A: Intelligence, Learning, and Academic Performance

260. TRAVIS, F. Creative thinking and the Transcendental Meditation technique. A version printed in *The Journal of Creative Behavior* 13(3): 169-180, 1979. Increased Creativity: Increased Figural Flexibility and Originality; Increased Verbal Fluency.

261. ARON, A.; ORME-JOHNSON, D.; and BRUBAKER, P. The Transcendental Meditation program in the college curriculum: A 4-year longitudinal study of effects on cognitive and affective functioning. *College Student Journal* 15(2): 140-146, 1981. Benefits for Students at Maharishi International University: Increased Intelligence; Increased Self-Confidence; Increased Sociability; Improved Psychological Health; Increased Social Maturity.

262. WOOD, M. F. The effectiveness of Transcendental Meditation as a means of improving the echolalic behavior of an autistic student. College of Exceptional Child Education, University of Central Florida, Orlando, Florida, U.S.A. Paper presented at the International Symposium on Autism Research, Boston, Massachusetts, U.S.A., 14 July 1981. Improved Echolalic Behavior in Autistic Student.

263. EYERMAN, J. Transcendental Meditation and mental retardation. *Journal of Clinical Psychiatry* 42(1): 35-36, 1981. Improved Speech, Social Behavior, Intelligence, and Physiological Functioning in a Mentally Retarded Subject

264. DILLBECK, M. C., and SZAL, T. J. The Transcendental Meditation technique, working memory, and field independence in school-aged children. Department of Psychology, Maharishi International University, Fairfield, Iowa, U.S.A., 1981.
Improved Working Memory in School Children.

265. KOTCHABHAKDI, N. J.; PIPATVERAVAT, S.; KOTCHABHAKDI, N.; TAPANYA, P.; and PORNPATHKUL, S. Improvement of intelligence, learning ability and moral judgment through the practice of the Transcendental Meditation technique. In *Proceedings of the Second Asian Workshop on Child and Adolescent Development*, Bangkok and Bangsaen, Thailand, 15–24 February 1982. Bangkok: Sri Nakharinwirot University.
Benefits for High School Students: Increased Intelligence Growth Rate; Improved Learning Ability; Improved Moral Judgment.

B: Development of Personality

266. HANLEY, C. P., and SPATES, J. L. Transcendental Meditation and social psychological attitudes. *The Journal of Psychology* 99: 121–127, 1978.
More Positive Conception of Human Nature; More Positive Self-Image; Higher Levels of Tolerance; Greater Sociability; Less Pronounced Feelings of Social Inadequacy.

267. LJUNGGREN, G. Inflytandet av Transcendental Meditation pa neuroticism, medicinbruk och sömnproblem. *Läkartidningen* 74(47): 4212–4214, 1977.
Decreased Neuroticism; Decreased Insomnia; Decreased Use of Tranquillizers.

268. HANDMACHER, B. H. Length of time spent in the practice of Transcendental Meditation and sex differences related to intrapersonal and interpersonal orientation. Doctoral thesis (abbr.), College of Education and Departments of Psychology and Sociology, The Ohio State University, Columbus, Ohio, U.S.A., 1978. *Dissertation Abstracts International*, 39: 676A.
Less Anxiety; Less Depression; More Affectionate; More Tolerant; Less Tendency to Dominate; Less Interested in Superficial Social Contacts; More Selective in Personal Relationships; Less Need for Acceptance; More Inner-Directed.

269. SANDAHL, F. P. The effect of the practice of TM on the degree of neuroticism as measured by the defense mechanism test. National Defense Research Institute, Karlstad, Sweden, 1978.
Decreased Hidden Mental Turbulence: Decreased Neuroticism.

270. NIDICH, S. I., and NIDICH, R. The Transcendental Meditation and TM-Sidhi program and moral development. Department of Education, Maharishi International University, Fairfield, Iowa, U.S.A., 1983.
Enhanced Cognitive-Moral Development; Benefits of Transcendental Meditation Further Enhanced by the TM-Sidhi Program.

271. HOLEMAN, R., and SEILER, G. Effects of sensitivity training and Transcendental Meditation on perception of others. *Perceptual and Motor Skills* 49: 270, 1979.
Improved Perception of Others.
272. FERGUSON, P. C. An integrative meta-analysis of psychological studies investigating the treatment outcomes of meditation techniques. Doctoral thesis (abbr.), School of Education, University of Colorado, Boulder, Colorado, U.S.A., 1981.
Greater Beneficial Effect from Transcendental Meditation Than from Other Meditation and Relaxation Procedures as Indicated by Meta-Analysis.
273. KNIFFKI, C. Transcendental Meditation and autogenic training: A comparison. *Transzendente Meditation und Autogenes Training—Ein Vergleich* in the series 'Geist und Psyche'. Munich: Kindler Verlag, 1979.
Cumulative Benefits for Psychological Health: Decreased Nervousness; Decreased Depression; Decreased Emotional Instability; Decreased Manifest Anxiety.
274. TURNBULL, M. J., and NORRIS, H. Effects of Transcendental Meditation on self-identity indices and personality. *British Journal of Psychology* 73: 57–68, 1982.
Stronger Self-Identity.
275. NIDICH, S. I. Effects of the Transcendental Meditation program on state-trait anxiety. Maharishi International University, Fairfield, Iowa, U.S.A., 1982.
Decreased State and Trait Anxiety.

PART III: SOCIOLOGY

A: Rehabilitation

276. SHAFII, M.; LAVELY, R.; and JAFFE, R. Decrease in cigarette smoking following Transcendental Meditation. University of Michigan Medical School, Ann Arbor, Michigan, U.S.A. Findings previously published in *MERU Journal* 24: 29 (Abstract), 1976.
Decreased or Discontinued Use of Cigarettes.
277. GEISLER, M. Therapeutische Wirkungen der Transzendentalen Meditation auf Drogenkonsumenten. *Zeitschrift für klinische Psychologie* 7(4): 235–255, 1978.
Decreased Drug Abuse; Decreased Nervousness (Decreased Psychosomatic Disturbance)⁴; Decreased Depression (Increased Contentment, Increased Self-Confidence); Increased Sociability (Increased Friendliness, Increased
- ⁴ The terms in brackets are taken from the manual of the psychological test employed in order to clarify the characteristics measured by the test.

Liveliness); Increased Placidity (Increased Self-Assuredness, Increased Good Humor, Decreased Tendency to Procrastinate); Decreased Inhibition (Increases in: Naturalness, Spontaneity, Self-Sufficiency); Increased Extraversion (Increased Capacity for Warm Interpersonal Relationships); Decreased Neuroticism (Increased Emotional Stability, Decreased Tension); Increased Self-Reliance (Increased Effectiveness, More Balanced Mood, Increased Vigor).

278. ABRAMS, A. I., and SIEGEL, L. M. The Transcendental Meditation program and rehabilitation at Folsom State Prison: A cross-validation study. *Criminal Justice and Behavior* 5 (1): 3–20, 1978.

Rehabilitation of Prisoners: Decreased Anxiety; Decreased Neuroticism, Decreased Resentment; Decreased Negativism Decreased Irritability; Decreased Hostility; Decreased Prison Disciplinary Rule Infractions; Improved Sleep Patterns (Decreased Time to Fall Asleep, Decreased Awakenings per Night, Improved Quality of Sleep).

279. ABRAMS, A. I., and SIEGEL, L. M. Transcendental Meditation and rehabilitation at Folsom Prison: Response to a critique. *Criminal Justice and Behavior* 6(1): 13–21, 1979.

Verification of Results of Paper 278.

280. ABRAMS, A. I. A follow-up study of the effects of the Transcendental Meditation program on inmates at Folsom Prison. Maharishi International University, Fairfield, Iowa, U.S.A., 1982.

Rehabilitation of Prisoners: Sustained Reductions in Neuroticism, Anxiety, Hostility, and Use of Cigarettes; Improved Sleep Patterns (Decreased Time to Fall Asleep, Decreased Awakenings per Night).

281. CARTER, R., and MEYER, J. E. The use of the Transcendental Meditation (TM) technique with severely disturbed psychiatric inpatients. Institute for Social Rehabilitation, Pacific Palisades, Los Angeles, California, U.S.A., 1979.

Benefits for Psychiatric In-Patients: Marked Improvements in Schizophrenia, Manic-Depressive Psychosis, and Severe Personality Disorders; Decreased Anxiety and Tension.

282. NIDICH, S. I. The Science of Creative Intelligence and the Transcendental Meditation program: Reduction of drug and alcohol consumption. Department of Education, Maharishi International University, Fairfield, Iowa, U.S.A. Paper presented at the New England Educational Research Organization Conference, Lenox, Massachusetts, U.S.A., May 1980.

Decreased Use of Alcohol; Decreased Drug Abuse.

283. BIELEFELD, M. Transcendental Meditation: A stress reducing self-help support system. In *Vocational rehabilitation: Do Psychologists really belong?* Cleveland V.A. Medical Center, Cleveland, Ohio, U.S.A. Paper presented at the Annual Convention of the American Psychological Association, Los Angeles, California, U.S.A., 24 August 1981.

Benefits for Patients with Psychiatric and Addictive Disorders in a Vocational Rehabilitation Unit: Greater Ability to Maintain Employment on Discharge; More Frequently Maintained on Out-Patient Care Alone.

284. ALEXANDER, C. N., and MARKS, E. J. Ego development, personality and behavioral change in inmates practicing the Transcendental Meditation technique or participating in other programs: A summary of cross-sectional and longitudinal results. Doctoral thesis of first author (summary), Department of Psychology and Social Relations, Harvard University, Cambridge, Massachusetts, U.S.A., 1982.

Rehabilitation of Prisoners: Greater Self-Development, Capacity for Warm Interpersonal Relationships, and Engagement in Private, Avocational Businesses; Lower Pathological Symptoms—Lower Psychopathic Deviation, Anxiety, Aggression, Tension, and Introversion; Growth toward Higher States of Consciousness; Longitudinal Increases in Self-Development and Decreases in Aggression, Anxiety, and Schizophrenic Symptoms.

285. ALEXANDER, C. N.; GRANT, J.; and STADTE, C. VON. The effects of the Transcendental Meditation technique on recidivism: A retrospective archival analysis. Doctoral thesis of first author (summary), Department of Psychology and Social Relations, Harvard University, Cambridge, Massachusetts, U.S.A., 1982. *Dissertation Abstracts International* 43 (1982): 539B.

Rehabilitation of Prisoners: Lower Recidivism Rate; Fewer New Convictions.

286. BLEICK, C. R. Influence of the Transcendental Meditation program on criminal recidivism. Institute for Social Rehabilitation, Berkeley, California, U.S.A., 1982.

Rehabilitation of Prisoners: Lower Recidivism Rate; Higher Incidence of Clean Records; Fewer New Convictions.

287. ARON, E. N., and ARON, A. The patterns of reduction of drug and alcohol use among Transcendental Meditation participants. *Bulletin of the Society of Psychologists in Addictive Behaviors* 2(1): 28–33, 1983.

Decreased Use of Tobacco; Decreased Use of Alcohol; Decreased Use of Marijuana.

288. ARON, A., and ARON, E. N. Rehabilitation of juvenile offenders through the Transcendental Meditation program: A controlled study. *Journal of Crime and Justice*, in press.

Rehabilitation of Juvenile Offenders: Decreased Anxiety.

PART IV: REVIEW PAPERS

A: Health

289. CLEMENTS, G., and CLEMENTS, D. M. The Transcendental Meditation and TM-Sidhi program and the reversal of ageing. Maharishi European Research University, Seelisberg, Switzerland. Rheinweiler, W. Germany: MERU Press, 1980.

Reversal of Aging.

290. BAUHOFER, U. Das Programm der Transzendentalen Meditation in der Behandlung von Adipositas. Maharishi European Research University, Seelisberg, Switzerland, 1983.

5Treatment of Obesity: More Successful Weight Reduction; Improved Psychological Health in Obese Subjects—Decreased Anxiety; Decreased Nervousness (Decreased Psychosomatic Disturbance); Decreased Aggressiveness (Increased Self-Control, Increased Emotional Maturity); Decreased Depression (Increased Contentment, Increased Self-Confidence); Increased Sociability (Increased Friendliness, Increased Liveliness); increased Placidity (Increased Self-Assuredness, Increased Good Humor); Decreased Tendency to Dominate (Increased Respectfulness); Decreased Inhibition (Increases in Naturalness, Spontaneity, Self-Sufficiency); Increased Extraversion (Increased Capacity for Warm Interpersonal Relationships); Decreased Neuroticism (Increased Emotional Stability).

5Included in the research reviewed in this paper are findings which are not presented elsewhere in the Collected Papers, Volumes 1–4, and are therefore listed here.

VOLUME 4

CHALMERS, R. A.; CLEMENTS, G.; SCHENKLUHN, H.; and WEINLESS, M., eds. 1989. *Scientific research on Maharishi's Transcendental Meditation and TM-Sidhi program: Collected papers, vol. 4.* Vlodrop, the Netherlands: Maharishi Vedic University Press.

PART I: PHYSIOLOGY

The Studies in the First Two Sections Document Changes during the Practice of the Transcendental Meditation Technique Unless Otherwise Stated.

A: Metabolic, Biochemical, and Cardiovascular Changes

291. JEVNING, R.; WILSON, A. F.; O'HALLORAN, J. P.; and WALSH, R. N. Forearm blood flow and metabolism during stylized and unstylized states of decreased activation. *American Journal of Physiology* 245 (Regulatory, Integrative, and Comparative Physiology 14): R110–R116. 1983.

Indication of Deep Rest: Decreased Oxygen Consumption in Muscle Tissue. Reduction in Biochemical Index of Stress: Decreased Arterial Lactate Levels.

292. JEVNING, R.; WILSON, A. F.; PIRKLE, H.; O'HALLORAN, J. P.; and WALSH, R. N. Metabolic control in a state of decreased activation: modulation of red cell metabolism. *American Journal of Physiology* 245 (Cell Physiol. 14): C457–C461, 1983.

Fundamental Change in Cellular Metabolism: Reduced Glucose Metabolism in

Red Blood Cells. Normal Arterial Oxygen and Carbon Dioxide Partial Pressures. Reduction in Biochemical Index of Stress: Reduced Spontaneous Skin Resistance Responses.

293. WOLKOVE, N.; KREISMAN, H.; DARRAGH, D.; COHEN, C.; and FRANK, H. Effect of Transcendental Meditation on breathing and respiratory control. *Journal of Applied Physiology: Respiratory, Environmental and Exercise Physiology* 56(3): 607–612, 1984. Decreased Minute Ventilation (Decreased Tidal Volume); Increased Basal Skin Resistance; Periodic Breath Suspension; Changes in Chemical and Neural Control of Breathing.

B: Electroencephalographic Changes

294. ORME-JOHNSON, D. W.; WALLACE, R. K.; DILLBECK, M. C.; ALEXANDER, C. N.; and BALL, O. E. Improved functional organization of the brain through the Maharishi Technology of the Unified Field as indicated by changes in EEG coherence and its cognitive correlates: A proposed model of higher states of consciousness. Departments of Psychology and Biology, Maharishi International University, Fairfield, Iowa, U.S.A.; Department of Psychology and Social Relations, Harvard University, Cambridge, Massachusetts, U.S.A.; and Department of Education, University of Georgia, Athens, Georgia, U.S.A. Paper presented at the American Psychological Society Annual Convention, Los Angeles, California, U.S.A., September 1981. Increased Orderliness and Integration of Brain Functioning: Increased EEG Coherence. Correlations between Increased Frontal EEG Coherence and Increased Creativity; Correlations between Changes in EEG Coherence and Increased Grade Point Average, Increased Verbal Intelligence, Decreased Neuroticism, and Enhanced Principled Moral Reasoning.

295. MISZCZAK, J., and ACHIMOWICZ, J. Hybrid analysis of spontaneous brain activity in different states of conscious experience. Military Institute of Aviation Medicine, Warsaw, Poland. Results presented at the 5th Annual Meeting on EEG and Clinical Neurophysiology, Esztergom, Hungary, 1–9 October 1982. Increased Orderliness and Integration of Brain Functioning: Synchronized High Amplitude Frontal EEG Theta Activity.

296. NIDICH, R.; NIDICH, S. I.; ORME-JOHNSON, D. W.; and WALLACE, R. K. EEG coherence and the length of practice of the Transcendental Meditation program. Departments of Education, Psychology, and Biology, Maharishi International University, Fairfield, Iowa, U.S.A., 1983. Correlation between Length of Time Practicing Transcendental Meditation and EEG Alpha Coherence.

297. NIDICH, S. I.; NIDICH, R.; ABRAMS, A.; ORME-JOHNSON, D.; and WALLACE, R. K. Frontal lobe functioning: EEG coherence as a predictor of highly pro-social behavior in subjects practicing the Transcendental Meditation and TM-Sidhi

program. Departments of Education, Psychology, and Biology, Maharishi International University, Fairfield, Iowa, U.S.A., 1982.

Correlations between High Frontal EEG Coherence and Highly Pro-Social Behavior.

C: Health

298. ALLEN, C. P. Effects of Transcendental Meditation, electromyographic (EMG) biofeedback relaxation, and conventional relaxation on vasoconstriction, muscle tension, and stuttering: A quantitative comparison. Doctoral dissertation (abstract), University of Michigan, Ann Arbor, Michigan, U.S.A., 1979. *Dissertation International Abstracts*, 40: 689B.

Decreased Stuttering.

299. TABOGI, S. Effetti indotti dal programma di Meditazione Trascendentale sulla tolleranza glicidica. Unpublished doctoral dissertation (abbr.), Faculty of Medicine and Surgery, University of Trieste, Trieste, Italy, 1983.

Improved Blood Sugar Homeostasis as Measured by Oral Glucose Tolerance Test.

300. ALEXANDER, C. N.; DAVIES, J. L.; NEWMAN, R. I.; and CHANDLER, H. M. The effects of Transcendental Meditation on cognitive and behavioral flexibility, health, and longevity in the elderly: An experimental comparison of the Transcendental Meditation program, mindfulness training, and relaxation. Department of Psychology and Social Relations and Graduate School of Education, Harvard University, Cambridge, Massachusetts, U.S.A., and Macquarie University, North Ryde, New South Wales, Australia, 1983.

Benefits for the Elderly: Increased Longevity; Increased Cognitive and Perceptual Flexibility; Increased Behavioral Flexibility; Increased Learning Ability; Improved Mental Health and Sense of Well-Being; More Ideal Levels of Blood Pressure.

D: Motor and Perceptual Ability

301. SCHWARTZ, E. The effects of the Transcendental Meditation program on strength of the nervous system, perceptual reactance, reaction time, and auditory threshold. Master's thesis (abbr.), Department of Exercise Science, University of Massachusetts, Amherst, Massachusetts, U.S.A., 1979.

Increased Sensitivity, Strength, and Flexibility of the Nervous System; Improved Auditory Thresholds; Faster Reactions at High and Low Levels of Stimulation; Decreased Perceptual Reactance.

302. FRANCE, R. An investigation into the effects of Transcendental Meditation upon hearing threshold. North Staffordshire Polytechnic, Stoke on Trent, Staffordshire, England, 1983.

Improved Auditory Thresholds; Decreased Heart Rate.

PART II: PSYCHOLOGY

A: Intelligence, Learning, and Academic Performance

303. ALEXANDER, C. N.; KURTH, S. C.; TRAVIS, F.; WARNER, T.; and ALEXANDER, V. K. Cognitive stage development in children practicing the Transcendental Meditation program: Acquisition and consolidation of conservation. Department of Psychology and Social Relations, Harvard University, Cambridge, Massachusetts, U.S.A.; Hampshire College, Amherst, Massachusetts, U.S.A.; Department of Psychology and Department of Management and Public Affairs, Maharishi International University, Fairfield, Iowa, U.S.A.; and Department of Psychology, York University, Toronto, Ontario, Canada, 1979.

More Rapid Cognitive Growth and Consolidation in Pre- and Primary School Children Vital for Academic Achievement and General Cognitive Development: Superior Performance and Consolidation on Piagetian Conservation Tasks of Increasing Cognitive Difficulty Indicative of Mastery of Concrete Operational Skills.

304. BAER, N.; NIDICH, S.; and ABRAMS, A. A comparative study of Maharishi International University and two small private colleges on perceived personal growth, perceived academic atmosphere, and general quality of life. Master's thesis, Department of Education, Maharishi International University, Fairfield, Iowa, U.S.A., 1981.

Benefits of Maharishi's Integrated System of Education Perceived by Students at Maharishi International University: Better Academic Atmosphere; Greater Expectation to Gain Higher Degrees; Greater Motivation to Learn; Greater Enjoyment of School; Greater Mental Stability and Sense of Personal Security; Greater Sense of Control over Direction in Life; Greater Clarity of Personal Values; Greater Sensitivity to Other's Needs and Feelings; Greater Mental and Physical Relaxation; Better State of Physical Health.

305. WRYCZA, P. J. Some effects of the Transcendental Meditation and TM-Sidhi program on artistic creativity and appreciation. Doctoral thesis (summary), School of Modern Languages and European History, University of East Anglia, Norwich, Norfolk, England, 1982.

Enrichment of Creativity and Appreciation in Artists.

306. KEMBER, P. The Transcendental Meditation technique and academic performance: A short report on a controlled longitudinal pilot study. Findings published in *British Journal of Educational Psychology*, 55: 164–166, 1985. (Abstract)

Benefits for Graduate Students: Improved Academic Performance.

307. DILLBECK, M. C.; RAIMONDI, D.; ASSIMAKIS, P. D.; ROWE, R.; and ORME-JOHNSON, D. W. The longitudinal effects of the MIU curriculum on intelligence and field independence. Department of Psychology and Office of Evaluation, Maharishi International University, Fairfield, Iowa, U.S.A., 1984.

Benefits of Maharishi's Integrated System of Education for Students at

Maharishi International University: Increased Intelligence; Increased Field Independence.

B: Development of Personality

308. TÖRBER, S.; MERTESDORF, F.; and HIESEL, E. Effects of Transcendental Meditation on mood and bodily sensations. Diplomarbeit of first author (abbr.), University of Cologne, Cologne, W. Germany, 1976.

Less Nervousness (Less Psychosomatic Disturbance)⁶; Less Aggressiveness (Greater Self-Control, Greater Emotional Maturity); Less Depression (Greater Contentment, Greater Self-Confidence); Less Irritability (Greater Calm in Frustrating Situations, Greater Tolerance); Greater Placidity (Greater Self-Assuredness, More Good Humor, Less Tendency to Procrastinate); Less Inhibition (Greater Naturalness, Greater Spontaneity, Greater Self-Sufficiency); Less Neuroticism (Greater Emotional Stability, Less Tension); More Relaxation; More Activation; More Elation; Less Anxiety; Less Fatigue; Less Physical Tension; Less Physical Weakness; Increased Physical Well-Being.

⁶The terms in brackets are taken from the manual of the psychological test employed in order to clarify the characteristics measured by the test.

309. NIDICH, R., and NIDICH, S. I. An empirical study of the moral atmosphere at Maharishi International University/ University High School. Department of Education, Maharishi International University, Fairfield, Iowa, U.S.A., 1983.

Benefits of Maharishi's Integrated System of Education for Students at Maharishi International University High School: Increased Moral Maturity; High Level of Moral Atmosphere.

310. JEDRCZAK, A.; COX, D.; and CUNNINGHAM, C. Pilot testing of subjects practicing the Transcendental Meditation and TM-Sidhi program: Neuroticism, anxiety, well-being, and the capacity for absorbing experiences. Department of Psychology, MERU Research Institute, Mentmore, Buckinghamshire, England, and Department of Psychology, Institute of Psychiatry, London, England, 1982.

Greater Well-Being; Greater Sensitivity—Greater Ability to Focus Intently and Greater Responsiveness. Lower Anxiety; Lower Neuroticism.

311. EPPLEY, K. R.; ABRAMS, A.; and SHEAR, J. The effects of meditation and relaxation techniques on trait anxiety: A meta-analysis. Also published in Eppley, K.R., Abrams, A.I., and Shear, J. (1989). Differential effects of relaxation techniques on trait anxiety: A meta-analysis. *Journal of Clinical Psychology*, 45(6), 957–974.

Decreased Trait Anxiety: Greater Benefit from Transcendental Meditation Than from Other Meditation Techniques and Relaxation Procedures as Demonstrated by Meta-Analysis.

312. ALEXANDER, C. N.; ALEXANDER, V. K.; BOYER, R. W.; and JEDRCZAK, A. The subjective experience of higher states of consciousness and the Maharishi Technology of the Unified Field: Personality, cognitive-perceptual, and physiological correlates of growth to enlightenment. Harvard University, Cambridge, Massachusetts, U.S.A.; Maharishi International University, Fairfield, Iowa, U.S.A.; and MERU Research Institute, Mentmore, Buckinghamshire, England, 1984.

Growth of Higher States of Consciousness. Experiences of Higher States of Consciousness Correlated with: Better Self-Concept (Greater Self-Actualization, Greater Internality of Locus of Control); Greater Creativity (Greater Fluency, Flexibility, and Originality); Profound Physiological Rest (Episodes of Spontaneous Breath Suspension during Transcendental Meditation); Greater Neurological Integration (High EEG Alpha and Theta Coherence); Greater Neurophysiological Efficiency (Faster H-Reflex Recovery); Superior Cognitive, Perceptual, and Motor Skills (Superior Perceptual Speed, Motor Speed, Psychomotor Speed and Flexibility, Nonverbal Intelligence, and Visual Memory); Less Symptoms of Stress (Lower Anxiety, Aggression, Depression, Introversiveness, and Neuroticism); Greater Capacity for Absorbing Experiences. (The correlates of higher states of consciousness summarized in this paper are drawn from both new experimental findings and the results of other studies reported in the volumes of this series.)

PART III: SOCIOLOGY

A. Rehabilitation

313. BROOKS, J. S., and SCARANO, T. Transcendental Meditation in the treatment of post-Vietnam adjustment. *Journal of Counseling and Development* 64: 212–215, 1986. Improvements in Post-Vietnam Adjustment Problems: Decreased Post-Vietnam Stress Disorder; Decreased Anxiety; Decreased Depression; Decreased Alcohol Consumption; Decreased Insomnia; Improved Employment Status; Decreased Family Problems.

314. GORE, S. W.; ABRAMS, A.; and ELLIS, G. The effect of statewide implementation of the Maharishi Technology of the Unified Field in the Vermont Department of Corrections. Institute for Social Rehabilitation, Burlington, Vermont, U.S.A., 1984. Rehabilitation of Prisoners: Decreased Sleep Disturbance (Decreased Awakenings per Night, Decreased Time to Sleep Onset, Improved Quality of Sleep); Decreased Paranoid Anxiety; Increased Internality of Locus of Control; Decreased Hostility; Greater Control of Anger. Benefits for Correctional Staff: Decreased Sleep Disturbance; Decreased Hostility; Decreased Paranoid Anxiety.

B. Quality of Life

315. ARON, E. N., and ARON, A. Transcendental Meditation program and marital

adjustment. *Psychological Reports* 51: 887–890, 1982.
Greater Marital Satisfaction: Greater Marital Adjustment.

316. MARCUS, S. V. The influence of the Transcendental Meditation program on the marital dyad. Doctoral dissertation, California School of Professional Psychology, Fresno, California, U.S.A. *Dissertation Abstracts International* 38(8): 3895–B, 1977.
Benefits for Married Couples: Decreased Nervousness (Increased Composure and Relaxation); Increased Sociability, Energy, and Enthusiasm; Increased Ability for Spontaneous Expression of Warmth and Affection; Increased Ability to Be Sympathetic, Compassionate, and Understanding; Increased Ability to Be Objective, Fair-Minded, and Reasonable; Increased Tolerance and Acceptance of Others; Increased Self-Discipline, Decreased Impulsiveness (Increased Emotional Maturity); Decreased Proneness toward Anxiety.

Findings Reflecting Growth of Coherence in Collective Consciousness on City, State, Provincial, National, and International Levels

317. LANDRITH III, G. S., and DILLBECK, M. C. The growth of coherence in society through the Maharishi Effect: Reduced rates of suicides and auto accidents. Maharishi International University, Fairfield, Iowa, U.S.A., 1983.
Improved Quality of City Life: Decreased Automobile Accident Rate; Decreased Suicide Rate (Cities, U.S.A., 1973–1977) .

318. DILLBECK, M. C.; LANDRITH III, G.; and ORME-JOHNSON, D. W. The Transcendental Meditation program and crime rate change in a sample of forty-eight cities. Findings previously published in *Journal of Crime and Justice* 4: 25–45, 1981.
Improved Quality of City Life: Decreased Crime Rate (Cities, U.S.A., 1973–1978).

319. DILLBECK, M. C. The Transcendental Meditation program and a compound probability model as predictors of crime rate change. Maharishi International University, Fairfield, Iowa, U.S.A., 1978.
Improved Quality of City Life: Decreased Crime Rate (Cities, U.S.A., 1974–1976).

320. DILLBECK, M. C.; LANDRITH III, G. S.; POLANZI, C.; and BAKER, S. R. The Transcendental Meditation program and crime rate change: A causal analysis. Department of Psychology, Maharishi International University, Fairfield, Iowa, U.S.A.; Center for the Study of Crime, Delinquency, and Corrections, Southern Illinois University, Carbondale, Illinois, U.S.A.; and Department of Educational Psychology, West Virginia University, Morgantown, West Virginia, U.S.A., 1982.
Decreased Crime Rate (Cities and Metropolitan Areas, U.S.A., 1973–1978).

321. DILLBECK, M. C.; FOSS, A. P. O.; and ZIMMERMANN, W. J. Maharishi's Global Ideal Society Campaign: Improved quality of life in Rhode Island through the

Transcendental Meditation and TM-Sidhi program. Maharishi International University, Fairfield, Iowa, U.S.A., and Maharishi European Research University Research Institute, Mentmore, Buckinghamshire, England, 1983.

Improved Quality of Provincial Life as Measured by an Index Including: Total Crime Rate, Mortality Rate, Motor Vehicle Fatality Rate, Auto Accident Rate, Unemployment Rate, Pollution, Beer Consumption Rate, and Cigarette Consumption Rate (Rhode Island, U.S.A., 1978).

322. ORME-JOHNSON, D. W.; DILLBECK, M. C.; BOUSQUET, J. G.; ALEXANDER, C.N. The World Peace Project of 1978: An experimental analysis of the application of the Maharishi Technology of the Unified Field in major world trouble spots: Increased harmony in international affairs. Department of Psychology, Maharishi International University, Fairfield, Iowa, U.S.A., 1979.

Increased Harmony in International Affairs (Worldwide, 1978); Improvements in Domestic Affairs and International Relations for Major Trouble-Spot Countries (1978); Decreased War Deaths [Rhodesia (Now Zimbabwe), 1978].

323. DAVIES, J. L., and ALEXANDER, C. N. The Maharishi Technology of the Unified Field and improved quality of life in the United States: A study of the First World Peace Assembly, Amherst, Massachusetts, 1979. Macquarie University, North Ryde, New South Wales, Australia, and Harvard University, Cambridge, Massachusetts, U.S.A., 1983.

Improved Quality of National Life: Decreased Violent Crime; Decreased Motor Vehicle Fatalities; Decreased Number of Fatalities from Accidents, Suicide, and Homicide; Decreased Air Traffic Fatal Accidents; Increased Confidence, Optimism, and Economic Prosperity: Rise in Stock Market Index (U.S.A., 1979). Improved Quality of Provincial Life: Decreased Motor Vehicle Fatalities; Decreased Violent Crime (Massachusetts, USA, 1979); Decreased Air Traffic Fatal Accidents (New England, USA, 1979).

324. RABINOFF, R. A.; DILLBECK, M. C.; and DEISSLER, R. Effect of coherent collective consciousness on the weather. Departments of Physics and Psychology, Maharishi International University, Fairfield, Iowa, U.S.A., 1981.

Support of Nature for Coherence Creating Group: More Moderate Winter Temperature during Construction of Maharishi International University's First Golden Dome (Iowa, U.S.A., 1979–1980).

Improved Quality of National Life: Decreased Crime (Holland, 1979 and 1981); Decreased Automobile Accidents with Injury (Holland, 1979).

325. BURGMANS, W.H.P.M; BURGT, A.T. VAN DER; LANGENKAMP, F.P. TH.; and VERSTEGEN, J.H. Sociological effects of the group dynamics of consciousness: Decrease of crime and traffic accidents in Holland. Maharishi College of Natural Law, Rotterdam, the Netherlands, 1982.

Improved Quality of National Life: Decreased Crime (Holland, 1979 and 1981); Decreased Automobile Accidents with Injury (Holland, 1979)

326. DILLBECK, M. C.; CAVANAUGH, K. L.; and BERG, W. P. VAN DEN. The effect of

the group dynamics of consciousness on society: Reduced crime in the Union Territory of Delhi, India. Maharishi International University, Fairfield, Iowa, U.S.A.; University of Washington, Seattle, Washington, U.S.A.; and Maharishi European Research University, Seelisberg, Switzerland, 1983.

Improved Quality of Provincial Life: Decreased Crime (Delhi, India, 1980–1981).

327. DILLBECK, M. C.; LARIMORE, W. E.; and WALLACE, R. K. A time series analysis of the effect of the Maharishi Technology of the Unified Field: Reduction of traffic fatalities in the United States. Maharishi International University, Fairfield, Iowa, U.S.A., and Scientific Systems, Inc., Cambridge, Massachusetts, U.S.A., 1984.

Improved Quality of National Life: Decreased Motor Vehicle Fatalities (U.S.A., 1982).

328. LANFORD, A. G. Reduction in homicide in Washington, D. C. through the Maharishi Technology of the Unified Field, 1980–83: A time series analysis. Maharishi International University, Fairfield, Iowa, U.S.A., 1984.

Improved Quality of City Life: Decreased Homicide (Washington, D. C., U.S.A., 1981–1983).

329. LANFORD, A. G. The effect of the Maharishi Technology of the Unified Field on stock prices of Washington, D.C. area based corporations, 1980–83: A time series analysis. Maharishi International University, Fairfield, Iowa, U.S.A., 1984.

Improved Quality of City Life: Increased Confidence and Economic Prosperity: Rise in Value of Corporate Stocks (Washington, D. C., U.S.A., 1981–1983).

330. BERESFORD, M. S., and CLEMENTS, G. The group dynamics of consciousness and the U.K. stock market. MERU Research Institute, Mentmore, Buckinghamshire, England, 1983.

Improved Quality of National Life: Increased Confidence, Optimism, and Economic Prosperity: Rise in Stock Market Index (United Kingdom, 1982–1983).

331. ABOU NADER, T. M.; ALEXANDER, C. N.; and DAVIES, J. L. The Maharishi Technology of the Unified Field and reduction of armed conflict: A comparative, longitudinal study of Lebanese villages. American University of Beirut, Beirut, Lebanon; Harvard University, Cambridge, Massachusetts, U.S.A.; and Macquarie University, North Ryde, New South Wales, Australia, 1984.

Improved Quality of Community Life: Cessation of Attack on a Community and Protection from Ongoing Armed Conflict in the Surrounding Area (Lebanon, 1982–1984).

332. ORME-JOHNSON, D. W., and GELDERLOOS, P. The long-term effects of the Maharishi Technology of the Unified Field on the quality of life in the United States (1960 to 1983). A version published in *Social Science Perspectives Journal* 2(4): 127–146, 1988.

Improved Quality of National Life as Measured by an Index Including: Crime Rate, Percentage of Civil Cases Reaching Trial, Rate of Infectious Diseases, Infant Mortality Rate, Suicide Rate, Cigarette Consumption, Alcohol Consumption, Gross National Product, Patent Application Rate, Number of Degrees Conferred, Divorce Rate, and Traffic Fatalities (U.S.A., 1976–1983).

333. ORME-JOHNSON, D. W.; ALEXANDER, C. N.; DAVIES, J. L.; CHANDLER, H. M.; and LARIMORE, W. E. International peace project in the Middle East: The effect of the Maharishi Technology of the Unified Field. *Journal of Conflict Resolution*, 32(4): 776–812, 1988. Improved Quality of National Life as Measured by Composite Indices Comprising Data on War Intensity in Lebanon, Newspaper Content Analysis of Israeli National Mood, Tel Aviv Stock Index, Automobile Accident Rate in Jerusalem, Number of Fires in Jerusalem, and Maximum Temperature in Jerusalem; Significant Improvement in Each Variable in the Index (Israel, 1983). Decreased War Deaths (Lebanon, 1983).

334. DILLBECK, M. C.; MITTLEFEHLDT, V.; LUKENBACH, A. P., CHILDRESS, D.; ROYER, A.; WESTSMITH, L.; and ORME-JOHNSON, D. W. A time series analysis of the relationship between the group practice of the Transcendental Meditation and TM-Sidhi program and crime rate change in Puerto Rico. Maharishi International University, Fairfield, Iowa, U.S.A., and Maharishi International Caribbean, Fajardo, Puerto Rico, 1984. Improved Quality of Provincial Life: Decreased Crime (Puerto Rico, U.S.A., 1984).

335. ALEXANDER, C. N.; ABOU NADER, T. M.; CAVANAUGH, K. L.; DAVIES, J. L.; DILLBECK, M. C.; KFOURY, R. J.; and ORME-JOHNSON, D. W. The effect of the Maharishi Technology of the Unified Field on the war in Lebanon: A time series analysis of the influence of international and national coherence creating assemblies. Maharishi International University, Fairfield, Iowa, U.S.A., and Massachusetts Institute of Technology, Cambridge, Massachusetts, U.S.A., 1984.

Improved Quality of National Life: Increased Progress towards Peaceful Resolution of Conflict and Decreased War Intensity; Decreased War Deaths and War Injuries (Lebanon, 1983–1984); Increased Confidence and Economic Prosperity: Improved Foreign Exchange Rate (Lebanon, 1984).

336. CAVANAUGH, K. L.; ORME-JOHNSON, D. W.; and GELDERLOOS, P. The effect of the Taste of Utopia Assembly on the World index of international stock prices. Department of Management and Public Affairs and Department of Psychology, Maharishi International University, Fairfield, Iowa, U.S.A., 1984.

Increased Global Confidence, Optimism, and Economic Prosperity as Measured by Rise of World Stock Index and Simultaneous Increase in Major Stock Market Indices (Worldwide, 1983–1984).

337. ORME-JOHNSON, D. W.; CAVANAUGH, K. L.; ALEXANDER, C. N.; GELDERLOOS, P.; DILLBECK, M.; LANFORD, A. G.; and ABOU NADER, T. M. 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. Department of Psychology and Department of Management and Public Affairs, Maharishi International University, Fairfield, Iowa, U.S.A., and Department of Nutrition and Food Science, Massachusetts Institute of Technology, Cambridge, Massachusetts, U.S.A., 1984.

7A Global Taste of Utopia: Increased Harmony in International Affairs—Increased Progress towards Peaceful Resolution of Conflict; More Positive, Evolutionary Statements and Actions of Heads of State and International Support for Their Policies and Leadership; Increased Confidence, Optimism, and Economic Prosperity as Measured by Rise of World Stock Index and Simultaneous Increase in Major Stock Market Indices; Decreased Air Traffic Fatalities (Worldwide, 1983-1984); Decreased Traffic Fatalities (U.S.A.; South Africa; States of New South Wales, Victoria, and Western Australia, Australia, 1983–1984); Decreased Crime (State of Victoria, Australia; Washington, D.C., U.S.A.; and Karachi, Pakistan, 1983–1984); Decreased Incidence of Infectious Diseases (U.S.A. and Australia, 1983–1984); Increased Creativity as Measured by Increased Patent Applications (U.S.A., Australia, South Africa, and United Kingdom, 1983–1984).

7 In order to evaluate the effects of the Taste of Utopia Assembly, 17 Dec.-6 Jan. 1984, Maharishi International University, Fairfield, Iowa, U.S.A., data were gathered by the authors of this study from a) requests sent to a sample of countries on every continent; b) requests for crime statistics sent to all the world's major cities; c) international organizations; and d) the world's news media. Presented are the results of the analysis of the data obtained at the time of publication.

PART IV: REVIEW PAPERS

Papers 338 to 355 review the application of the Transcendental Meditation and TM-Sidhi program in the areas of health, education, development of personality, rehabilitation, and quality of life.

A: Health

338. WERNER, O. Das Programm der Transzendentalen Meditation in der Medizin. *Schweizerische Ärztezeitung* (39): 1722–1726, 1978.

339. WERNER, O. Perfect health through enlightenment. In *XIVth International Congress of Internal Medicine Abstracts*, Rome, Italy, October 1978, pp. 370–371. Amsterdam: Excerpta Medica.

340. ORME-JOHNSON, D. W.; WALLACE, R. K.; DILLBECK, M. C.; and KAY (ROSENBERG), N. Recent biochemical and physiological research on the Transcendental Meditation and TM-Sidhi program: Clinical and epidemiological applications. Center for the Study of Higher States of Consciousness, Maharishi International University, Fairfield, Iowa, U.S.A. Paper presented at the American

Psychiatric Association, 132nd Annual Meeting, Chicago, Illinois, U.S.A., 17 May 1979.

341. BLICHER, B.; BLONDEAU, F.; CHOQUETTE, C.; DEANS, A.; DROUIN, P.; GLASER, J.; and THIBAudeau, P. Méditation Transcendantale revue de la littérature scientifique. *Le Médecin du Québec* 15(8): 46–66, 1980.

342. GUGLIELMI, I. *Meditazione Trascendentale: Ricerche sui cambiamenti fisiologici e clinici*. Bergamo, Italy: Edizioni Walk Over Srl, 1978.

343. HUYNH, N-N. *Elimination du stress par la technique de Méditation Transcendantale*. Doctoral thesis (abbr.), Faculty of Dental Surgery, René Descartes University, Paris, France, 1981.

344. RASMUSSEN, S. G.; JENSEN, M. R.; and RODENBERG, J. *Præsentation af en sundhedsmodel*. *Ugeskrift for Læger* 145(24): 1900–1902, 1983.

B: Education

345. RAIMONDI, D., and DILLBECK, S. L. Maharishi International University's educational index: Psychophysiological assessment of holistic development. Maharishi International University, Fairfield, Iowa, U.S.A. Paper presented at the 89th Annual Convention of the American Psychological Association, Los Angeles, California, U.S.A., 26 August 1981.

346. DILLBECK, M. C., and DILLBECK, S. L. *The Transcendental Meditation and TM-Sidhi program: An educational technology for the development of the knower*. Maharishi International University, Fairfield, Iowa, U.S.A., 1983.

347. DILLBECK, S. L. Maharishi's integrated system of education: Offering excellence in American education. In *Proceedings of the hearing before the Subcommittee on Education, Arts and Humanities of the Committee on Labor and Human Resources, United States Senate, Ninety-Eighth Congress, First Session, on Examination of the Report of the National Commission on Excellence in Education*, 22 September 1983, pp. 522–531. Washington, D.C.: U.S. Government Printing Office, 1984.

C: Personality

348. NIDICH, S. I., and ORME-JOHNSON, D. W. Kohlberg Stage 7, natural law, and the Transcendental Meditation and TM-Sidhi program. In *Proceedings of the International Symposium on Moral Education*, University of Fribourg, Fribourg, Switzerland, 3 September 1982.

349. DILLBECK, M. C. Testing the Vedic Psychology of the *Bhagavad-Gita*. *Psychologia* 26: 232–240, 1983.

D: Rehabilitation

350. DEVAKAR. Correctional technique—A fresh approach through SCI. Department of Social Work, Kashi Vidyapeeth, Varanasi, Uttar Pradesh, India. Paper presented at the Third All India Penological Conference, Lucknow, Uttar Pradesh, India, 22–24 November 1975.

351. ARON, A., and ARON, E. N. The Transcendental Meditation program's effect on addictive behavior. *Addictive Behaviors* 5: 3–12, 1980.

352. ORME-JOHNSON, D. W. Prison rehabilitation and crime prevention through the Transcendental Meditation and TM-Sidhi program. In *Holistic approaches to offender rehabilitation*, ed. Leonard J. Hippchen, Chapter 15, 346–383. Springfield, Illinois: Charles C. Thomas Publishing, 1981.

353. DILLBECK, M. C., and ABRAMS, A. I. The application of the Transcendental Meditation program to corrections and crime prevention. Maharishi International University, Fairfield, Iowa, U.S.A. Paper presented in part at the Academy of Criminal Justice Sciences Conference, Louisville, Kentucky, U.S.A., 26 March 1982.

E: Quality of Life

354. ARON, A., and ARON, E. N. Transcendental Meditation program for building family strengths: Blueprint for invincibility. Department of Psychology, Maharishi International University, Fairfield, Iowa, U.S.A. Paper presented at the National Symposium on Building Family Strengths, University of Nebraska, Lincoln, Nebraska, U.S.A., 4 May 1978.

355. ORME-JOHNSON, D. W., and DILLBECK, M. C. A proposal to establish a U.S. Academy of Peace. In *Proceedings of the hearing before the Subcommittees on International Security and Scientific Affairs and on International Operations of the Committee on Foreign Affairs, and the Subcommittee on Postsecondary Education of the Committee on Education and Labor, House of Representatives, Ninetieth Congress, Second Session, on bills H.R. 5088 and H.R. 6182*, 21 July 1982, pp. 241–250. Washington, D.C.: U.S. Government Printing Office, 1982.

VOLUME 5

WALLACE, R.K., ORME-JOHNSON, D.W., and DILLBECK, M.C., eds. 1990. *Scientific Research on Maharishi's Transcendental Meditation program: Collected papers*, vol. 5. Fairfield, Iowa: MIU Press

PART I: PHYSIOLOGY

The Studies in the First Section Document Changes during the Practice of the Transcendental Meditation Technique Unless Otherwise Stated.

A: Metabolic, Biochemical, and Cardiovascular Changes

356. DILLBECK, M. C., and ORME-JOHNSON, D. W. Physiological differences between Transcendental Meditation and rest. *American Psychologist* 42: 879–881, 1987.
A Unique State of Deep Rest: Meta-Analysis of 32 Studies; Higher Basal Skin Resistance; Lower Respiration Rate; Lower Plasma Lactate. Lower Baseline Levels of Spontaneous Skin Resistance Responses, Respiration Rate, Heart Rate, and Plasma Lactate.
357. FARRELL, D. J. The reduction in metabolic rate and heart rate of man during meditation. *Energy Metabolism*, Lawrence E. Mount (Ed.), E.A.A.P. Publication # 26, Butterworth & Co. (Publishers) Ltd. 279–282, 1980.
A Unique State of Deep Rest: Reduction in Metabolic Rate; Reduction in Heart Rate.
358. GALLOIS, P. Modifications neurophysiologiques et respiratoires lors de la pratique des techniques de relaxation. *L'Encéphale* 10: 139–144, 1984.
A Unique State of Deep Rest: Lower Heart Rate; Decreased Breath Rate; Episodes of Spontaneous Respiratory Suspension (Without Compensatory Hyperventilation). Increased Alertness: Faster Reaction Time after the Practice. Lower Heart Rate outside the Practice.
359. GARNIER, D.; CAZABAT, A.; THÉBAULT, P.; and GAUGE, P. An experimental study: pulmonary ventilation during the Transcendental Meditation technique—applications in preventive medicine. Summary of a paper that appeared in *Est-Médecine* 4(76): 867–870, 1984.
A Unique State of Deep Rest: Lower Oxygen Consumption per Kilo Body Weight during and outside TM Practice.
360. SHARMA, H. M., and STEPHENS, R. E. The effects of the Transcendental Meditation and TM-Sidhi program on DNA repair. Presented in part at the Federation of the American Society of Experimental Biologists meeting, St. Louis, Missouri, April 1986.
Unique pattern of DNA Repair.
361. WILSON, A. F.; JEVNING, R.; and GUICH, S. Marked reduction of forearm carbon dioxide production during states of decreased metabolism. *Physiology and Behavior* 41: 347–352, 1987.
Unique State of Deep Rest: Reduced Difference between Arterial and Venous CO₂ Content in Forearm Metabolism.
362. JEVNING, R.; WILSON, A. F.; PIRKLE, H.; GUICH, S.; and WALSH, R. N. Modulation of red cell metabolism by states of decreased activation: comparison between states. *Physiology and Behavior* 35: 679–682, 1985.
A Unique State of Deep Rest: Marked Decline of Red Cell Metabolism.

363. WERNER, O. R.; WALLACE, R. K.; CHARLES, B.; JANSSEN, G.; STRYKER, T.; and CHALMERS, R. A. Long-term endocrinologic changes in subjects practicing the Transcendental Meditation and TM-Sidhi program. *Psychosomatic Medicine* 48(1/2): 59–65, 1986.
Increased Endocrinological Efficiency: Long-Term Reduction in Basal Levels of Pituitary Hormones (TSH, Growth Hormone, and Prolactin), with Maintenance of Adrenal and Thyroid Hormone Levels.
364. JEVNING, R.; WELLS, I.; WILSON, A. F.; and GUICH, S. Plasma thyroid hormones, thyroid stimulating hormone, and insulin during acute hypometabolic states in man. *Physiology and Behavior* 40: 603–606, 1987.
More Efficient Neuroendocrine Regulation: Reduction of Pituitary Hormone TSH with Maintenance of Thyroid Hormones and Insulin Levels. Lower Baseline TSH Levels in Long-Term TM Participants.
365. WALTON, K. G.; FRANCIS, D.; LEROM, M.; and TOURENNE, C. Behaviorally-induced alterations in human urinary 5-hydroxyindoles. *Transactions of the American Society for Neurochemistry* 14: 199, 1983.
Neurotransmitter Modulation: Change in Daily Cycle of Urinary 5-Hydroxyindoles, Metabolites Related to Serotonin.
366. O'HALLORAN, J. P.; JEVNING, R.; WILSON, A. F.; SKOWSKY, R.; WALSH, R. N.; and ALEXANDER, C. Hormonal control in a state of decreased activation: potentiation of arginine vasopressin secretion. *Physiology and Behavior* 35: 591–595, 1985.
Hormonal Growth: Increased Plasma Level of Arginine Vasopressin, Associated with Body Fluid Balance and with Learning and Memory.
367. MILLS, P. J.; SCHNEIDER, R.; HILL, D.; WALTON, K.; and WALLACE, R. K. Lymphocyte beta-adrenergic receptors and cardiovascular responsivity in TM participants and Type A behavior. This is a summary of a paper presented at the Annual Meeting of the American Psychosomatic Society, Philadelphia, Pennsylvania, March, 1987. (Refer also to *Psychosomatic Medicine* 49: 211, 1987, and *Journal of Psychosomatic Research* 33(6), 1989).
Improved Stress Reactivity: Lower Beta-Adrenergic Receptor Sensitivity; Lower Blood Reactivity to Stress; Lower Resting Blood Pressure; Lower Resting Epinephrine Level.
368. SCHNEIDER, R. H.; MILLS, P. J.; SCHRAMM, W.; and WALLACE, R. K. Luteinizing hormone: a marker for Type A behavior and its modification by the Transcendental Meditation program? *Psychosomatic Medicine* 49: 212–213, 1987. (Refer also to *Neuroendocrinology Letters* 9:181, 1987).
Lower Chronic Stress: Normal Neuroendocrine Reactivity; Meditating Type A Subjects Showed Healthy Neuroendocrine Pattern.

B: Electrophysiological and Electroencephalographic Changes

369. ALEXANDER, C. N.; LARIMORE, W. E.; DASH, P.; TITUS, B.; and ISRAELSON, L. Distinguishing between Transcendental Meditation, sleep and other forms of rest according to electrophysiological criteria. Summary of a paper presented at the Midwestern Psychological Association Meeting, Chicago, Illinois, May 1987.

EEG Differentiation between Transcendental Meditation and Napping.

370. GAYLORD, C.; ORME-JOHNSON, D.; and TRAVIS, F. The effects of the Transcendental Meditation technique and progressive muscle relaxation on EEG coherence, stress reactivity, and mental health in black adults. *International Journal of Neuroscience* 46: 77–86, 1989.

Increased Functional Organization of the Brain: Increased EEG Coherence during TM Practice. Improved Mental Health; Decreased Anxiety; Decreased Neuroticism; Faster Recovery from Stress.

371. GAYLORD, C.; ORME-JOHNSON, D.; WILLBANKS, M.; TRAVIS, F.; RAINFORTH, M.; and REYNOLDS, B. The effects of the Transcendental Meditation program on self-concept and EEG coherence in black college students. Abstract of paper presented at the 101st session of the Iowa Academy of Science, Storm Lake, Iowa, April 1989. Also see abstract insert in *Journal of the Iowa Academy of Science* 96(1), A31–A32.

Increased Functional Organization of the Brain: Increased EEG Coherence during TM Practice. Improved Self-Concept: Increased Self-Satisfaction; Increased Moral-Ethical Self; Increased Social Self; Decreased General Maladjustment; Decreased Personality Disorder.

372. DILLBECK, M. C., and ARAAS-VESELY, S. Participation in the Transcendental Meditation program and frontal EEG coherence during concept learning. *International Journal of Neuroscience* 29: 45–55, 1986.

Increased Frontal EEG Coherence during Acquisition of New Information; More Settled Physiological Response during Cognitively Demanding Tasks.

373. MEIRSMAN, J. Neurophysiological order in the REM sleep of participants of the Transcendental Meditation and TM-Sidhi program. Summary of paper presented at the Sixth Annual International Conference of the Association for the Study of Dreams, London, England, July 1989.

Increased Order-Producing Activity of the Brain during Sleep as Indicated by the Ratio of High Frequency to Low Frequency REM.

374. GODDARD, P. H. Reduced age-related declines of P300 latency in elderly practicing Transcendental Meditation. *Psychophysiology* 26: S29, 1989.

Faster Processing of Cognitively Complex Information in the Elderly as Measured by Event-Related Potentials.

375. TRAVIS, F., and ORME-JOHNSON, D. W. EEG coherence and power during yogic flying. Abstract of a portion of the first author's doctoral dissertation, Department of Psychology, Maharishi International University, Fairfield, Iowa, 1988. (Refer

also to *Dissertation Abstracts International* 49(8): 3493B, 1988. Full paper published in *International Journal of Neuroscience*, 54: 1–12, 1990.

Increased EEG Coherence at the Moment of Performance of TM-Sidhi Yogic Flying.

C: Health

376. GLASER, J. L.; BRIND, J. L.; EISNER, M. J.; DILLBECK, M. C.; VOGELMAN, J. H.; and WALLACE, R. K. Elevated serum dehydroepiandrosterone sulfate levels in older practitioners of the Transcendental Meditation and TM-Sidhi programs. Paper presented at the Annual Meeting of the Society for Neuroscience, Washington, D.C., November 1986. An abstract of these results also appeared in *AGE* 10(4): 160, 1987.

Hormone Levels Indicating Younger Biological Age.

377. SMITH, D. E.; GLASER, J. L.; SCHNEIDER, R. H.; and DILLBECK, M. C. Erythrocyte sedimentation rate (ESR) and the Transcendental Meditation (TM) program. *Psychosomatic Medicine* 51: 259, 1989. (Also, refer to *AGE* 10(4): 160, 1987.)

Lower Erythrocyte Sedimentation Rate Levels Indicating Less Serious Illness and Slower Aging.

378. ORME-JOHNSON, D. Medical care utilization and the Transcendental Meditation program. *Psychosomatic Medicine* 49(1): 493–507, 1987.

Lower Health Insurance Utilization Rates: Significantly Fewer Hospital Inpatient Days, Outpatient Visits; Fewer Inpatient Admissions for All Major Categories of Disease.

379. ORME-JOHNSON, D., and VEGORS, S. Medical care utilization at Maharishi International University, Fairfield, Iowa. Abstract of paper presented at the 100th Session, Iowa Academy of Science, Ames, Iowa, April 1988. Abstract insert in the *Journal of the Iowa Academy of Science* 95(1): A56.

Lower Health Insurance Utilization Rates among MIU Faculty and Staff.

380. ALEXANDER, C. N.; LANGER, E. J.; NEWMAN, R. I.; CHANDLER, H. M.; and DAVIES, J.L. Transcendental Meditation, mindfulness, and longevity: an experimental study with the elderly. Summary of paper in the *Journal of Personality and Social Psychology* 57(6): 950–964, 1989.

Benefits for the Elderly Demonstrating Reversal of Aging: Increased Longevity; Increased Cognitive Flexibility (Including Increased Learning Ability and Greater Perceptual Flexibility); Increased Word Fluency; Improvements in Self-Reported Measures of Behavioral Flexibility and Aging; Greater Sense of Well-Being; Improved Mental Health; Reduction of Blood Pressure to More Ideal Levels.

PART II: PSYCHOLOGY

A: Intelligence, Learning, and Academic Performance

381. DOAN, M. J. Transcendental Meditation program as a prenatal factor in the quiet alert state in normal newborns. Summary of a paper presented at the Annual Meeting of the National Association of Young Children, Anaheim, California, November 1988.

Increased Quiet Alertness in Newborns of Mothers Practicing the Transcendental Meditation and TM-Sidhi Program.

382. DIXON, C. A. Consciousness and cognitive development: a six-month longitudinal study of four-year-olds practicing the children's Transcendental Meditation technique. Abstract of Doctoral Dissertation, Department of Psychology, Maharishi International University, Fairfield, Iowa, 1989. *Dissertation Abstracts International* , 51 (3) Section B: 1518, 1989.

Accelerated Cognitive Development in Four-Year-Old Children Practicing the Children's Transcendental Meditation Technique.

383. WARNER, T. Q. Transcendental Meditation and developmental advancement: mediating abilities and conservation performance. *Dissertation Abstracts International* 47(8): 3558B, 1986.

Advanced Cognitive Development in Children.

384. GELDERLOOS, P.; LOCKIE, R. J.; and CHUTTOORGOON, S. Field independence of students at Maharishi School of the Age of Enlightenment and a Montessori school. *Perceptual and Motor Skills* 65: 613–614, 1987.

Increased Field Independence (Growth of a More Stable Internal Frame of Reference, Increased Perceptual Acuity) in Children.

385. NIDICH, S. I.; NIDICH, R. J.; and RAINFORTH, M. School effectiveness: achievement gains at the Maharishi School of the Age of Enlightenment. *Education* 107: 49–54, 1986.

Increased Academic Achievement for Both Incoming and Continuing Students at Maharishi School of the Age of Enlightenment.

386. NIDICH, S. I., and NIDICH, R. J. Increased academic achievement at Maharishi School of the Age of Enlightenment: a replication study. *Education* 109(3): 302–304, 1989.

Improved Scores on Social Studies, Literary Materials, Reading, Quantitative Thinking, and General Academic Achievement for Students at Maharishi School of the Age of Enlightenment.

387. MUEHLMAN, J. M.; NIDICH, S. I.; REILLY, B.; and COLE, C. Relationship of the practice of the Transcendental Meditation technique to academic achievement. Paper presented at the Annual Meeting of the Mid-Western Educational Research Association, Chicago, Illinois, October 1988. (Refer also to *Abstracts of Papers of the Annual Meeting of the Mid-Western Educational Research Association*, p. 6, 1988.)

Increased Academic Achievement and IQ as a Function of Number of Months Practicing the Transcendental Meditation and TM-Sidhi Program in Secondary School Students.

388. NIDICH, R. J., and NIDICH, S. I. Improving the social climate of a Philippine secondary school through the practice of the Transcendental Meditation program. Summary of a paper presented at the Annual Meeting of the Mid-Western Educational Research Association, Chicago, Illinois, October 1988. (Refer also to *Abstracts of Papers of the Annual Meeting of the Mid-Western Educational Research Association*, p. 14, 1988.)

Increased Morale, Facilitative Leadership, and Influence in Decision Making Concerning Classroom Instruction in Teachers Practicing the Transcendental Meditation Program.

389. DILLBECK, M. C.; ASSIMAKIS, P. D.; RAIMONDI, D.; ORME-JOHNSON, D. W.; and ROWE, R. Longitudinal effects of the Transcendental Meditation and TM-Sidhi program on cognitive ability and cognitive style. *Perceptual and Motor Skills* 62: 731–738, 1986.

Increased Fluid Intelligence and Field Independence (Growth of a More Stable Internal Frame of Reference, Increased Perceptual Acuity) in College Students.

390. CRANSON, R. Increased general intelligence through the Transcendental Meditation and TM-Sidhi program. Abstract of a paper presented at the Annual Meeting of the American Psychological Association, New Orleans, August 1989.

Improvements in General Intelligence and Reaction-Time Measures (Which are Correlated with Intelligence).

391. KEMBER, P. The Transcendental Meditation technique and postgraduate academic performance. *British Journal of Educational Psychology* 55: 164–166, 1985.

Enhanced Academic Performance in Postgraduate Students.

392. JEDRCZAK, A.; BERESFORD, M.; and CLEMENTS, G. The TM-Sidhi program, pure consciousness, creativity and intelligence. *The Journal of Creative Behavior* 19(4): 270–275, 1985.

Enhanced Creativity and Intelligence.

393. JEDRCZAK, A.; TOOMEY, M.; and CLEMENTS, G. The TM-Sidhi program, age, and brief test of perceptual-motor speed and nonverbal intelligence. *Journal of Clinical Psychology* 42: 161–164, 1986.

Reduction of Aging Effects as Assessed by Perceptual/Motor Speed and Non-Verbal Intelligence.

B: Development of Personality

394. GELDERLOOS, P.; GODDARD III, P. H.; AHLSTRÖM, H. H. B.; and JACOBY R. Cognitive orientation toward positive values in advanced participants of the TM and TM-Sidhi program. *Perceptual and Motor Skills* 64: 1003–1012, 1987.

Orientation toward Positive Values: Better Recall for Positive than Negative Words; Lower Recognition Thresholds for Positive Words than Negative Words; Differential Recognition Threshold for Positive and Negative Affect Terms Correlated with the Intensity of the Experienced Positive and Negative Affects; More Positive Appraisal of Others.

395. GELDERLOOS, P. Psychological health and development of students at Maharishi International University: a controlled longitudinal study. *Modern Science and Vedic Science* 1(4): 471–487, 1987.

Student Psychological Development: Increased Psychological Health as Indicated by Unifying Ability, Autonomy, Intrinsic Spirituality, Creativity, Directedness, Well-Being, and Integration of the Personality; Higher Growth Rate on Several of These Indicators.

396. GELDERLOOS, P.; HERMANS, H. J. M.; AHLSTRÖM, H. H.; and JACOBY, R. Transcendence and psychological health: studies with long-term participants of the Transcendental Meditation and TM-Sidhi program. *Journal of Psychology* 124(2), 177–197, 1990.

Psychological Development: Higher Scores on General Factor of Psychological Health; Higher Growth Rate Longitudinally; Scores on Psychological Health Associated with Physiological Indicators of Transcendental Consciousness.

397. GELDERLOOS, P., and BETO, Z. H. A. D. The Transcendental Meditation and TM-Sidhi program and reported experiences of transcendental consciousness. This is a summary of a study that appeared in *Psychologia—An International Journal of Psychology in the Orient* 32(2): 91–103, 1989.

Experiences of Higher States of Consciousness: More Frequent Experiences of Transcendental Consciousness.

PART III: SOCIOLOGY

A: Rehabilitation

398. BLEICK, C. R., and ABRAMS, A.I. The Transcendental Meditation program and criminal recidivism in California. *Journal of Criminal Justice* 15: 211–230, 1987.
Rehabilitation of Prison Inmates: Reduced Recidivism after Release.

B: Productivity and Quality of Life

399. ALEXANDER, C. N.; SWANSON, G. C.; RAINFORTH, M. V.; CARLISLE, T. W.; and TODD, C. C. The Transcendental Meditation program and business: a prospective study. Paper presented at the 101st Annual Session of the Iowa Academy of Science, Storm Lake, Iowa, April 1989. Refer also to abstract insert in *The Journal of the Iowa Academy of Science* 96: A32, 1989.
Increased Productivity and Performance in Business: Increased Efficiency and Productivity; Improved Work and Personal Relationships; Reduced Anxiety; Reduced Job Worry and Tension; Improved Job Satisfaction; Improved General

Health; Enhanced Sleep and Reduced Fatigue; Reduced Cigarette and Liquor Consumption; Increased Physiological Stability during Task Performance.

400. CHEN, M. E. A comparative study of dimensions of healthy functioning between families practicing the TM program for five years or for less than a year. *Dissertation Abstracts International* 45(10) 3206B, 1984.
Improved Family Life: Family Health.

The Following Papers in This Section Document the Growth of Coherence in the Collective Consciousness of Cities, States, Nations, and the World.

401. DILLBECK, M. C.; CAVANAUGH, K. L.; GLENN, T.; ORME-JOHNSON, D. W.; and MITTLEFEHLDT, V. Consciousness as a field: the Transcendental Meditation and TM-Sidhi program and changes in social indicators. *The Journal of Mind and Behavior* 8(1): 67–104, 1987.

Improved Quality of Life in Cities and Territories: Decreased Crime (Union Territory of Delhi, 1980–1981; Metro Manila, 1984–1985; Puerto Rico, 1984). Improvements on Monthly Quality of Life Indices in Territories and States: Metro Manila Region, 1979–1981, Including Crime, Fetal Deaths, and Other Deaths; State of Rhode Island, U.S., 1978, Including Crime Rate, Motor Vehicle Fatality Rate, Mortality Rate for Other Causes, Auto Accident Rate, Unemployment Rate, Pollution, Beer Consumption Rate, and Cigarette Consumption Rate.

402. DILLBECK, M. C.; BANUS, C. B.; POLANZI, C.; and LANDRITH III, G. S. Test of a field model of consciousness and social change: the Transcendental Meditation and TM-Sidhi program and decreased urban crime. *The Journal of Mind and Behavior* 9(4): 457–486, 1988.
Improved Quality of City Life: Decreased Crime Rate (Cities and Metropolitan Areas, U.S., 1973–1979); Decreased Violent Crime (Washington, D.C., 1981–1983).

403. CAVANAUGH, K. L. Time series analysis of U.S. and Canadian inflation and unemployment: a test of a field-theoretic hypothesis. This is a revised and updated version of a paper presented at the Annual Meeting of the American Statistical Association, San Francisco, California, August 17–20, 1987, and published in *Proceedings of the American Statistical Association, Business and Economics Statistics Section* (Alexandria, Virginia: American Statistical Association): 799–804, 1987.

Improved Quality of National Life as Measured by a Monthly Index of Inflation and Unemployment (United States and Canada, 1979–1988).

404. CAVANAUGH, K. L., and KING, K. D. Simultaneous transfer function analysis of Okun's misery index: improvements in the economic quality of life through Maharishi's Vedic Science and technology of consciousness. Paper presented at the Annual Meeting of the American Statistical Association, New Orleans, Louisiana, August 22–25, 1988. An abridged version of this paper appeared in

Proceedings of the American Statistical Association, Business and Economics Statistics Section : 491–496, 1988.

Improved Quality of National Life as Measured by a Monthly Index of Inflation and Unemployment (United States, 1979–1988), Controlling for Monetary Growth and the Rate of Change of Crude Materials Prices.

405. CAVANAUGH, K. L.; KING, K. D.; and ERTUNA, C. A multiple-input transfer function model of Okun's misery index: an empirical test of the Maharishi Effect. Paper presented at the Annual Meeting of the American Statistical Association, Washington, D.C., August 6–10, 1989. An abridged version of this paper appears in *Proceedings of the American Statistical Association, Business and Economics Statistics Section* (Alexandria, Virginia: American Statistical Association): 565-570, 1989.

Improved Quality of National Life as Measured by a Monthly Index of Inflation and Unemployment (United States, 1979–1988), Controlling for the Rate of Change of Industrial Production, Crude Materials Prices, and a Measure of the Money Supply.

406. CAVANAUGH, K. L.; KING, K. D.; and TITUS, B. D. Consciousness and the quality of economic life: empirical research on the macroeconomic effects of the collective practice of Maharishi's Transcendental Meditation and TM-Sidhi program. This is a revised version of a paper presented at the Annual Meeting of the Midwest Management Society, Chicago, Illinois, March 1989, and published in R.G. Greenwood (ed.), *Proceedings of the Midwest Management Society* (Chicago, Illinois: Midwest Management Society): 183–190, 1989.

Improved Quality of National Life as Measured by a Monthly Index of Inflation and Unemployment (United States, 1979–1988), Controlling for Changes in Major Economic Variables.

407. DILLBECK, M. C. Test of a field theory of consciousness and social change: time series analysis of participation in the TM-Sidhi program and reduction of violent death in the U.S. Summary of a paper in *Social Indicators Research* 22: 399–418, 1990.

Improved Quality of National Life as Measured by a Weekly Index of Motor Vehicle Fatalities, Homicide, and Suicide (United States, 1979–1985).

408. ASSIMAKIS, P. D. Change in the quality of life in Canada: intervention studies of the effect of the Transcendental Meditation and TM-Sidhi program. Abstract published in *Dissertation Abstracts International* 50(5) Sec. B, p. 2203, November 1989.

Improved Quality of National Life: Improvements on a Weekly Index Including Motor Vehicle Fatalities, Homicide, and Suicide (Canada, 1983–1985); Reductions of Weekly Fatalities Due to Accidents Other than Motor Vehicle Fatalities (Canada, 1983–1985); Improvements on a Monthly Index Including Violent Fatalities (Motor Vehicle Fatalities, Homicide, and Suicide), Cigarette Consumption, and Worker-Days Lost in Strikes (Canada, 1972–1986).

409. GELDERLOOS, P.; FRID, M. J.; GODDARD, P. H.; XUE, X.; and LÖLIGER, S. A. Creating world peace through the collective practice of the Maharishi Technology of the Unified Field: improved U.S.-Soviet relations. *Social Science Perspectives Journal* 2(4): 80–94, 1988. Improved International Relations: Increased Friendliness in Statements of U.S. Head of State (1985–1987).

410. DAVIES, J. L., and ALEXANDER, C. N. Alleviating political violence through enhancing coherence in collective consciousness: impact assessment analyses of the Lebanon war. Summary of a paper presented at the 85th Annual Meeting of the American Political Science Association, September 1989. (Refer also to *Dissertation Abstracts International* 49(8): 2381A, 1988.

Improved Quality of National Life: Reduction of Conflict in Lebanon (Increased Cooperation, Reduced Level of Conflict, Reduced War Fatalities, and Reduced War Injuries); Improvement on a Daily Index Composed of All Four of these Variables (1983–1985).

411. ORME-JOHNSON, D. W.; DILLBECK, M. C.; ALEXANDER, C. N.; CHANDLER, H. M.; and CRANSON, R. W. Time series impact assessment analysis of reduced international conflict and terrorism: effects of large assemblies of participants in the Transcendental Meditation and TM-Sidhi program. A summary of a paper presented at the Annual Conference of the American Political Science Association, Atlanta, Georgia, U.S.A., August 1989. Improved International Relations: Reduced Conflict Globally, Reduced Terrorism, and Increase in World Index of Stock Prices, during Three Large Assemblies of Participants in the Transcendental Meditation and TM-Sidhi Program (1983–1985).

PART IV: THEORETICAL AND REVIEW PAPERS

A: Health

412. WALLACE, R. K.; FAGAN, J. B.; and PASCO, D. S. Vedic physiology. *Modern Science and Vedic Science* 2(1): 3–59, 1988.

The fundamental principle of Vedic Physiology is that consciousness is the basis of physiology. This paper outlines and reviews the expression of consciousness at each level of the physiology and reviews research on physiological correlates of higher states of consciousness developed through the Transcendental Meditation and TM-Sidhi program.

413. CHOPRA, D. Bliss and the quantum mechanical body. *Modern Science and Vedic Science* 2(1): 61–74, 1988.

The author outlines how the intelligence of the field of pure consciousness, the unified field of natural law, is expressed through the DNA and other levels of physiological functioning. The scientifically documented effects of the Transcendental Meditation program in balancing physiological functioning from the field of pure consciousness, and promoting subjective well-being, are

discussed.

414. JEDRCZAK, A.; MILLER, D.; and ANTONIOU, M. Transcendental Meditation and health: an overview of experimental research and clinical experience. *Health Promotion* 2(4): 369–376, 1988.

The authors review the large body of research indicating improved individual and collective health through the Transcendental Meditation program and propose that it be applied on a large scale to improve public health and reduce health care costs.

B: Education

415. DILLBECK, S. L., and DILLBECK, M. C. The Maharishi Technology of the Unified Field in education: principles, practice, and research. *Modern Science and Vedic Science* 1(4): 383–431, 1987.

The authors outline the principles and practical techniques of the Maharishi Unified Field Based Integrated System of Education and review research indicating the ability of this system to develop the cognitive, affective, and physiological characteristics of the student that contribute to successful learning.

416. NIDICH, S. I., and NIDICH, R. J. Holistic student development at Maharishi School of the Age of Enlightenment: theory and research. *Modern Science and Vedic Science* 1(4): 383–431, 1987.

The authors review research on the success of Maharishi Schools of the Age of Enlightenment in fostering positive educational outcomes and promoting student development.

417. DOW, M. A. A unified approach to developing intuition in mathematics. This paper is an abridged version of a paper presented to the Eugene Strens Memorial Conference on Intuitive and Recreational Mathematics and Its History, Calgary, July/August 1986. The original paper will appear in the proceedings of this conference, edited by Richard K. Guy, to be published by the Mathematical Association of America in their series MAA Notes.

This paper describes how the development of consciousness through the Transcendental Meditation program fulfills current needs in mathematics education by culturing mathematical intuition.

C: Personality and Development

418. ALEXANDER, C. N.; CRANSON, R. W.; BOYER, R. W.; and ORME-JOHNSON, D. W. Transcendental consciousness: a fourth state of consciousness beyond sleep, dreaming, and waking. This is an abridged version of a chapter which appeared in J. Gackenbach (ed.), *Sleep and Dreams: A Sourcebook*, New York: Garland Publishing, Inc., 282–315, 1986.

The authors review physiological research indicating that transcendental consciousness is a unique fourth major state of consciousness.

419. ALEXANDER, C. N.; DAVIES, J. L.; DIXON, C. A.; DILLBECK, M. C.; OETZEL, R. M.; DRUKER, S. M.; MUEHLMAN, J. M.; and ORME-JOHNSON, D. W. Growth of higher stages of consciousness: Maharishi's Vedic psychology of human development. A summary of a chapter appearing in Charles N. Alexander and Ellen J. Langer (eds.), *Higher Stages of Human Development: Perspectives on Adult Growth*. New York: Oxford University Press (1990). The authors outline how the experience and understanding of higher states of consciousness found in Maharishi's Vedic Psychology fulfills the aspiration of developmental psychology to comprehend the full development of human life.

D: Rehabilitation

420. DILLBECK, M. C., and ABRAMS, A. I. The application of the Transcendental Meditation program to correction. *International Journal of Comparative and Applied Criminal Justice* 11(1): 111–132, 1987.

This paper reviews the research on the application of the Transcendental Meditation program in corrections, including improved mental health and reduced hostility among inmates, and reduced recidivism upon release. The authors propose the implementation of the Transcendental Meditation program in correctional settings on a large scale, in order to promote effective rehabilitation and thereby reduce the substantial financial and human costs to society of incarceration.

421. CLEMENTS, G.; KRENNER, L.; and MÖLK, W. The use of the Transcendental Meditation program in the prevention of drug abuse and in the treatment of drug-addicted persons. *Bulletin on Narcotics* 40(1): 51–56, 1988.

This paper reviews the results of studies indicating that the practice of the Transcendental Meditation program reduces substance abuse.

E: Productivity and Quality of Life

422. ORME-JOHNSON, D. W., and DILLBECK, M. C. Maharishi's program to create world peace: theory and research. *Modern Science and Vedic Science* 1(2): 207–259, 1987.

This paper reviews Maharishi's theoretical principles of collective consciousness and the empirical research demonstrating improved quality of life at the city, state, national, and international levels. The research indicates that an influence of peace is created worldwide through the group practice of the Transcendental Meditation and TM-Sidhi program by at least 7000 individuals—the square root of one percent of the world's population.

F: Maharishi's Vedic Psychology

423. ORME-JOHNSON, D. W. The cosmic psyche: an introduction to Maharishi's Vedic psychology—the fulfillment of modern psychology. *Modern Science and Vedic Science* 2(2): 113–163, 1988.

This paper introduces basic concepts of Maharishi's Vedic Psychology and

compares its major principles to those of twentieth-century psychology. The author concludes that Maharishi's Vedic Psychology fulfills the theoretical and applied goals of psychology.

424. ORME-JOHNSON, D. W. The cosmic psyche as the unified source of creation: verification through scientific principles, direct experience, and scientific research. *Modern Science and Vedic Science* 2(2): 165–221, 1988.

This paper presents the field of pure consciousness, or cosmic psyche, as the source of all mental and physical phenomena. The qualities of this field are verified through several approaches, including direct experience and scientific research.

425. DILLBECK, M. C. The self-interacting dynamics of consciousness as the source of the creative process in nature and in human life: the mechanics of individual intelligence arising from the field of cosmic intelligence—the cosmic psyche. *Modern Science and Vedic Science* 2(3): 245–278, 1988.

This paper outlines how, from the perspective of Maharishi's Vedic Psychology, the field of pure consciousness sequentially gives rise to the diversity of subjective and objective existence. Research is reviewed indicating that all levels of subjective life are enriched from their basis, pure consciousness, through the Transcendental Meditation and TM-Sidhi program.

426. ALEXANDER, C. N., and BOYER, R. W. Seven states of consciousness: unfolding the full potential of the cosmic psyche in individual life through Maharishi's Vedic Psychology. *Modern Science and Vedic Science* 2(4): 325–371, 1989.

This paper outlines the sequential unfoldment of higher states of consciousness brought to light by Maharishi and reviews the scientific research indicating the development of higher states through the Transcendental Meditation and TM-Sidhi program.

427. GELDERLOOS, P., and VAN DEN BERG, W. P. Maharishi's TM-Sidhi Program: Participating in the infinite creativity of nature to enliven the totality of the cosmic psyche in all aspects of life. *Modern Science and Vedic Science* 2(4): 373–412, 1989.

This paper introduces Maharishi's TM-Sidhi program as the technique to enliven the self-interacting dynamics of consciousness in the awareness of the individual, thereby accelerating growth of higher states of consciousness; it also reviews the scientific research on the TM-Sidhi program.

G: Maharishi's Vedic Science and the Foundations of Mathematics and Physics

428. WEINLESS, M. The samhita of sets: Maharishi's Vedic Science and the foundations of mathematics. *Modern Science and Vedic Science* 1(2): 141–204, 1987.

This paper reviews basic concepts of set theory and other foundational perspectives in mathematics in relation to the central principles of Maharishi's Vedic Science.

429. HAGELIN, J. S. Is consciousness the unified field? A field theorist's perspective. *Modern Science and Vedic Science* 1(1): 29–87, 1987.

This paper presents an introduction to unified quantum field theories followed by a discussion of theory, research, and subjective experiences from Maharishi's Vedic Science, in which pure consciousness is described as the unified field of all the laws of nature.

430. HAGELIN, J. S. Restructuring physics from its foundation in light of Maharishi's Vedic Science. *Modern Science and Vedic Science* 3(1): 3–72, 1989.

The author proposes the renaming of the basic forces and particles of nature in light of their basis in the unified field; he outlines how Maharishi's Vedic Science brings fulfillment to this aspiration, and reviews research indicating that the unified field can be directly experienced and utilized by human awareness through the Transcendental Meditation and TM-Sidhi program.

VOLUME 6

Dillbeck, M. C. ed. 2011. *Scientific research on Maharishi's Transcendental Meditation and TM-Sidhi program: Collected papers, vol. 6*. Vlodrop, the Netherlands: Maharishi Vedic University Press.

PART I: PHYSIOLOGY

A: Metabolic, Biochemical, and Cardiovascular Changes

431 EFFECTS ON REGIONAL CEREBRAL BLOOD FLOW OF TRANSCENDENTAL MEDITATION

Jevning, R.; Anand, R.; Biedebach, M.; and Fernando, G. *Physiology & Behavior* 59: 399–402, 1996.

Increased Relative Blood Flow to the Brain in Frontal and Occipital Regions; Decreased Cerebrovascular Resistance Correlated with Increased Relative Cerebral Blood Flow; Increased Galvanic Skin Resistance; Increased Galvanic Skin Resistance Correlated with Increased Relative Cerebral Blood Flow

432 ELEVATED SERUM DEHYDROEPIANDROSTERONE SULFATE LEVELS IN PRACTITIONERS OF THE TRANSCENDENTAL MEDITATION (TM) AND TM-SIDHI PROGRAM

Glaser, J. L.; Brind, J. L.; Vogelmann, J. H.; Eisner, M. J.; Dillbeck, M. C.; Wallace, R. K.; and Orentreich, N. Revised and updated version of paper that appeared in *Journal of Behavioral Medicine* 15: 327–341, 1992.

Indications of Younger Biological Age: Increased DHEA-S Levels in Female and Older Male Practitioners of the Transcendental Meditation and TM-Sidhi Programme

433 BETA-ADRENERGIC RECEPTOR SENSITIVITY IN SUBJECTS PRACTICING TRANSCENDENTAL MEDITATION

Mills, P.J.; Schneider, R.H.; Hill, D.; Walton, K.G.; and Wallace, R.K. *Journal of Psychosomatic Research* 34: 29–33, 1990.

Decreased Sensitivity to Stress Hormones: Reduced Beta-Adrenergic Receptor Sensitivity

434 BETA-ADRENERGIC RECEPTOR SENSITIVITY, AUTONOMIC BALANCE AND SEROTONERGIC ACTIVITY IN PRACTITIONERS OF TRANSCENDENTAL MEDITATION

Hill, D. A. Doctoral dissertation, Maharishi International University, U.S.A. *Dissertation Abstracts International* 50(8): 3330B, 1990.

Decreased Sensitivity to Stress Hormones: Reduced Beta-Adrenergic Receptor Sensitivity; More Stable Balance of the Physiology: Reduced Peripheral Serotonergic Activity Following Practice of the TM-Sidhi Programme; Length of Practice of the Transcendental Meditation Programme Correlated with Change in, and Lower Level of, Peripheral Serotonergic Activity

435 ACUTE IMMUNOREACTIVITY MODIFIED BY PSYCHOSOCIAL FACTORS: TYPE A/B BEHAVIOR, TRANSCENDENTAL MEDITATION AND LYMPHOCYTE TRANSFORMATION

Blasdell, K. S. Abstract of Doctoral Dissertation, Department of Physiological and Biological Sciences, Maharishi International University, U.S.A. *Dissertation Abstracts International* 50(10): 4806B, 1990.

Improved Immune Response to Stress: Faster Recovery of Baseline Immune Functioning Among Type A Subjects

436 INDOLE-MEDIATED ADAPTATION: DOES MELATONIN MEDIATE RESISTANCE TO STRESS IN HUMANS?

Walton, K. G.; Brown, G. M.; Pugh, N.; MacLean, C.; and Gelderloos, P. *Society for Neuroscience Abstracts* 16: 273, 1990.

Lower Melatonin Turnover; Lower Levels of Melatonin Turnover Associated with Lower Stress

437 STRESS AND SEROTONIN TURNOVER IN NORMAL SUBJECTS: RELATION TO SEROTONIN DEFICIENCIES IN MENTAL DISORDERS

Walton, K. G.; Gelderloos, P.; Pugh, N.; Macrae, P.; Goddard, P.; MacLean, C.; and Levitsky, D. Abstract presented at the 5th International Congress of Psychophysiology, Budapest, Hungary, 9-13 July, 1990.

Higher Whole Body Serotonin Turnover; Less Mood Disturbance

438 MECHANISMS RELATING STRESS REDUCTION AND HEALTH: CHANGES IN NEUROENDOCRINE RESPONSES TO LABORATORY STRESS AFTER FOUR MONTHS OF TRANSCENDENTAL MEDITATION

MacLean, C. R. K. Summary of doctoral dissertation, Maharishi International University, U.S.A. *Dissertation Abstracts International* 56(6): 3074B, 1995.

More Adaptive Biochemical Response to Stress: Decreased Baseline Cortisol and Decreased Overall Cortisol During Stress Session; Enhanced Cortisol Response During Stressful Challenge with Rapid Return to Baseline; Decreased TSH Response to Stress; Increased GH Response to Stress; Increased Testosterone Response to Stress. Decreased Plasma Serotonin Relative to Controls for Baseline, Average, and Response to Stress. (In contrast to whole body serotonin metabolism, low plasma serotonin indicates decreased stress and decreased risk of high blood pressure. Low baseline cortisol and enhanced cortisol response to stress is a more stable and adaptive physiological profile.)

439 STRESS REDUCTION AND PREVENTING HYPERTENSION: PRELIMINARY SUPPORT FOR A PSYCHONEUROENDOCRINE MECHANISM

Walton, K. G.; Pugh, N. D. C.; Gelderloos, P.; Macrae, P. *The Journal of Alternative and Complementary Medicine* 1: 263–283, 1995.

Endocrine Pattern Associated with Lower Stress: Lower Excretion of Cortisol and Aldosterone; Higher Excretion of Dehydroepiandrosterone Sulfate and Serotonin Metabolite 5-HIAA; Lower Excretion of Sodium, Calcium, Zinc, and Sodium/Potassium Ratio; Lower Anxiety; Less Mood Disturbance

440 CIRCADIAN RHYTHM ALTERATION BY A MENTAL TECHNIQUE FOR STRESS REDUCTION.

Infante, J. R.; Samaniego, F.; Martinez, M.; Roldan, A.; Hortas, M.; Lopez, E.; Castejon, J.; Poyatos, R.; and Peran, F. *European Journal of Endocrinology* 130, Supplement 2: 122, 1994.

Paper presented at IIIrd European Congress of Endocrinology, Amsterdam, The Netherlands, July 1994.

Biochemical Indications of Decreased Stress: Lower Morning Levels of ACTH and Beta-endorphins

441 RELATIONSHIP BETWEEN SUBJECTIVE BLISS, 5-HYDROXY-3-INDOLEACETIC ACID AND THE COLLECTIVE PRACTICE OF MAHARISHI'S TRANSCENDENTAL MEDITATION AND TM-SIDHI PROGRAM

Löligler, S. A. Summary of Doctoral Dissertation, Maharishi International University, U.S.A. *Dissertation Abstracts International* 52(1): 551B, 1991.

Increased Serotonin Turnover, Increased Subjective Experience of Bliss, and Improved Quality of Night Sleep Correlated with the Size of a Group of TM-Sidhi Programme Participants; Quality of Experiences During the Transcendental Meditation and TM-Sidhi Programme Correlated with the Size of a Group of TM-Sidhi Programme Participants

B: Electrophysiological and Electroencephalographic Changes

442 MOBILIZATION OF THE HIDDEN RESERVES OF THE BRAIN

Lyubimov, N. N. *International Symposium 'Consciousness and Brain'*, Programme Abstracts, Russian Academy of Sciences, Moscow, June 1992, p. 19.

Mobilization of Hidden Reserves of the Brain: Wider Distribution of Cortical Response to Somatosensory Stimuli

443 CEREBRAL CONTROL OF AFFERENT SOMATOSENSORY PROJECTIONS

Orlova, T. V.; Petrenko, E. V.; and Lyubimov, N. N. Presented at the International Symposium of Macro and Microlevels of Brain Organization in the Norm and Pathology, Moscow, 1992. [See also *Byulleten' Eksperimental'noi Biologii i Meditsiny* 116: 229–231, 1993, translated and reprinted in *Bulletin of Experimental Biology and Medicine* 116: 1046–1048, 1993.]
Increased Amplitude of Cortical and Brain Stem Responses to Somatosensory Stimuli

444 P300 UNDER CONDITIONS OF TEMPORAL UNCERTAINTY AND FILTER ATTENUATION: REDUCED LATENCY IN LONG-TERM PRACTITIONERS OF TM
Cranson, R.; Goddard, P.; Orme-Johnson, D.; and Schuster, D. *Psychophysiology* 27 (Suppl. 4A): S23 (Abstract), 1990.

Faster Neurocognitive Processing: Reduced Latency of Auditory Brain Response (P300)

445 TRANSCENDENTAL MEDITATION AS AN INTERVENTION IN THE AGING OF NEUROCOGNITIVE FUNCTION: REDUCED AGE-RELATED DECLINES OF P300 LATENCIES IN ELDERLY PRACTITIONERS

Goddard, P. H. Summary of Doctoral Dissertation, Maharishi International University, U.S.A. *Dissertation Abstracts International*, 53(6): 3189B, 1992.

Preservation of Neurocognitive Processing Speed with Age: Faster Latency of Visual Evoked Potentials (P300)

446 ENDOGENOUS EVOKED POTENTIALS IN SUBJECTS PRACTICING TRANSCENDENTAL MEDITATION

Miskov, S. Unpublished doctoral dissertation, Department of Clinical Neurophysiology of the Clinics for Neurology, Psychiatry, Alcoholism and Other Abuses of the Clinical Hospital „Sestre Milosrdnice“, Zagreb University, Zagreb, Croatia, 1992.

Increased Efficiency and Decreased Age-Related Deterioration of Cognitive Information Processing as Measured by Auditory Event-Related Potentials: Increased Amplitude and Decreased Latency of Brain Potentials (P300) Correlated with Length of Time Practicing Transcendental Meditation; Greater Amplitude of Response Prior to Transcendental Meditation in Comparison to Controls; Shorter Latency of Response Following Transcendental Meditation in Comparison to Before; Shorter Latency of Response Following Transcendental Meditation in Comparison to Controls

447 P300 LATENCY AND AMPLITUDE DURING EYES-CLOSED REST AND TRANSCENDENTAL MEDITATION PRACTICE

Travis, F. and Miskov, S. Summary of a paper presented at the 34th Annual Meeting of the Society for Psychophysiological Research, Atlanta, Georgia, USA, October 1994. (Also refer to *Psychophysiology* 31 (Suppl.): S98 (Abstract), 1994.)

Improved Efficiency of Information Transfer in the Brain: Shorter Latencies of Auditory Evoked Potentials (P300) Following Transcendental Meditation

448 EEG ANALYSIS DURING MEDITATION: A LITERATURE REVIEW AND EXPERIMENTAL STUDY

Splittstoesser, W. Translation of the abstract of the author's doctoral dissertation, entitled „Elektroencephalographische Untersuchung bei der Meditation: Literatur und eigene

Erfahrung', conducted at the Medical Faculty, Johannes Gutenberg University, Mainz, Germany, 1983.

EEG Indications of Restful Alertness: Low or High Amplitude Theta Activity Alternating with Basic Alpha Activity; Isolated Delta Waves with Occasional Overlap by Fast Frequencies; High Amplitude Theta Bursts; Increased Intrahemispheric Coherence in the Alpha and Theta Frequency Bands

449 EYES OPEN AND TM EEG PATTERNS AFTER ONE AND EIGHT YEARS OF TM PRACTICE

Travis, F. Paper presented at the 31st Annual Meeting of the Society for Psychophysiological Research, Chicago, Illinois, USA, October 1991. *Psychophysiology* 28 (Suppl. 3A): S58, 1991 (Abstract).

Higher Eyes-Open Frontal-Central EEG Coherence in Long-Term Participants in the Transcendental Meditation Programme; Increased Frontal Alpha EEG Activity and Periodic Theta-Alpha Bursts During the Practice of Transcendental Meditation for both Short-Term and Long-Term Participants

450 THE DYNAMIC FEATURES OF MODIFIED STATES OF CONSCIOUSNESS DURING TRANSCENDENTAL MEDITATION

Istratov, E. N.; Lyubimov, N. N.; and Orlova, T. V. [See also *Byulleten' Eksperimental'noi Biologii i Meditsiny* 121: 128–130, 1996, translated and reprinted in *Bulletin of Experimental Biology and Medicine* 121: 117–119, 1996.]

EEG Indications of Restful Alertness: Increased Stability of Alpha Activity, Increased Beta Power, and Reduced Slow-Wave Delta and Theta Power During Transcendental Meditation; Persistence of EEG Changes Following Transcendental Meditation

451 COMPARATIVE ANALYSIS OF ALPHA RHYTHM CONTENT IN SPONTANEOUS EEG ACTIVITY AMONG SUBJECTS PRACTISING THE TRANSCENDENTAL MEDITATION TECHNIQUE

Istratov, E. N.; and Lyubimov, S. N. [Brain Research Institute, Russian Academy of Medical Sciences, Moscow]

EEG Indications of Restful Alertness: High Frontal EEG Alpha Power During Transcendental Meditation; Stabilization of Frontal EEG Alpha Power Outside the Practice of Transcendental Meditation

452 EEG RELATIVE ALPHA POWER DURING YOGIC FLYING

Orme-Johnson D. W., and Gelderloos, P. *International Journal of Neuroscience* 38, 427–434, 1988.

Stabilized Restful Alertness: EEG Alpha Activity During Yogic Flying

453 EEG COHERENCE AND POWER DURING YOGIC FLYING

Travis, F. T.; and Orme-Johnson, D. W. *International Journal of Neuroscience* 54: 1–12, 1990. Increased EEG Coherence and Power Immediately before the Body Lifted up during TM-Sidhi Yogic Flying

454 AN EMPIRICAL TEST OF MAHARISHI'S JUNCTION POINT MODEL OF STATES OF CONSCIOUSNESS

Travis, F. T. *Modern Science and Vedic Science* 4, 43–56, 1990.

Indication of Pure Consciousness at the Transition between Waking and Sleeping: EEG Alpha Activity in the Frontal Cortex; Increased Duration of Frontal Alpha Activity During Transcendental Meditation

455 THE JUNCTION POINT MODEL: A FIELD MODEL OF WAKING, SLEEPING, AND DREAMING, RELATING DREAM WITNESSING, THE WAKING/SLEEPING TRANSITION, AND TRANSCENDENTAL MEDITATION IN TERMS OF A COMMON PSYCHOPHYSIOLOGIC STATE

Travis, F. *Dreaming* 4: 91-104, 1994.

Indication of Pure Consciousness at the Transition Between Waking, Sleeping, and Dreaming: Increased EEG Theta/Alpha Power

456 ELECTROPHYSIOLOGICAL CORRELATES OF HIGHER STATES OF CONSCIOUSNESS DURING SLEEP

Mason, L.; Alexander, C. N.; Travis, F. T.; Orme-Johnson, D. W.; Gackenbach, J.; Marsh, G.; Walton, K.; and Rainforth, M. Summary of findings of doctoral dissertation by the first author, Department of Psychology, Maharishi International University, 1995. (Findings also published in *Dissertation Abstracts International* 56(10): 5797B, 1996.)

Experience of Pure Consciousness During Sleep: Increased EEG Theta/Alpha Power During Deep Sleep; Decreased EMG Activity During Deep Sleep; Increased REM Density During REM Sleep; More Frequent Reports of Higher States of Consciousness

C: Health

457 TRANSCENDENTAL MEDITATION, MINDFULNESS, AND LONGEVITY: AN EXPERIMENTAL STUDY WITH THE ELDERLY.

Alexander, C. N.; Langer, E. J.; Newman, R. I.; Chandler, H. M.; and Davies, J. L. *Journal of Personality and Social Psychology* 57: 950–964, 1989.

Benefits for the Elderly Demonstrating Reversal of Ageing: Increased Longevity (Higher Survival Rate); Reduction of Systolic Blood Pressure to More Ideal Levels; Improved Mental Health (Improvements on Nurses' Mental Health Ratings); Increased Cognitive Flexibility (Verbal Task); Increased Learning Ability (Paired Associate Learning Task); Improvements in Self-Reported Measures of Behavioural Flexibility and Ageing (Greater Ability to Cope with Inconvenience, Reduced Feelings of Being Old); Greater Sense of Well-Being (Feeling Better and More Relaxed After Transcendental Meditation; Feeling Better During Transcendental Meditation; High Interest in Transcendental Meditation; and High Ratings of the Value of Transcendental Meditation)

458 A RANDOMIZED CONTROLLED TRIAL OF STRESS REDUCTION ON CARDIOVASCULAR AND ALL-CAUSE MORTALITY IN THE ELDERLY: RESULTS OF 8 YEAR AND 15 YEAR FOLLOW-UPS

Alexander, C.; Barnes, V.; Schneider, R.; Langer, E.; Newman, R.; Chandler, H.; Davies, J.; and Rainforth, M. *Circulation* 93: 629, 1996 (Abstract).

Benefits for the Elderly Demonstrating Reversal of Ageing: Increased Longevity (Higher Survival Rate); Higher Survival Rate Among Those with Cardiovascular Mortality

459 A RANDOMIZED CONTROLLED TRIAL OF STRESS REDUCTION FOR HYPERTENSION IN OLDER AFRICAN AMERICANS

Schneider, R. H.; Staggers, F.; Alexander, C. N.; Sheppard, W.; Rainforth, M.; Kondwani, K.; Smith, S.; and King, C. G. *Hypertension* 26: 820–827, 1995.

More Ideal Levels of Blood Pressure in Hypertensive Subjects: Reduction of High Systolic and Diastolic Blood Pressure

460 TRIAL OF STRESS REDUCTION FOR HYPERTENSION IN OLDER AFRICAN AMERICANS: II. SEX AND RISK SUBGROUP ANALYSIS

Alexander, C. N.; Schneider, R. H.; Staggers, F.; Sheppard, W.; Clayborne, B. M.; Rainforth, M.; Salerno, J.; Kondwani, K.; Smith, S.; Walton, K. G.; and Egan, B. *Hypertension* 28: 228–237, 1996.

More Ideal Levels of Blood Pressure in Hypertensive Subjects: Reduction of High Systolic and Diastolic Blood Pressure Found for both Men and Women, and both High and Low Psychosocial Stress Subjects; Reduction of High Systolic and Diastolic Blood Pressure Irrespective of Score on Five Other Measures of Risk for High Blood Pressure—Obesity, Alcohol Use, Physical Inactivity, Dietary Sodium-Potassium Intake, and Index of All Risk Factors Combined

461 THE EFFECT OF TRANSCENDENTAL MEDITATION ON AMBULATORY BLOOD PRESSURE AND CARDIOVASCULAR REACTIVITY

Wenneberg, S. R.; Schneider, R. H.; MacLean, C. R. K.; Levitsky, D. K.; Walton, K. G.; Mandarino, J.; and Waziri, R. *Psychosomatic Medicine* 56: 168, 1994 (Abstract).

More Ideal Levels of Blood Pressure in Normotensive Subjects: Decreased Mean Diastolic Ambulatory Blood Pressure; Maintenance of Blood Pressure Reactivity

462 COST-EFFECTIVE HYPERTENSION MANAGEMENT: COMPARISON OF DRUG THERAPIES WITH AN ALTERNATIVE PROGRAM

Herron, R. E.; Schneider, R. H.; Mandarino, J. V.; Alexander, C. N.; and Walton, K. G. *The American Journal of Managed Care* 2: 427–437, 1996.

Greater Cost-Effectiveness for Hypertension Management through Transcendental Meditation Programme in Comparison to Drug Therapies

463 USEFULNESS OF THE TRANSCENDENTAL MEDITATION PROGRAM IN THE TREATMENT OF PATIENTS WITH CORONARY ARTERY DISEASE

Zamarra, J.W.; Schneider, R. H.; Besseghini, I.; Robinson, D. K.; and Salerno, J. W. *The American Journal of Cardiology* 77: 867–870, 1996.

Improved Cardiovascular Functioning in Patients with Coronary Artery Disease: Improved Exercise Tolerance (Increased Exercise Duration; Increased Maximal Workload; Greater Delay of Onset of ST Depression; Greater Reduction of Rate-Pressure Product During Exercise)

464 TRANSCENDENTAL MEDITATION AND THREE CASES OF MIGRAINE

Lovell-Smith, H. D. *New Zealand Medical Journal* 98: 443–445, 1985.

Reduced Frequency and Severity of Migraine Headache

465 MONITORING BEHAVIOURAL STRESS CONTROL USING A CRANIOMANDIBULAR INDEX

Shaw, R. M.; and Dettmar, D. M. *Australian Dental Journal* 35: 147–151, 1990.
Reduction of craniomandibular stress

466 EFFECTS OF TRANSCENDENTAL MEDITATION (TM) ON THE MENTAL HEALTH OF INDUSTRIAL WORKERS

Haratani, T., and Hemmi, T. *Japanese Journal of Industrial Health* 32(7): 656, 1990.
Improvements in General Physical and Mental Well-Being in Industrial Workers: Decreased Physical Complaints; Decreased Impulsive Tendency; Reduced Emotional Instability; Decreased Neurotic Tendency; Decreased Anxiety

467 EFFECTS OF TRANSCENDENTAL MEDITATION (TM) ON THE HEALTH BEHAVIOUR OF INDUSTRIAL WORKERS

Haratani, T., and Hemmi, T. *Japanese Journal of Public Health* 37 (10 Suppl.): 729, 1990.
Improved Sleep and Decreased Smoking in Industrial Workers: Decreased Time to Fall Asleep; Reduced Waking During the Night; Decreased Percentage of People Smoking; Fewer Cigarettes Smoked per Day

468 THE ROLE OF THE TRANSCENDENTAL MEDITATION TECHNIQUE IN PROMOTING SMOKING CESSATION: A LONGITUDINAL STUDY

Royer, A. *Alcoholism Treatment Quarterly* 11: 221–239, 1994.
Decreased Cigarette Consumption; Increased Smoking Quit Rate Over a Two-Year Period

469 THE IMPACT OF TRANSCENDENTAL MEDITATION PRACTICE ON MEDICAL EXPENDITURES

Herron, R. E. Summary of Doctoral Dissertation, Department of Management, Maharishi International University, U.S.A. *Dissertation Abstracts International* 53(12):4219A, 1993.
Decreased Payments for Physicians' Services; Greatest Savings for Elderly and High Medical Cost People

470 THE IMPACT OF THE TRANSCENDENTAL MEDITATION PROGRAM ON GOVERNMENT PAYMENTS TO PHYSICIANS IN QUEBEC

Herron, R. E.; Hillis, S. L.; Mandarino, J. V.; Orme-Johnson, D. W.; and Walton, K. G. *American Journal of Health Promotion* 10: 208–216, 1996.
Decreased Payments for Physicians' Services

PART II: PSYCHOLOGY

A: Intelligence, Learning, and Academic Performance

471 TRANSCENDENTAL MEDITATION AND IMPROVED PERFORMANCE ON INTELLIGENCE-RELATED MEASURES: A LONGITUDINAL STUDY

Cranson, R. W.; Orme-Johnson, D.W.; Gackenbach, J.; Dillbeck, M. C.; Jones, C. H.; and Alexander, C. N. *Personality and Individual Differences* 12: 1105–1116, 1991.

Increased General Intelligence; Improved Intelligence Test Performance; Improvement in Reaction Time Measures Correlated with General Intelligence (Faster Choice Reaction Time, Lower Standard Deviation of Choice Reaction Time); Faster Simple Reaction Time

472 VEDIC SCIENCE BASED EDUCATION AND NONVERBAL INTELLIGENCE: A PRELIMINARY LONGITUDINAL STUDY IN CAMBODIA

Fergusson, L. C.; Bonshek, A. J.; and Le Masson, G. *Higher Education Research and Development* 15: 73–82, 1995.

Increased Nonverbal Intelligence

473 TESTING AND DEVELOPING HOLISTIC INTELLIGENCE IN CHINESE CULTURE WITH MAHARISHI'S VEDIC PSYCHOLOGY: THREE EXPERIMENTAL REPLICATIONS USING TRANSCENDENTAL MEDITATION

So Kam-Tim. Doctoral Dissertation, Department of Psychology, Maharishi International University, 1995. *Dissertation Abstracts International* 56(6): 2178A, 1995.

Increased Creativity; Increased Fluid Intelligence; Decreased Inspection Time (Increased Speed of Information Processing); Increased Field Independence; Increased Constructive Thinking; Decreased Anxiety.

474 COGNITIVE AND SELF DEVELOPMENT AMONG URBAN CHILDREN PARTICIPATING IN AN AFTER-SCHOOL EDUCATIONAL PROGRAM

Dillbeck, M. C.; Msemaje, H. I.; Clayborne, B. M.; and Dillbeck, S. L. Paper presented at the 98th Annual Convention of the American Psychological Association, Boston, Massachusetts, USA, August 1990.

Increased Analytical Intelligence; Increased General Intellectual Performance; Improved Self Concept

475 FIELD INDEPENDENCE AND ART ACHIEVEMENT IN MEDITATING AND NONMEDITATING COLLEGE STUDENTS

Fergusson, L. C. *Perceptual and Motor Skills* 75: 1171-1175, 1992.

Higher Level of Field Independence; Field Independence Correlated with Artistic Ability and College Grades

476 FIELD INDEPENDENCE, TRANSCENDENTAL MEDITATION AND ACHIEVEMENT IN COLLEGE ART: A REEXAMINATION

Fergusson, L.C. *Perceptual and Motor Skills* 77:1104-1106, 1993.

Higher Level of Field Independence; Correlation of Field Independence with Artistic Ability, Self-Perceived Artistic Competence, and College Academic Performance

B: Development of Personality

477 TRANSCENDENTAL MEDITATION, SELF-ACTUALIZATION, AND PSYCHOLOGICAL HEALTH: A CONCEPTUAL OVERVIEW AND STATISTICAL META-ANALYSIS

Alexander, C. N.; Rainforth, M. V.; and Gelderloos, P. *Journal of Social Behavior and Personality* 6: 189–248, 1991.

Increased Self-Actualization through Transcendental Meditation in Contrast to Other Procedures as Demonstrated by Meta-Analysis; Improvement in the Measured Components of Self-Actualization: Increased Time Competence (Ability to Live in the Present; Ability to Connect Past, Present, and Future Meaningfully); Increased Inner-Directedness (Independence; Self-Supportiveness); Increased Self-Actualizing Value (Holding Values of Self-Actualizing People); Increased Existentiality (Flexibility in Application of Values); Increased Spontaneity; Increased Self-Regard; Increased Self-Acceptance; Increased Nature of Man Constructive (Sees Man as Essentially Good); Increased Synergy (Sees Opposites of Life as Meaningfully Related); Increased Acceptance of Feelings; Increased Capacity for Intimate Contact (Warm Interpersonal Relationships); Increased Emotional Maturity; Increased Integrative Perspective on Self and World; Increased Resilient Sense of Self

478 TRANSCENDENTAL MEDITATION AND AWAKENING WISDOM: A 10-YEAR LONGITUDINAL STUDY OF SELF DEVELOPMENT

Chandler, H. M. *Dissertation Abstracts International* 51(10): 5048B, 1991.

Growth of Wisdom: Increased Ego Development; Increased Principled Moral Reasoning; Increased Motivation for Warm Interpersonal Relationships

479 TRANSCENDENTAL MEDITATION, ADAPTATION MECHANISMS AND VALUATIONS

Ahlström, H. H. B. *Dissertation Abstracts International* 52(9): 5008B, 1992.

Increased Orientation Towards Positive Values; Increased Psychological Health

480 PERSONALITY AND HEALTH CHARACTERISTICS OF CAMBODIAN UNDERGRADUATES: A CASE FOR STUDENT DEVELOPMENT

Fergusson, L. C.; Bonshek, A. J.; and Boudigues, J.-M. *Journal of Instructional Psychology* 22: 308–319, 1995.

Improved Mental and Physical Health: Decreased State Anxiety; Decreased Trait Anxiety; Decreased Depression; Increased Self-Esteem; Improved General Health

PART III: SOCIOLOGY

A: Rehabilitation

481 TREATING AND PREVENTING ALCOHOL, NICOTINE, AND DRUG ABUSE THROUGH TRANSCENDENTAL MEDITATION: A REVIEW AND STATISTICAL META-ANALYSIS

Alexander, C. N.; Robinson, P.; and Rainforth, M. *Alcoholism Treatment Quarterly* 11: 13–87, 1994.

Results of Integrative Meta-Analysis: Significantly Greater Reduction in Use of Illegal Drugs, Alcohol, and Cigarettes than Programs of Relaxation, Prevention or Treatment;

Abstinence from Illegal Drugs, Alcohol, and Cigarettes Maintained or Increased over Long Term (Relapse Prevention); Improved Psychological Health (Reduced Negative Qualities, Reduced Anxiety, Improved Positive Qualities) Among Those with Substance Abuse Problems in Comparison to Controls

482 CASE STUDY OF THE TRANSCENDENTAL MEDITATION PROGRAMME IN THE NATIONAL PRISON SYSTEM OF SENEGAL.

Boudigues, J.-M. Summary of results published in *Nouveaux horizons en criminologie et en science pénitentiaire: Le Système Intégré Maharishi de Réhabilitation Fondé sur le Champ Unifié dans les prisons Sénégalaises. Séminaire annuel de l'Administration pénitentiaire*. Dakar, Senegal: Maharishi European Research University and Penitentiary Administration of Senegal, 1988; and in a revised version published with the permission of the Penitentiary Administration of Senegal, published in both French and English, with the English title *New Horizons in Criminology and Penitentiary Science: The Maharishi Unified Field Based Integrated System of Rehabilitation in Senegalese Prisons. Annual Seminar of the Penitentiary Administration*. Vlodrop, The Netherlands: Maharishi Vedic University Press, 1990.

Case Study Benefits for Inmates: Sharp Reduction in Negativity, Irritability and Aggressiveness; Improved Relations Between Inmates; Improvement in Health; Marked Decrease in Drug Consumption; Improvement in Sleep; Greater Confidence and Joyfulness. Case Study Benefits for Staff: Greater Self-Confidence; Greater Concern for Inmates; Greater Self-Control; Greater Conscientiousness; Improved health; Decreased Absenteeism and Lateness. Case Study Benefits for Prison: Almost Complete Cessation of Fights Between Inmates; Sharp Decrease in the Number of Medical Consultations; Marked Decrease in Rule Violations by Inmates and Staff; Fewer Escapes. Case Study Benefits for the Nation: Reduced National Recidivism; Increased and More Balanced Rainfall and Increased Harvests

B: Productivity and Quality of Life

483 EFFECTS OF THE TRANSCENDENTAL MEDITATION PROGRAM ON STRESS REDUCTION, HEALTH, AND EMPLOYEE DEVELOPMENT: A PROSPECTIVE STUDY IN TWO OCCUPATIONAL SETTINGS

Alexander, C. N.; Swanson, G. C.; Rainforth, M. V.; Carlisle, T. W.; Todd, C. C.; and Oates, R. M. *Anxiety, Stress and Coping: An International Journal* 6: 245–262, 1993.

Increased Employee Effectiveness; Increased Job Satisfaction; Improved Personal and Work Relationships; Reduced Job Worry and Tension; Reduced Trait Anxiety; Decreased Insomnia and Decreased Fatigue; Reduced Cigarette and Hard Liquor Use; Improved Health; Greater Calm (Lower Skin Conductance) During Task Performance; Improvement on Common Factors Underlying each of these Measures (Occupational Coherence, Physiological Settledness, Satisfaction with Professional and Personal Life)

484 EFFECTS OF THE TRANSCENDENTAL MEDITATION PROGRAM ON PSYCHOLOGICAL, PHYSIOLOGICAL, BEHAVIORAL, AND ORGANIZATIONAL CONSEQUENCES OF STRESS IN MANAGERS AND EXECUTIVES

De Armond, D. L. *Dissertation Abstracts International* 57(6): 4068B, 1996.

Benefits for Managers: Increased Observer-Rated Contribution to the Organization; Improved Mental Health; Increased Vitality; More Healthy Behaviours; Decreased Perceived Stress; Decreased Physical Complaints; Decreased Serum Cholesterol

485 INTRODUCING IN A MILITARY ACADEMY THE TRANSCENDENTAL MEDITATION PROGRAM FOR PREVENTION OF STRESS

Belham, M. F. C. Centre for Personnel Studies, Department of Teaching and Research, Ministry of the Army, Rio de Janeiro, Brazil.

Benefits for Military Cadets: Increased Capacity of Attention; Improved Memory of Details; Increased Effectiveness in Executing Orders; Improved Emotional Performance; Increased Physical Strength (Push-ups); Reduced Resting Heart Rate. Benefits for Officers: Increased Concentration of Attention; Improved Memory of Details; Improved Emotional Performance

486 IMPLEMENTING THE TRANSCENDENTAL MEDITATION PROGRAMME IN THE BRAZILIAN MILITARY POLICE FORCES: A CASE STUDY.

Alvarez Roset, J. L., and Schuler, M. International Meditation Society, Rio de Janeiro, Brazil, in conjunction with Committee of Ayurvedic Medicine, Secretary of Medical Services, Ministry of Social Welfare, Brasilia, Brazil.

Benefits for Police Officers: Decreased Disciplinary Problems; Decreased Doctor Visits; Improved Community Relations. Benefits for Police Officer Trainees: Better Physical Well-Being; Greater Relaxation; Less Worry and Tension; Greater Capacity for Study; Improved Relationships; Greater Respect for Country and Organizations; Enhancement of Military Education; Decreased Disciplinary Problems; Decreased Doctor Visits.

487 RELATIONSHIP BETWEEN PARTICIPATION IN TRANSCENDENTAL MEDITATION AND THE FUNCTIONALITY OF MARRIAGE

Broome, V. J. Master's thesis. University of the Witwatersrand, Johannesburg, South Africa, 1989.

Improved Marital Functionality: Overall Greater Positive Couple Agreement, and Greater Agreement on Marital Satisfaction, Personality Issues, Communication, Conflict Resolution, Financial Management, Children, Family and Friends, Religious Orientation, Marital Cohesion, and Marital Adaptability

The Following Papers in This Section Document the Growth of Coherence in the Collective Consciousness of States, Nations and the World.

488 THE MAHARISHI EFFECT: A MODEL FOR SOCIAL IMPROVEMENT. TIME SERIES ANALYSIS OF A PHASE TRANSITION TO REDUCED CRIME IN MERSEYSIDE METROPOLITAN AREA.

Hatchard, G. D.; Deans, A. J.; Cavanaugh, K. L.; and Orme-Johnson, D. W. *Psychology, Crime, and Law* 2: 165–174, 1996.

Improved Quality of City Life: Decreased Crime Rate (Merseyside, England, 1988–1991)

489 EFFECTS OF GROUP PRACTICE OF THE TRANSCENDENTAL MEDITATION PROGRAM ON PREVENTING VIOLENT CRIME IN

WASHINGTON, DC: RESULTS OF THE NATIONAL DEMONSTRATION PROJECT,
JUNE–JULY 1993

Hagelin, John S.; Rainforth, Maxwell V.; Orme-Johnson, David W.; Cavanaugh, Kenneth L.; Alexander, Charles N.; Shatkin, Susan F.; Davies, John L.; Hughes, Anne O.; and Ross, Emanuel. Summary of a paper to appear in *Social Indicators Research*, 47. [: 153–201, 1999.] Improved Quality of City and National Life as Measured by Decreased Violent Crime Rate in the National Capital (Washington, DC, June and July, 1993)

490 IMPROVED QUALITY OF LIFE IN IOWA THROUGH THE MAHARISHI EFFECT

Reeks, D. L. Abstract of Doctoral Dissertation, Maharishi International University, U.S.A.

Dissertation Abstracts International 51(12): 6155B, 1991.

Improved Quality of State Life: Reduced Unemployment; Decreased Traffic Fatalities; Decreased Crime Rate; Increase of a Quality of Life Index Including All Three Variables (Iowa, 1979–1986)

491 WHAT DOES THE MAHARISHI TECHNOLOGY OF THE UNIFIED FIELD MEAN FOR SOCIAL WORK? A STUDY IN AUSTRALIA

Price, S. Gowing. Unpublished Bachelor of Social Work (Honors) Thesis, University of Sydney, 1986.

Improved Quality of National Life: Reduced Fatal Traffic Accidents; Reduced Unemployment; Increased Value of Stock Market Index (Australia, January 1983)

492 TEST OF A FIELD THEORY OF CONSCIOUSNESS AND SOCIAL CHANGE: TIME SERIES ANALYSIS OF PARTICIPATION IN THE TM-SIDHI PROGRAM AND REDUCTION OF VIOLENT DEATH IN THE U.S.

Dillbeck, M. C. *Social Indicators Research* 22: 399–418, 1990.

Improved Quality of National Life: Improvement on a Weekly Index Including Motor Vehicle Fatalities, Homicide, and Suicide (United States, 1982–1985)

493 TIME SERIES ANALYSIS OF IMPROVED QUALITY OF LIFE IN CANADA: SOCIAL CHANGE, COLLECTIVE CONSCIOUSNESS, AND THE TM-SIDHI PROGRAM

Assimakis, P. D., and Dillbeck, M. C. *Psychological Reports* 76: 1171–1193, 1995.

Improved Quality of National Life: Improvements on a Weekly Index Including Motor Vehicle Fatalities, Homicide, and Suicide (Canada, 1983–1985); Improvements on a Monthly Index Including Motor Vehicle Fatalities, Homicide, Suicide, Cigarette Consumption, and Worker-Days Lost in Strikes (Canada, 1972–1986)

494 IMPACT ASSESSMENT ANALYSIS OF BEHAVIORAL QUALITY OF LIFE INDICES: EFFECTS OF GROUP PRACTICE OF THE TRANSCENDENTAL MEDITATION AND TM-SIDHI PROGRAM

Dillbeck, M. C., and Rainforth, M. V. In *American Statistical Association, 1996 Proceedings of the Social Statistics Section*, pp. 38–43. Alexandria, VA: American Statistical Association, 1996.

Improved Quality of National Life: Improvements Controlling for Economic Changes on a Monthly Index Including Motor Vehicle Fatalities, Homicide, Suicide, Deaths Due to Accidents (other than Motor Vehicle), Notifiable Diseases, Alcohol Consumption, Cigarette Consumption (United States, 1970–1986); Improvements Controlling for Economic Changes on a Monthly Index Including Motor Vehicle Fatalities, Homicide, Suicide, Cigarette Consumption (Canada, 1972–1986)

495 MAHARISHI'S FORMULA FOR A PREVENTION WING IN THE MILITARY—APPLIED AND FOUND SUCCESSFUL IN MOZAMBIQUE: CASE STUDY, 1993–1994.
Dai, T., Lt. Gen. In *Invincible Defense: Creation of a Prevention Wing in the Military of Every Nation, Bringing National Law into Alliance with Natural Law, Conference Proceedings, 11–14 November 1994*, pp. 10–12. Vlodrop, The Netherlands: Maharishi Vedic University.
Case Study of Improved Quality of National Life as Measured by Decreased Crime, Decreased Auto Fatalities, Greater Economic Growth, and Increased Rainfall (Mozambique, 1993)

496 THE EFFECTS OF THE MAHARISHI TECHNOLOGY OF THE UNIFIED FIELD: REPLY TO A METHODOLOGICAL CRITIQUE
Orme-Johnson, D. W.; Alexander, C. N.; and Davies, J. L. *Journal of Conflict Resolution* 34: 756–768, 1990.
Strong Replication of Original Research Methodology: Decreased International Conflict (Israel and Lebanon, August–September 1983)

497 THE DYNAMICS OF US-SOVIET RELATIONS, 1979–1986: EFFECTS OF REDUCING SOCIAL STRESS THROUGH THE TRANSCENDENTAL MEDITATION AND TM-SIDHI PROGRAM.
Gelderloos, P.; Cavanaugh, K. L.; and Davies, J. L. *Proceedings of the American Statistical Association, Social Statistics Section*, pp. 297–302. Alexandria, VA: American Statistical Association, 1990.
Improved USA–USSR Relations: Improved USA Statements and Actions Towards the USSR and Improved USSR Statements and Actions Towards the USA (USA and USSR, 1979–1986).

498 U.S.–SOVIET RELATIONS AND THE MAHARISHI EFFECT: A TIME SERIES ANALYSIS
Cavanaugh, K. L.; and Gelderloos, P. Paper presented at the Annual Meeting of the American Statistical Association, Social Statistics Section, Atlanta, Georgia, August 1991.
Improved USSR–USA Relations: Improved USSR Statements and Actions Towards the USA, Controlling for Behaviour of USA, Seasonality, and Gorbachov Administration (USSR, 1979–1986).

PART IV: THEORETICAL AND REVIEW PAPERS

A: Physiology and Health

499 THE PHYSIOLOGY OF MEDITATION: A REVIEW. A WAKEFUL HYPOMETABOLIC INTEGRATED RESPONSE

Jevning, R.; Wallace, R. K.; and Beidebach, M. *Neuroscience and Biobehavioral Reviews* 16: 415–424, 1992.

The authors propose that practice of the Transcendental Meditation Technique creates an integrated physiological response with peripheral circulatory and metabolic changes subserving increased central nervous activity, and review data from previous research on physiological changes associated with the Transcendental Meditation Programme.

500 THE PHYSIOLOGY OF HIGHER STATES OF CONSCIOUSNESS

Wallace, R. K. Paper presented at the Conference on Higher States of Consciousness: Theoretical and Experimental Perspectives, Chicago, Illinois, August, 1991.

The author reviews current research on the Transcendental Meditation Programme delineating physiological correlates of the development of higher states of consciousness.

501 SERUM HORMONAL CONCENTRATIONS FOLLOWING TRANSCENDENTAL MEDITATION—POTENTIAL ROLE OF GAMMA AMINOBUTYRIC ACID

Elias, A. N.; and Wilson, A. F. *Medical Hypotheses* 44: 287–291, 1995.

The authors review research on the hormonal changes associated with the Transcendental Meditation Technique and attempt to explain these changes in light of the known effects of the neurotransmitter gamma aminobutyric acid (GABA) on hormonal secretion and release, proposing that one of the mechanisms by which the Transcendental Meditation Technique produces relaxation is by enhancing the effects of an endogenous neurotransmitter.

502 TRANSCENDENTAL MEDITATION AS A TECHNIQUE TO INCREASE NEURAL, COGNITIVE, AND BEHAVIORAL PLASTICITY

Orme-Johnson, D. W. Paper presented at the Conference on Restorative Neurophysiology, Irkutsk, Russia, August 1992.

The author reviews research indicating that regular practice of the Transcendental Meditation Technique increases the flexibility of the nervous system and improves general adaptive ability.

503 A NEUROENDOCRINE MECHANISM FOR THE REDUCTION OF DRUG USE AND ADDICTIONS BY TRANSCENDENTAL MEDITATION

Walton, K. G., and Levitsky, D. *Alcoholism Treatment Quarterly* 11: 89–117, 1994.

This paper outlines a model of the neurochemical and endocrine processes associated with chronic stress and their contribution to the development of drug addiction; it also reviews research on the physiological effects of Transcendental Meditation in light of this model, indicating mechanisms of how this technique creates physiological balance and thereby promotes freedom from addictive behaviours.

504 IN SEARCH OF AN OPTIMAL BEHAVIORAL TREATMENT FOR HYPERTENSION: A REVIEW AND FOCUS ON TRANSCENDENTAL MEDITATION

Schneider, R. H.; Alexander, C. N.; and Wallace, R. K. In *Personality, Elevated Blood Pressure, and Essential Hypertension.*, eds. E. H. Johnson, W. D. Gentry, and S. Julius, pp. 291-312. Washington, DC: Hemisphere Publishing Corp., 1992.

This paper reviews the body of research papers on the benefits of the Transcendental Meditation Programme for reduction of hypertension, focussing in detail on two controlled clinical trials showing decreased hypertension among the elderly. The authors examine the Transcendental Meditation Technique in light of requirements for an optimal behavioural treatment of hypertension.

505 THE EFFECTS OF TRANSCENDENTAL MEDITATION COMPARED TO OTHER METHODS OF RELAXATION AND MEDITATION IN REDUCING RISK FACTORS, MORBIDITY, AND MORTALITY

Alexander, C. N.; Robinson, P.; Orme-Johnson, D. W.; Schneider, R. H.; and Walton, K. G. *Homeostasis* 35: 243–263, 1994.

This paper reviews four meta-analyses that show the superiority of Maharishi's Transcendental Meditation Programme compared to other procedures of meditation or relaxation in producing deep rest, decreasing anxiety, increasing self-actualization, and decreasing substance abuse (cigarettes, drugs, alcohol). It also reviews individual well-controlled studies on the beneficial effects of this technique on hypertension, mortality, medical care, and medical expenses, and discusses physiological mechanisms for these effects.

B: Education

506 THE IMPACT OF MAHARISHI'S VEDIC SCIENCE BASED EDUCATION IN HIGHER EDUCATION: THE EXAMPLE OF MAHARISHI INTERNATIONAL UNIVERSITY

Jones, C. H. *Modern Science and Vedic Science* 3: 155–199, 1989.

The author reviews research findings demonstrating holistic development among the students of Maharishi International University in the United States (now Maharishi University of Management), and examines the source of these effects in the unique system of Maharishi's Vedic Science Based Education offered by the University.

507 PREPARING THE STUDENT TO SUCCEED AT CALCULUS

Dow, M. A. *Modern Science and Vedic Science* 6: 172–182, 1995.

Current reforms in teaching of calculus address the object of knowledge and the process of knowing, but leave the development of the student's full mental capacity, the knower, largely to chance. The practice of the Transcendental Meditation Programme develops the knower and thereby gives at least two distinct advantages: a relaxed, alert mind and an intuitive experiential framework for feeling at home with the limit process.

C: Psychology

508 HIGHER STATES OF CONSCIOUSNESS: MAHARISHI MAHESH YOGI'S VEDIC PSYCHOLOGY OF HUMAN DEVELOPMENT

Dillbeck, M. C.; and Alexander, C. N. *The Journal of Mind and Behavior* 10: 307–334, 1989. The authors outline the development of higher states of consciousness from Maharishi's Vedic Psychology in light of relevant research, and propose that human development to these higher states beyond the experience of waking, dreaming and sleeping results from experience of pure consciousness, the Self.

509 ADVANCED HUMAN DEVELOPMENT IN THE VEDIC PSYCHOLOGY OF MAHARISHI MAHESH YOGI: THEORY AND RESEARCH

Alexander, C. N.; Heaton, D. P.; and Chandler, H. M. In *Transcendence and Mature Thought in Adulthood*, eds. M. E. Miller and S. R. Cook-Greuter, pp. 39-70. Lanham, MD: Rowman & Littlefield, 1994.

The authors describe the development of higher states of consciousness as brought to light by Maharishi Mahesh Yogi in his Vedic Psychology, and contrast this to contemporary themes of cognitive or self-development. The authors then review research demonstrating uniquely high scores on self-development among advanced participants in Maharishi's Transcendental Meditation and TM-Sidhi Programme

510 MAHARISHI'S VEDIC PSYCHOLOGY: ALLEVIATE SUFFERING BY ENLIVENING BLISS—RECONNECT THE PARTIAL VALUES OF LIFE WITH THE WHOLENESS OF LIFE

Gelderloos, P. In *Psychotherapy, Meditation & Health*, ed. M. G. T. Kwee, pp. 215–238. London: East-West Publications, 1990.

This paper analyzes how Maharishi's Vedic Psychology fulfils the practical goals of psychology and reviews scientific research indicating that Maharishi's Transcendental Meditation and TM-Sidhi Programme improves the physical and mental health of the individual and creates an influence of harmony in society.

511 THE BHAGAVAD-GITA: A CASE STUDY IN MAHARISHI'S VEDIC PSYCHOLOGY

Dillbeck, M. C. *Modern Science and Vedic Science* 4(2), 97–134, 1991. The paper analyzes the *Bhagavad-Gita* as a model case study from the Vedic Literature, providing knowledge of the full range of human development to higher states of consciousness; this knowledge of development of consciousness is systematically brought to light in Maharishi's Vedic Psychology and supported by research on the Transcendental Meditation and TM-Sidhi Programme.

512 THE CONCEPT OF SELF IN THE BHAGAVAD-GITA AND IN THE VEDIC PSYCHOLOGY OF MAHARISHI MAHESH YOGI: A FURTHER NOTE ON TESTABILITY

Dillbeck, M. C. *Psychologia—An International Journal of Psychology in the Orient* 33: 50–56, 1990.

This paper points out that the subjective experience of Transcendental Consciousness (‘Self’) described in the *Bhagavad-Gita* has effects that have been measured through extensive scientific research on Maharishi's Transcendental Meditation Programme.

513 TRANSCENDENTAL MEDITATION

Alexander, C. N. In *Encyclopedia of Psychology* (2nd edition), ed. R. J. Corsini, pp. 545–546. New York: Wiley Interscience, 1994.

This paper presents an introduction to the Transcendental Meditation Programme and major scientific research findings on its effects for the individual and society.

D: Rehabilitation

514 EFFECTIVENESS OF THE TRANSCENDENTAL MEDITATION PROGRAM IN PREVENTING AND TREATING SUBSTANCE MISUSE: A REVIEW

Gelderloos, P.; Walton, K. G.; Orme-Johnson, D. W.; and Alexander, C. N. *The International Journal of the Addictions* 26: 293–325, 1991.

The authors review research studies demonstrating decreased substance abuse among the general population, participants in treatment programs, and prison inmates through practice of the Transcendental Meditation Programme.

515 THE TRANSCENDENTAL MEDITATION PROGRAM FOR PREVENTION OF ALCOHOL AND DRUG ABUSE AMONG JUVENILES AT RISK

Dillbeck, M.C. Parts of this paper were included in Sharma, H.M.; Dillbeck, M.C.; and Dillbeck, S.L. Implementation of the Transcendental Meditation program and Maharishi Ayur-Veda to prevent alcohol and drug abuse among juveniles at risk. *Alcoholism Treatment Quarterly* 11: 429–457, 1994.

The author reviews research indicating that the Transcendental Meditation Programme reduces risk factors for substance abuse and increases factors that protect against abuse; the paper also reviews research demonstrating effective reduction of alcohol and drug use through this program.

516 TRANSCENDENTAL MEDITATION AS AN EPIDEMIOLOGICAL APPROACH TO DRUG AND ALCOHOL ABUSE: THEORY, RESEARCH, AND FINANCIAL IMPACT EVALUATION

Orme-Johnson, D. W. *Alcoholism Treatment Quarterly* 11: 119–168, 1994.

This paper focuses on the contributions of the Transcendental Meditation Programme to resolving the broad social problems associated with addictions. The author proposes that drug and alcohol abuse are symptoms of a general stress-addiction-crime epidemic in society. The paper then reviews sociological research findings showing how societal disorder—experienced as crime, drug abuse, political conflict, and economic instability—can be substantially and cost-effectively reduced through the group practice of the Transcendental Meditation and TM-Sidhi Programme.

517 THE THEORETICAL FOUNDATIONS AND PRACTICAL VALIDATION OF MAHARISHI'S INTEGRATED SYSTEM OF REHABILITATION

King, M. S.

This paper outlines the theoretical foundations of Maharishi's Integrated System of Rehabilitation. It shows how this system of rehabilitation is validated by extensive scientific research and by personal experience of offenders instructed in the Transcendental Meditation Programme. The author concludes that this system of rehabilitation offers a solution to key problems within the field of rehabilitation, including recidivism, the method of rehabilitation, and measurement of rehabilitation.

E. Business

518 THE INTELLIGENCE MODEL OF ORGANIZATIONAL EFFECTIVENESS: ITS IMPLICATIONS FOR ENHANCED PRODUCTIVITY

Herron, R. E.; and Graff, W. W. *Proceedings of the Association of Management*: 286–290, 1990. The authors review research on the importance of intelligence in job performance, and on the effect of the Transcendental Meditation Programme in increasing intelligence, in improving job performance and related variables in the business setting, and in improving the quality of the collective consciousness of the whole society.

519 TRANSFORMING HUMAN RESOURCES FOR THE TWENTY-FIRST CENTURY

Schmidt-Wilk, J.; and Heaton, D. P. *Midwest Academy of Management Conference Proceedings*: 85–90, 1990.

The authors review research indicating that the Transcendental Meditation Programme simultaneously promotes creativity, health, and teamwork—three human resource qualities that are vital for success in the future business environment.

520 DEVELOPING CONSCIOUSNESS IN ORGANIZATIONS: THE TRANSCENDENTAL MEDITATION PROGRAM IN BUSINESS.

Schmidt-Wilk, J.; Alexander, C. N.; and Swanson, G. C. *Journal of Business and Psychology* 10: 429–444, 1996.

A review of research and case studies on the application of Maharishi's Transcendental Meditation Programme in the workplace indicates improved employee health, increased job and life satisfaction, improved job performance and productivity, and improved organizational performance and climate. These results are discussed in terms of the development of consciousness of the individual and the organization.

F. Quality of Life

521 IMPROVING THE NATIONAL ECONOMY THROUGH ALLIANCE WITH NATURE'S GOVERNMENT: EFFECTS OF THE GROUP PRACTICE OF MAHARISHI'S TRANSCENDENTAL MEDITATION AND TM-SIDHI PROGRAM

Cavanaugh, K. L.; King, K. D.; and Titus, B. D. *Modern Science Vedic Science* 4: 3–41, 1990.

This paper reviews a series of studies that document improvements in the national economies of the U.S. and Canada, as indicated by an index of decreased inflation and decreased unemployment, when the number of participants in Maharishi's Transcendental Meditation and TM-Sidhi Programme exceeded the square root of one per cent of their national populations.

522 PEACEFUL BODY, PEACEFUL MIND, PEACEFUL WORLD

Alexander, C. N. *Modern Science and Vedic Science* 5: 150–164, 1992.

This paper reviews scientific research studies demonstrating the development of peace within the individual through Maharishi's Transcendental Meditation and TM-Sidhi

Programme, and explains how this development forms the basis of creating peace in the world.

523 THEORY AND RESEARCH ON CONFLICT RESOLUTION THROUGH THE MAHARISHI EFFECT

Orme-Johnson, D. W. *Modern Science and Vedic Science 5*: 76–98, 1992.

This paper presents the *Maharishi Effect* as the practical basis for creating world peace, and describes scientific research demonstrating the effectiveness of the *Maharishi Effect* in generating coherence and peace on all levels of society.

524 ACHIEVING WORLD PEACE THROUGH A NEW SCIENCE AND TECHNOLOGY

Hagelin, J. S. *Modern Science and Vedic Science 5*: 48–75, 1992.

This paper examines scientific evidence for a new technology of world peace based on the Unified Field of Natural Law and considers its practical utilization through a field effect of consciousness generated by large groups of experts practicing the Transcendental Meditation and TM-Sidhi Programme.

VOLUME 7

Dillbeck, M.C., Barnes, V.A., Schneider, R.H., Travis, F.T., & Walton K.G. (Eds.) (2013). *Scientific Research on the Transcendental Meditation and TM-Sidhi Programme: Collected Papers*, vol. 7. Vlodrop, The Netherlands, Maharishi Vedic University Press.

PART I: PHYSIOLOGY

A: Metabolic, Biochemical, and Cardiovascular Changes

525 Autonomic patterns during respiratory suspensions: possible markers of Transcendental Consciousness.

Travis, F.; and Wallace, R. K. *Psychophysiology* 34: 39–46, 1997.

Findings: Experiences of Transcendental Consciousness Associated with (1) Respiratory Suspension or Marked Reduction in Breath Volume, (2) Skin Conductance Responses, and (3) Heart Rate Deceleration. This Pattern of Autonomic Variables Not Found During Periods of Forced Breath Holding.

526 Acute effects of Transcendental Meditation on hemodynamic functioning in middle-aged adults.

Barnes, V. A.; Treiber, F. A.; Turner, J. R.; Davis, H.; and Strong, W. B. *Psychosomatic Medicine* 61: 525–531, 1999.

Findings: Decreased Systolic Blood Pressure; Decreased Peripheral Vasoconstriction; Effects Found during Transcendental Meditation and Also Outside the Practice

527 Lower lipid peroxide levels in practitioners of the Transcendental Meditation program.

Schneider, R. H.; Nidich, S. I.; Salerno, J. W.; Sharma, H. M.; Robinson, C. E.; Nidich, R. J.; and Alexander, C. N. *Psychosomatic Medicine* 60: 38–41, 1998.

Finding: Lower Level of Plasma Lipid Peroxides

528 Effects of the Transcendental Meditation program on adaptive mechanisms: changes in hormone levels and responses to stress after 4 months of practice.

MacLean, C. R. K.; Walton, K. G.; Wenneberg, S. R.; Levitsky, D. K.; Mandarino, J. P.; Waziri, R.; Hillis, S. L.; and Schneider, R. H. *Psychoneuroendocrinology* 22: 277–295, 1997.

Findings: More Adaptive Pattern of Cortisol in Relation to Stress: Decreased Basal Cortisol and Average Cortisol, Increased Cortisol Responsiveness to Stressors; Response to Stressors Different than Controls for Other Hormones (Growth Hormone and Thyroid Stimulating Hormone).

529 ACTH and β -endorphin in Transcendental Meditation.

Infante, J. R.; Peran, F.; Martinez, M.; Roldan, A.; Poyatos, R.; Ruiz, C.; Samaniego, F.; and Garrido, F. *Physiology & Behavior* 64: 311–315, 1998.

Findings: Biochemical Indications of Decreased Stress (Lower Morning Levels of ACTH and Beta-endorphin)

530 Catecholamine levels in practitioners of the Transcendental Meditation technique.

Infante, Jose Rafael; Torres-Avisbal, Miguel; Pinel, Pilar; Vallejo, Juan Antonio; Peran, Fernando; Gonzalez, Francisco; Contreras, Pablo; Pacheco, Carmen; Roldan, Ana; and Latrea, Jose Maria. *Physiology & Behavior* 72: 141–146, 2001.

Findings: Biochemical Indications of Decreased Stress (Lower Morning Levels of Norepinephrine and Epinephrine, Lower Evening Level of Norepinephrine)

531 Lowering cortisol and CVD risk in postmenopausal women: A pilot study using the Transcendental Meditation program.

Walton, K.G.; Fields, J.Z.; Levitsky, D.K.; Harris, D.A.; Pugh, N.D.; and Schneider, R.H. *Annals of the New York Academy of Sciences* 1032: 211–215, 2004.

Findings: Lower Cortisol Response to Stress; Lower Levels of Cardiovascular Risk Factors Correlated with Length of Practice of Transcendental Meditation

B: Electrophysiological and Electroencephalographic Changes

532 Autonomic and EEG patterns during eyes-closed rest and Transcendental Meditation (TM) practice: The basis for a neural model of TM practice.

Travis, F. T.; and Wallace, R. K. *Consciousness and Cognition* 8: 302–318, 1999.

Findings: Lower Respiration Rate; Lower Skin Conductance Level; Higher Respiratory Sinus Arrhythmia; Higher Alpha Frontal EEG Coherence; Higher Alpha Anterior-Posterior EEG Coherence

533 Changes in electroencephalogram and evoked potentials during application of the specific form of physiological training (meditation).

Lyubimov, Nicolai N. *Human Physiology* 25: 171–180, 1999.

[The same findings are presented in Russian, in the context of neuroanatomical considerations from animal research, in Lyubimov, N.N.; Orlova, T.V.; and Lyubimov, S.N. Cerebral control of somatosensory and auditory afferent projections towards the brain cortex in humans and animals. *Uspekhi Fiziologicheskikh Nauk* 29(3): 3–20, 1998. See also the abstract Lyubimov, N. N.; and Lyubimov, S. N. Resources of the brain and their mobilization. *Pflugers Archiv European J. Physiol.* Suppl 430(4): 38 (R18), 1995.]

Findings: Mobilization of Hidden Reserves of the Brain: Wider Distribution of Cortical Response to Somatosensory Stimuli. Increased EEG Spectral Power in Theta, Alpha, and Beta Frequencies.

534 Theta bursts and rhythmical theta trains in the Transcendental Meditation technique and TM-Sidhi program: A qualitative and quantitative analysis of EEG theta activity.

Murphy, Marcia B. *Dissertation Abstracts International* 61(1-B): 125, 2000.

Findings: EEG of Restful Alertness: Increased EEG Theta Bursts, Increased EEG Rhythmical Theta Trains

535 Autonomic and EEG patterns distinguish transcending from other experiences during Transcendental Meditation practice.

Travis, F. *International Journal of Psychophysiology* 42: 1–9, 2001.

Findings: Lower Respiration Rate, Higher Respiratory Sinus Arrhythmia Amplitudes, Higher EEG Alpha Amplitude, and Higher EEG Alpha Coherence during Experiences of Transcending in Transcendental Meditation

536 CNV Rebound and distraction effects before and after a TM session.

Travis, Frederick. *Psychophysiology* 34: S89, 1997. [abstract]

Finding: Decreased Distraction Effects in EEG

537 Cortical plasticity, contingent negative variation, and transcendent experiences during practice of the Transcendental Meditation technique.

Travis, Frederick; Tecce, Joseph J.; and Guttman, Julia. *Biological Psychology* 55: 41–55, 2000.

Findings: Higher Cortical Preparatory Response (Heightened Late CNV Amplitude during Simple Reaction Time Trials) and More Effective Executive Functioning (Diminished CNV Distraction Effects) Associated with Stabilized Experience of Transcendental Consciousness

538 Development along an Integration Scale: Longitudinal transformation in brain dynamics with regular Transcendental Meditation practice.

Travis, F. *Psychophysiology* 39: S81, 2002. [abstract]

Finding: Longitudinal Improvement on a Brain Integration Scale Comprising Global Alpha EEG Power, Frontal EEG Coherence, and Contingent Negative Variation Responses

539 Electrophysiological correlates of higher states of consciousness during sleep in long-term practitioners of the Transcendental Meditation program.

Mason, L. I.; Alexander, C. N.; Travis, F. T.; Marsh, G.; Orme-Johnson, D. W.; Gackenbach, J.; Mason, D. C.; Rainforth, M.; and Walton, K. G. *Sleep* 20: 102–110, 1997.

Findings: Experience of Pure Consciousness During Sleep Associated with the Following: Theta/Alpha EEG Activity Together with Delta Activity During Deep Sleep; Increased EEG Theta/Alpha Power During Deep Sleep; Decreased EMG Activity During Deep Sleep; Increased REM Density During REM Sleep; More Frequent Reports of Higher States of Consciousness.

540 Patterns of EEG coherence, power, and contingent negative variation characterize the integration of transcendental and waking states. Travis, Fred; Tecce, Joe; Arenander, Alarik; and Wallace, R. Keith. *Biological Psychology* 61: 293–319, 2002.

Findings: Improved Brain Functioning among Those Reporting Stabilized Transcendental Consciousness: Enhanced Attention Capability (During Simple Reaction Time Task); More Efficient Attention Deployment (During Choice Reaction Time Task); Higher Broadband Frontal EEG Coherence During Choice Reaction Time Task; Higher Theta-Alpha Frontal-Central-Parietal EEG Amplitude During Choice Reaction Time Task. Improved Brain Functioning among Those Practicing Transcendental Meditation: Higher Theta-Alpha Frontal EEG Coherence During Choice Reaction Time Task; Higher Broadband Frontal EEG Coherence During Transcendental Meditation. Sequential Improvement for Those Practicing Transcendental Meditation and for Those Reporting Stabilized Transcendental Consciousness on a Brain Integration Scale Derived from Multiple Measurements (Broadband Frontal EEG Coherence and Higher Theta-Alpha Frontal-Central-Parietal EEG Amplitude During Choice Reaction Time Task, More Efficient Attention Deployment During Choice Reaction Time Task); Results on Each of These Measures Correlated with Reports of Transcendental Experiences.

C: Health

541 A randomized controlled trial of stress reduction in African Americans treated for hypertension for over one year.

Schneider, R.H.; Alexander C.N.; Staggers, F.; Orme-Johnson, D.W.; Rainforth, M.; Salerno, J.W.; Sheppard, W.; Castillo-Richmond, A.; Barnes, V.A.; Nidich, S.I. *American Journal of Hypertension* 18: 88–98, 2005.

Findings: Decreased Diastolic Blood Pressure; Decreased Use of Hypertensive Medication

542 Impact of Transcendental Meditation on cardiovascular function at rest and during acute stress in adolescents with high normal blood pressure.

Barnes, V. A.; Treiber, F. A.; and Davis, H. *Journal of Psychosomatic Research* 51: 597–605, 2001.

Findings: Decreased Resting Systolic Blood Pressure; Calmer Response to Stress, as Measured by Systolic Blood Pressure, Heart Rate, and Cardiac Output Reactivity

543 Impact of Transcendental Meditation on ambulatory blood pressure in African-American adolescents.

Barnes, V.A.; Treiber, F.A.; Johnson, M.H. *American Journal of Hypertension* 17: 366–369, 2004.

Findings: Reduction of High Blood Pressure During Daily Activity

544 A controlled study of the effects of the Transcendental Meditation program on cardiovascular reactivity and ambulatory blood pressure.

Wenneberg, S. R.; Schneider, R. H.; Walton, K. G.; Maclean C. R.; Levitsky, D. K.; Salerno, J. W.; Wallace, R. K.; Mandarino, J. V.; Rainforth, M. V.; and Waziri, R. *International Journal of Neuroscience* 89: 15–28, 1997.

Finding: Reduction in Ambulatory Diastolic Blood Pressure

545 Erythrocyte sedimentation rate and Transcendental Meditation.

Smith, D. E.; Dillbeck, M. C.; and Sharma, H. M. *Alternative Therapies in Clinical Practice* 4: 35–37, 1997.

Finding: Lower Values of Erythrocyte Sedimentation Rate; More Frequent Occurrence of Zero Erythrocyte Sedimentation Rate

546 Effects of stress reduction on carotid atherosclerosis in hypertensive African Americans.

Castillo-Richmond, A.; Schneider, R. H.; Alexander, C. N.; Cook, R.; Myers, H.; Nidich, S.; Haney, C.; Rainforth, M.; and Salerno, J. *Stroke* 31: 568–573, 2000.

Finding: Reduced Carotid Atherosclerosis

547 Effects of Transcendental Meditation on symptoms and electrocardiographic changes in patients with cardiac syndrome X.

Cunningham, Charles; Brown, Sue; and Kaski, Juan Carlos. *American Journal of Cardiology* 85: 653–655, 2000.

Finding: Reduced Frequency of Angina Episodes; Improved Response to Exercise: Increased Time to ST Depression, Decreased Maximum ST-Segment Depression; Improved Quality of Life; Quality of Life Improvement Positively Correlated with Regularity of Practice of Transcendental Meditation.

548 Impact of the Transcendental Meditation program on mortality in older African Americans with hypertension—Eight-year follow-up.

Barnes, Vernon A.; Schneider, Robert H.; Alexander, Charles N.; Rainforth, Maxwell; Salerno, John; and Staggers, Frank. *Journal of Social Behavior and Personality* 17: 201–216, 2005.

Findings: Reduced Mortality Due to Cardiovascular Disease

549 Long-term effects of stress reduction on mortality in persons > or = 55 years of age with systemic hypertension.

Schneider, R.H.; Alexander, C.N.; Staggers, F.; Rainforth, M.; Salerno, J.W.; Hartz, A.; Arndt, S.; Barnes, V.A.; and Nidich, S.I. *American Journal of Cardiology* 95: 1060–1064, 2005.

Findings: Reduced Mortality Due to All Causes; Decreased Cardiovascular Mortality Rate

550 An innovative approach to reducing medical care utilization and expenditures.

Orme-Johnson, D. W.; and Herron, R. E. *The American Journal of Managed Care* 3: 135–144, 1997.

Findings: Fewer Hospital Patient Days than Norms; Fewer Outpatient Visits than Norms; Lower Total Medical Expenses than Norms; Lower Hospital Admission Rates Across Disease Category Compared to Norms and to Controls

551 The impact of the Transcendental Meditation program on government payments to physicians in Quebec: An update.

Herron, R. E.; and Hillis, S. L. *American Journal of Health Promotion* 14: 284–291, 2000.

Finding: Longitudinal Reduction in Government Medical Expenses for Physician Treatments

PART II: PSYCHOLOGY

A: Intelligence, Learning, and Academic Performance

552 Three randomized experiments on the longitudinal effects of the Transcendental Meditation technique on cognition.

So, K.-T.; and Orme-Johnson, D. W. *Intelligence* 29: 419–440, 2001.

Findings: Increased Creativity; Increased Field Independence; Increased Practical Intelligence; Increased Fluid (General) Intelligence; Increased Speed of Information Processing; Decreased Trait Anxiety; Decreased State Anxiety; Results of Transcendental Meditation Technique Superior to Control Procedures of Napping, Contemplation Meditation, or No Treatment

553 Accelerating cognitive and self-development: Longitudinal studies with preschool and elementary school children.

Dixon, Carol A.; Dillbeck, Michael C.; Travis, Frederick; Msemaje, Horus I.; Clayborne, B. Mawiyah; Dillbeck, Susan L.; Alexander, Charles N. *Journal of Social Behavior and Personality* 17: 65–91, 2005.

Findings: Increased General Intellectual Performance; Increased Psychological Differentiation; Increased Analytical Ability; Enhanced Self-Concept

554 Transcendental Meditation (TM) and emotional functioning in fifth grade students.

Benn, R. *Focus on Alternative and Complementary Therapies* 8: 480–481, 2003.

Abstract of a paper presented at the 10th Annual Symposium on Complementary Health Care, 21-22 November 2003, London, UK.

Findings: Increased Positive Affect; Reduced Negative Affect; Increased Positive Mood; Increased Adaptability

555 Impact of stress reduction on negative school behavior in adolescents.

Barnes, Vernon A.; Bauza, Lynnette B.; and Treiber, Frank A. *Health and Quality of Life Outcomes* 1: 10, 2003.

Findings: Reduction of Absentee Periods; Decrease in School Rule Infractions; Reduction in Suspension Days

556 Meditation and attention regulation.

Jhansi Rani, N.; and Krishna Rao, P.V. Summary of a paper published in *Journal of Indian Psychology* 14: 26–30, 1996.

Findings: Greater Ability to Regulate Attention

557 Effects of meditation on attention processes.

Jhansi Rani, N.; and Krishna Rao, P.V. Summary of a paper published in *Journal of Indian Psychology* 18: 52–60, 2000.

Findings: Greater Field Independence; Greater Cognitive Flexibility; Greater Ability to Regulate Attention following Transcendental Meditation

558 Temporal effects of meditation on cognitive style.

Sridevi, K.; and Krishna Rao, P.V. Summary of a paper published in *Journal of Indian Psychology* 21: 38–15, 2003.

Findings: Greater Field Independence; Greater Spatial Reasoning Ability; Greater Right Hemispheric Orientation

559 What does meditation change? Measurement of cognitive styles. Sakairi, Yosuke. Summary of a paper published in *The embodiment of mind: Eastern and western perspectives*, M.M.

DelMonte & Y. Haruki (Eds.); Delft: Eburon Publishers, 1998, pp. 57–66. Findings: Greater Positivity in Selective Word Recognition; Lower Anxiety; Longitudinally Increased Positivity in Selective Word Recognition; Longitudinally Decreased Anxiety; Increased Positivity in Selective Word Recognition Correlated with Decreased Anxiety

560 Development of a scale for measuring cognitive styles modified by meditation. Sakairi, Yosuke. Summary of a paper published in *The relevance of the wisdom traditions in contemporary society: The challenge to psychology*, Blows, M.; Srinivasan S.; Blows, J.; Bankart, P.; DelMonte, M.; and Haruki, Y. (Eds.); Delft: Eburon Publishers, 2004, pp. 199–208.

Findings: Greater Flexibility; Greater Receptiveness (Objectiveness and Positive Orientation); Greater Happy-Go-Lucky Attribution (Good Fortune); Longitudinally Increased Flexibility; Longitudinally Increased Receptiveness (Objectiveness and Positive Orientation)

561 Effect of the Transcendental Meditation program on intellectual development in community-dwelling older adults.

Nidich, Sanford I.; Schneider, Robert H.; Nidich, Randi J.; Foster, Gloria; Sharma, Hari; Salerno, John; Goodman, Rachel; and Alexander, Charles N. *Journal of Social Behavior and Personality* 17: 217–226, 2005.

Findings: Higher Reasoning Ability; Higher Verbal Intelligence; Better Long-Term Memory; Faster Speed of Processing

B: Development of Personality

562 The Transcendental Meditation program and postconventional self-development: A 10-year longitudinal study.

Chandler, Howard M.; Alexander, Charles N.; Heaton, Dennis P. *Journal of Social Behavior and Personality* 17: 93–121, 2005.

Findings: Increased Ego Development; Increased Principled Moral Reasoning; Increased Motivation for Warm Interpersonal Relationships

563 The search for bliss: A model of emotional development based on Maharishi's Vedic Psychology.

Guttman, Julia Kim. *Dissertation Abstracts International* 57(6B): 4055, 1996.

Findings: Higher Level of Emotional Development; Higher Level of Ego Development

564 Temporal effects of meditation on personality.

Sridevi, K.; and Krishna Rao, P.V. Summary of a paper published in *Psychological Studies* 43: 95–105, 1998.

Findings: Greater Seriousness and Prudence; Greater Conscientiousness; Greater Trust and Acceptance; Greater Practical Orientation; Greater Diplomacy and Astuteness; Greater Confidence; Greater Organization and Self-Discipline; More Relaxed and Patient

565 Psychological and physiological characteristics of a proposed object-referral/self-referral continuum of self-awareness.

Travis, Frederick; Arenander, Alarik; and DuBois, David. *Consciousness and Cognition* 13: 401–420, 2004.

Findings: Stabilized Pure Consciousness Associated with the Following: Subjective Description of Self as Underlying Thought, Feeling and Action (Self-Referral Mode); Objective Measurement of Personality Variables Indicating Higher Scores on a Consciousness Factor; Greater Inner Orientation; Higher Moral Reasoning; Lower State Anxiety; Lower Trait Anxiety; Greater Extraversion; Greater Agreeableness; Greater Emotional Stability; Greater Openness to Experience

PART III: SOCIOLOGY

A: Rehabilitation

566 First prison study using the Transcendental Meditation program: La Tuna Federal Penitentiary, 1971.

Orme-Johnson, David W.; and Moore, Richard M. *Journal of Offender Rehabilitation* 36: 89–95, 2003.

Findings: Rehabilitation of Prisoners: Increased Stability of the Autonomic Nervous System; Decreased Rigid or Obsessive Thoughts and Compulsive Behaviour (Decreased Psychasthenia); Decreased Social Introversion

567 Consciousness-Based Rehabilitation of inmates in the Netherlands Antilles: Psychosocial and cognitive changes.

Hawkins, Mark A.; Alexander, Charles N.; Travis, Frederick T.; Camelia, Carl R. T.; Walton, Kenneth G.; Durchholz, Christian F.; and Rainforth, Maxwell V. *Journal of Offender Rehabilitation*, 36: 205–228, 2003.

Findings: Rehabilitation of Prisoners: Improved Intellectual Functioning; Decreased Cognitive Distortion

568 Walpole study of the Transcendental Meditation program in maximum security prisoners I: Cross-sectional differences in development and psychopathology.

Alexander, Charles N.; Walton, Kenneth G.; and Goodman, Rachel S. *Journal of Offender Rehabilitation* 36: 97–125, 2003.

Findings: Rehabilitation of Prisoners: Lower Psychopathology; Higher Personal Development; Higher Consciousness; Greater Self-Development; Greater Capacity for Warm Interpersonal Relationships; Greater Engagement in Private Avocational Businesses within the Institution; Lower Anxiety; Less Psychopathic Deviation; Less Aggression; Less Tension; Less Depression; Less Introversion; More Frequent Experiences of Higher Consciousness.

569 Walpole study of the Transcendental Meditation program in maximum security prisoners II: Longitudinal study of development and psychopathology.

Alexander, Charles N.; and Orme-Johnson, David W. *Journal of Offender Rehabilitation* 36: 127–160, 2003.

Findings: Rehabilitation of Prisoners: Increased Ego-Development; Decreased Aggression; Reduced Schizophrenic Symptoms; Increased Development of Consciousness

570 Walpole study of the Transcendental Meditation program in maximum security prisoners III: Reduced recidivism.

Alexander, Charles N.; Rainforth, Maxwell V.; Frank, Paul R.; Grant, James D.; von Stade Christopher; and Walton, Kenneth G. *Journal of Offender Rehabilitation* 36: 161–180, 2003.

Findings: Rehabilitation of Prisoners: Decreased Recidivism; Decreased Recidivism in Comparison to Other Prison Treatment Programs

571 Effects of the Transcendental Meditation program on recidivism among former inmates of Folsom Prison: Survival analysis of 15-year follow-up data.

Rainforth, Maxwell V.; Alexander, Charles N.; and Cavanaugh, Kenneth L. *Journal of Offender Rehabilitation* 36: 181–203, 2003.

Findings: Rehabilitation of Prisoners: Decreased Recidivism; Reduced Severity of Re-offence

B: Productivity and Quality of Life

572 The effects of a stress management program in a high security government agency.

Sheppard, William D.; Stagers, Frank J.; John, Lucille. *Anxiety, Stress, and Coping* 10: 341–350, 1997.

Findings: Decreased Anxiety; Decreased Depression; Improved Self-Concept

573 Effects of Transcendental Meditation for reducing anxiety in Japanese businessmen. Sakairi, Yosuke. Summary of a paper published in *Perspectives on relaxation and meditation*, Mark Blows & Saroja Srinivasan (Eds.); Melbourne: Spectrum Publications, 1992, pp. 163–175; and originally published in Japanese as: The effect of Transcendental Meditation in reducing anxiety level, *Japanese Journal of Hypnosis*, vol. 33, 1989, pp. 8–14. Findings: Lower Anxiety Compared to Non-Meditators and Prospective Meditators; Longitudinal Reduction in Anxiety Compared to Controls; Reduction in Anxiety Uncorrelated with Prior Expectation

574 Leadership development and self-development: An empirical study. McCollum, Bruce. *Career Development International* 4: 149–154, 1999. Findings: Increased Leadership Behaviour; Improvement in Each Subscale of Leadership Behaviour (Challenging the Process, Inspiring a Shared Vision, Enabling Others to Act, Modeling the Way, Encouraging the Heart)

575 Effects of the Transcendental Meditation program on psychological, health, social, and behavioral indicators of stress reduction and human resource development in the Indian workplace. Carlisle, Thomas W. *Dissertation Abstracts International* 65(12A): 4629, 2005. Findings: Decreased Perceived Stress; More Healthy Lifestyle; Improved Personal Experiences; Reduction of Medical Symptoms; Increased Self-Esteem

576 Worksite stress reduction through the Transcendental Meditation program. Broome, J. Richard N.; Orme-Johnson, David W.; and Schmidt-Wilk, Jane. *Journal of Social Behavior and Personality* 17: 235–273, 2005. Findings: Reduction in Psychological Stress; Reduction in Systolic and Diastolic Blood Pressure; Improved Corporate Climate—Greater Support; Reduction of Psychological Stress in the Entire Company Site

577 Consciousness-Based management development: Case studies of international top management teams. Schmidt-Wilk, Jane. *Journal of Transnational Management Development* 5(3): 61–85, 2000. Findings: Case Studies in Corporations—Holistic Development in Managers and Managing Teams

**The Following Papers in This Section Document the Growth of Coherence
in the Collective Consciousness of States, Nations and the World.**

578 Effects of group practice of the Transcendental Meditation program on preventing violent crime in Washington, DC: Results of the National Demonstration Project, June–July, 1993.

Hagelin, John S.; Rainforth, Maxwell V.; Orme-Johnson, David W.; Cavanaugh, Kenneth L.; Alexander, Charles N.; Shatkin, Susan F.; Davies, John L.; Hughes, Anne O.; and Ross, Emanuel. *Social Indicators Research* 47: 153–201, 1999.

Findings: Decreased Violent Crime (Washington, D.C., June–July 1993)

579 Transforming political institutions through individual and collective consciousness: The Maharishi Effect and government.

Goodman, Rachel S.; Orme-Johnson, David W.; Rainforth, Maxwell V.; and Goodman, David H. Paper presented at the annual meeting of the American Political Science Association, Washington, DC, August 1997. See also *Dissertation Abstracts International* 58(6): 2385A, 1997.

Findings: Improved Quality of Life in National Capital: Decreased Emergency Psychiatric Calls, Decreased Hospital Trauma Cases, Decreased Complaints Against Police, Decreased Accidental Deaths, Reduction of Social Stress Index (Washington, DC, July 1993); Improved Quality of National Government: Increased Approval Ratings of Head of State (USA, 1993); Increased Media Positivity Toward the Head of State (USA, 1993)

580 Maharishi Vedic economy: Wholeness on the move.

Hatchard, Guy D. *Dissertation Abstracts International* 61(4B): 2271, 2000.

Findings: Increased International Economic Competitiveness (New Zealand and Norway, 1993); Stable Growth of Balanced Economic Health (New Zealand and Norway, 1993–1997); Reduced Crime (Merseyside, U.K., 1988)

581 Alleviating political violence through reducing collective tension: Impact assessment analyses of the Lebanon war.

Davies, John L.; and Alexander, Charles N.

Journal of Social Behavior and Personality 17: 285–338, 2005.

Findings: Increased Peace Index; Increased Cooperation; Decreased Conflict; Decreased War Fatalities; Decreased War Injuries (Lebanon, Seven Periods in 1983–1985)

582 Preventing terrorism and international conflict: Effects of large assemblies of participants in the Transcendental Meditation and TM-Sidhi programs.

Orme-Johnson, David W.; Dillbeck, Michael C.; and Alexander, Charles N.

Journal of Offender Rehabilitation 36: 283–302, 2003.

Findings: Decreased International Conflict; Decreased International Terrorism (International, Three Periods in 1983–1985)

PART IV: THEORETICAL AND REVIEW PAPERS

A: Physiology and Health

583 Pure consciousness: Distinct phenomenological and physiological correlates of “consciousness itself”.

Travis, Frederick; and Pearson, Craig. *International Journal of Neuroscience* 100: 77–89, 2000.
Findings: The authors review subjective and physiological correlates of the experience of Transcendental Consciousness, or “consciousness itself” during the practice of Transcendental Meditation.

584 Stress, stress reduction, and hypercholesterolemia in African Americans: A review. Calderon, Raul, Jr.; Schneider, Robert H.; Alexander, Charles N.; Myers, Hector F.; Nidich, Sanford I.; and Haney, Chinelo. *Ethnicity & Disease* 9: 451–462, 1999.
Findings: The authors review research on reduction of stress and reduction of coronary heart disease risk factors through the practice of Transcendental Meditation, and the potential benefit of this program for reducing the high rates of coronary heart disease among African Americans.

585 Stress, stress reduction, and hypertension in African Americans: An updated review. Barnes, Vernon; Schneider, Robert; Alexander, Charles; and Staggers, Frank. *Journal of the National Medical Association* 89: 464–476, 1997.
Findings: The authors review research on the factors underlying the greater prevalence of hypertension in African Americans, and the effects of behavioural stress reduction through Transcendental Meditation.

586 Transcendental Meditation, hypertension and heart disease. King, Michael S.; Carr, Tim; and D’cruz, Cathryn. *Australian Family Physician* 31: 164–168, 2002.
Findings: The authors review research on the benefits of Transcendental Meditation in prevention and treatment of coronary heart disease.

587 Review of controlled research on the Transcendental Meditation program and cardiovascular disease. Risk factors, morbidity, and mortality. Walton, Kenneth G.; Schneider, Robert H.; and Nidich, Sanford. *Cardiology in Review* 12: 262–266, 2004.
Findings: Research is reviewed indicating that the Transcendental Meditation program reduces cardiovascular risk factors, and also the conditions that result from these factors; the possible role of normalization in neuroendocrine functioning from the effects of chronic stress is discussed.

588 Psychosocial stress and cardiovascular disease. Part 2: Effectiveness of the Transcendental Meditation program in treatment and prevention. Walton, Kenneth G.; Schneider, Robert H.; Nidich, Sanford I.; Salerno, John W.; Nordstrom, Cheryl K.; and Merz, C. Noel Bairey. *Behavioral Medicine* 28: 106–123, 2002.
Findings: The authors review research on the Transcendental Meditation program indicating reduction of physiological indicators of stress, and demonstrating reduction of cardiovascular risk factors, morbidity, and mortality.

589 Psychosocial stress and cardiovascular disease. Part 3: Clinical and policy implications of research on the Transcendental Meditation program. Walton, Kenneth G.; Schneider, Robert H.; Salerno, John W.; and Nidich, Sanford I. *Behavioural Medicine* 30: 173–183, 2005.
Findings: The authors review research evidence for prevention of cardiovascular disease and also reduction of health care expenditures related to cardiovascular disease and to other disorders.

590 Medical effects of Transcendental Meditation.

Rasmussen, Lars Bjørn. *Tidsskrift for Den norske lægeforening* 122: 220, 2002.

Findings: The author summarizes research findings on the Transcendental Meditation Programme indicating improved mental health, improved cardiovascular health, and reduction of the detrimental effects of the ageing process.

B: Education

591 Consciousness-Based education for total development of the brain in contrast to existing education which partially develops the brain: Summary of scientific research.

Dillbeck, Michael C.; and Dillbeck, Susan L. In *Ideal India*, pp. 47–74, Vlodrop, The Netherlands: Maharishi University of Management, 2001.

Findings: The authors review neuroscience research on the effects of experience on brain functioning and development; research is also reviewed indicating that the experience of Transcendental Consciousness, in contrast to typical educational experiences, promotes holistic brain functioning and corresponding expansion of mental capabilities.

592 Higher education for higher consciousness: Maharishi University of Management as a model for spirituality in management education.

Schmidt-Wilk, Jane; Heaton, Dennis P.; and Steingard, David. *Journal of Management Education* 24: 580–611, 2000.

Findings: The authors analyze the integrated system of management education at Maharishi University of Management as a model for educators seeking to integrate spirituality into management education, and in that context review empirical findings on student learning and development through the Transcendental Meditation Programme at Maharishi University of Management and other universities.

593 Attacking crime at its source: Consciousness-Based education in the prevention of violence and antisocial behavior.

Jones, Christopher; Clayborne, B. Mawiyah; Grant, James D.; and Rutherford, George. *Journal of Offender Rehabilitation* 36: 229–255, 2003.

Findings: The authors review research indicating that the Transcendental Meditation Programme reduces risk factors for crime in four broad categories—physiological, psychological, sociological, and substance abuse; and conclude that the program will be a highly effective means to reduce or eliminate violent behavior in schools.

C: Psychology

594 Maharishi's Vedic psychology: The science of the cosmic psyche.

Orme-Johnson, David W.; Zimmerman, Eva; and Hawkins, Mark. In *Asian Perspectives on Psychology*, eds. H. S. R. Kao and D. Sinha, pp. 282–308. New Delhi/Thousand Oaks/London: Sage Publications, 1997.

Findings: The authors present fundamental theoretical principles of a complete system of psychology based on Maharishi's Vedic Science and the most recent developments of modern

science; and review research on the Transcendental Meditation Programme supporting the principles of this system in terms of the holistic development of individual life and society.

D: Rehabilitation

595 Effectiveness of the Transcendental Meditation program in criminal rehabilitation and substance abuse recovery: A review of the research.

Hawkins, Mark A.

Journal of Offender Rehabilitation 36: 47–65, 2003.

Findings: The author reviews research on the Transcendental Meditation Programme as an effective modality for treatment and prevention of criminal behavior and substance abuse.

596 Effects of the Transcendental Meditation program on neuroendocrine abnormalities associated with aggression and crime.

Walton, Kenneth G.; and Levitsky, Debra K.

Journal of Offender Rehabilitation 36: 67–87, 2003.

Findings: The authors review research evidence for neuroendocrine abnormalities in aggression and crime related to stress, and review research indicating that the beneficial effects of the Transcendental Meditation Programme in reduction of criminal behavior may in part be through removing these stress-induced neuroendocrine abnormalities.

597 The Transcendental Meditation program—A Consciousness-Based developmental technology for rehabilitation and crime prevention.

Goodman, Rachel S.; Walton, Kenneth G.; Orme-Johnson, David W.; and Boyer, Robert.

Revised version of a paper that appeared in *Journal of Offender Rehabilitation* 36: 1–34, 2003.

Findings: The authors examine the effectiveness of the Transcendental Meditation Programme in correctional settings as an expression of the technique's ability to promote human development to higher states of consciousness, which are analyzed as extending and fulfilling current psychological concepts of human development.

598 Deterrence, rehabilitation and human nature: The need for a holistic approach to offenders.

King, Michael S. *Criminal Law Journal* 24: 335–345, 2000.

Findings: This paper proposes that limitations of both deterrence and rehabilitation arise from their inability to systematically promote right action by addressing the whole person; it reviews scientific research findings on the Transcendental Meditation Technique demonstration reduction of physiological and psychological stress, and improved behavior among offenders who begin the practice.

599 Natural Law and the Bhagavad-Gita: The Vedic concept of Natural Law.

King, Michael S.

Ratio Juris 16: 399–415, 2003.

Findings: The author discusses the Vedic understanding of Natural Law in terms of the development of the ability for naturally right action; research on the Transcendental Meditation Programme on offenders is reviewed in this context.

600 Geraldton Alternative Sentencing Regime: Applying therapeutic and holistic jurisprudence in the bush.

King, Michael S. *Criminal Law Journal* 26: 260–271, 2002.

Findings: The author describes an alternative sentencing approach implemented in Western Australia which used court processes to promote healing and individual responsibility through a variety of approaches; experiences of participants who learn the Transcendental Meditation Programme, including reduced substance abuse and improved well-being, are consistent with previously published research findings.

E. Productivity

601 Improved time management through human development: Achieving most with least expenditure of time.

Harung, Harald S. *Journal of Managerial Psychology* 13: 406–428, 1998.

Findings: The author suggests that the development of consciousness of the observer is the key factor determining the experience of time in a positive way, and reviews research on the Transcendental Meditation Programme indicating enhanced psychological development as well as reversal of the detrimental effects of ageing; development of higher states of consciousness is proposed as the basis for most productive management of time.

602 TQM and the Transcendental Meditation program in a Swedish top management team.

Schmidt-Wilk, Jane. *The TQM Magazine* 15: 219–229, 2003.

Findings: The author reviews theory and research in developmental psychology, proposing that effective application of the concepts of total quality management to improve corporate performance depends upon the degree of maturity of the executives, and cites case study experiences to indicate that the Transcendental Meditation Programme, which promotes developmental maturity as indicated by previous research, is effective in facilitating quality improvement processes among corporate managers.

F: Quality of Life

603 Preventing crime through the Maharishi Effect.

Orme-Johnson, David W. *Journal of Offender Rehabilitation* 36: 257–281, 2003.

Findings: The author outlines the principle of preventing crime through creation of increased coherence in collective consciousness, and reviews research studies indicating reduced crime and improved quality of life in society through the practice of the Transcendental Meditation and TM-Sidhi Programme by large groups of individuals—the Maharishi Effect.

604 Maharishi's Vedic Defense Technologies: Scientifically proven to prevent terrorism and international conflict.

Chandler, Howard M. Paper presented at the International Conference on Terrorism: Threat to the 21st Century, sponsored by the International Institute for Non-Aligned Studies, New Delhi, India, December 1998.

Findings: The author reviews research findings on the influence of peace created by large groups of experts in the TM-Sidhi Programme including Yogic Flying, including reduction of international terrorism and international conflict, and considers these findings in light of recent advances of modern physics.

605 A Consciousness-Based approach to human security.

Goodman, Rachel. S.; Goodman, David H.; and Wolfson, Richard. In *Perspectives on human security: National sovereignty and humanitarian intervention*, ed. M. V. Naidu (pp. 189–210). Brandon, Manitoba, Canada: Canadian Peace Research and Education Association, 2001.

Findings: The authors propose that the quality of individual and collective consciousness is holistically responsible for the various factors that influence human security in society; and review research studies on enhanced social security and quality of life through group practice of the Transcendental Meditation and TM-Sidhi Programme.