

PAPER 515

TRANSCENDENTAL MEDITATION AS AN EPIDEMIOLOGICAL APPROACH TO DRUG AND ALCOHOL ABUSE: THEORY, RESEARCH, AND FINANCIAL IMPACT EVALUATION

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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.—EDITOR

INTRODUCTION

The epidemic of drug and alcohol abuse is part of a larger complex of problems that arise from stress in collective consciousness. Collective consciousness is held to be a field that permeates society, with the individual as its basic unit. Stress in individuals means dysfunction of physiological and cognitive adaptive systems, which results in inability to fulfill desires and, consequently, a lack of fulfillment. Stressed individuals create stress in collective consciousness, which is experienced throughout society as tension, anxiety, and lethargy. Stress in collective consciousness, in turn, causes people to take alcohol and drugs as an attempt to reestablish balance and gain an illusion of optimal state of functioning and fulfillment. However, alcohol, tobacco, and drugs instead invariably throw the system out of balance, leading to a vicious cycle of escalating stress in both the individual and society.

This paper presents the theory of Maharishi Mahesh Yogi, which suggests that experience of the silent basis of the mind, transcendental consciousness, is the direct experience of the unified field of nature's intelligence. This experience, which can be systematically gained through Maharishi's Transcendental Meditation and TM-Sidhi program, can break the vicious cycle of growing individual and

collective stress, reestablish balance, and cultivate optimal psychophysiological functioning, thus reducing the urge to further consume alcohol and drugs. Extensive research, reviewed in this paper, shows that when 1% of the population practices the Transcendental Meditation program or the square root of 1% practices the TM and TM-Sidhi program in a group an influence of coherence is created in collective consciousness, reducing all the various stress-related social problems.

The financial savings of widespread application of this program to reduce stress in collective consciousness are estimated to be hundreds of billions of dollars per year. The research indicates that this program is a highly effective and inexpensive public health measure to "immunize" the entire population against stress and its symptoms, drug and alcohol abuse.

THEORY

A Multidimensional Epidemic: Drug and alcohol abuse are part of a multidimensional international epidemic that involves virtually every area of society, including the criminal justice system, health, education, social welfare, and the economy (Bureau of Justice Statistics [BJS] Bulletin, 1993, p. 8). An estimated 38 million Amer-

icans (15% of the population) are chemically addicted to alcohol or drugs (Yoder in Hazleden Foundation, 1991). Moreover, if each addict affects three family members, then 60% of the population is directly or indirectly affected by use of these substances (Yoder, 1990, p. v).

The problem of crime is so closely interrelated with drug and alcohol abuse that they must be considered part of the same epidemic. Alcohol and drug use is a contributing factor in 54% of all violent crimes, 40% of property crimes, and 64% of public order crimes in the U.S. (Yoder in Hazleden Foundation, 1991, p. 52). Heroin addicts commit an average of 178 criminal offenses per year (Johnson et al., 1985). In 1991, drug related offenses were the largest single cause of federal imprisonment, accounting for 14,738 new sentences (BJS Bulletin, 1993, p. 8).

If tobacco use is included in the picture, which it should be, since nicotine is an addictive drug, then the public health implications of this epidemic become even more staggering. Twenty percent of the industrialized world's current population—at least 250 million people, more than the population of the United States—will die of smoking-related diseases (Peto, Lopez, Boreham, Thum, & Heath, 1992). In the U.S. almost 400,000 people will die of smoking related diseases, and 18 million will experience alcohol-related health problems (U.S. Department of Health and Human Services, 1990a).

The epidemic of drugs, alcohol, and crime also seriously affects the economy. For example, alcohol and drugs account for 52% of all traffic fatalities (in Hazleden Foundation, 1991). Because it raises insurance premiums, and lowers productivity, drug and alcohol abuse costs corporations \$93 billion a year (Harwood et al., 1984; Rice et al., 1990). These addictions also increase the tax burden due to costs for treatment, incarceration, and social welfare to care for the afflicted individuals and their families.

Our educational system is heavily implicated in this multidimensional epidemic. One in four high school students has a drinking problem (Horton, 1985), and one third of all schools children in the U.S. have used an illicit drug (U.S. Dept. of Health and Human Services, 1991). More than 135,000 students carry a gun to school, and in 1990 over half a million violent crimes occurred around American schools, a majority of which were drug or alcohol related (Children's Defense Fund, 1991). Education should be our front line defense against this epidemic, but instead our schools are a breeding ground for drug abuse and violence. Clearly a fresh perspective on education is needed, as one component of a strategy for curbing the epidemic.

Social Stress as the Cause of the Epidemic: Linsky, Colby, and Straus (1986) have pioneered in the concept of

social stress as the underlying cause of crime, disease, and maladaptive behavior such as drug and alcohol abuse. In their analysis, social stress is a component process of the social system as a whole that may not be predictable from knowledge about individuals. They operationalize social stress in three categories: economic stressors (e.g., business failures, unemployment, workers on strike, personal bankruptcies, and mortgage foreclosures); family stressors (e.g., divorces, abortions, illegitimate births, infant deaths); and other stressors (new welfare cases, high school dropouts, state residence less than 5 years). In two studies, Linsky and Straus use these parameters to measure the stress level of the 50 states in a "State Stress Index" (SSI). They found that the SSI was predictive of maladaptive behavior as indicated by the level of crime, disease, accidents of all kinds, and suicides. They found that the SSI was significantly correlated with cirrhosis and lung cancer, indirect measures of alcohol and cigarette related behavior. In another studies, Linsky, Strauss, and Colby (1985) found that social stress as variously defined (e.g., the SSI, barriers to upward mobility, structurally induced role conflict) was a significant predictor of death rate from alcoholism, alcohol psychosis, and per capita alcohol consumption, once other variables were controlled. They also found that social stress is correlated with smoking, and that smoking in turn is correlated with death from respiratory cancer (Linsky, Colby, & Straus, 1986). Drug use is indirectly related to social stress because social stress is a good predictor of crime, particularly violent crime (Yoder in Hazleden Foundation, 1991, p. 52), and half of violent crime is attributed to drug and alcohol use. Thus *there is strong evidence that alcohol, tobacco, and drug use are all elevated by social stress.*

These studies indicate that drug and alcohol abuse are not just individual aberrations but are manifestations of underlying imbalances in society. Just as a systemic disease gives rise to localized symptoms, so too does stress in society give rise to drug and alcohol abuse. Without knowledge of the systemic aspect of the disease process, one would be inclined to treat each symptom topically, which would be extremely difficult, and ineffective because it would miss the cause of the problem. Similarly, it is simplistic and reductionist to treat drug and alcohol abuse as individual and independent processes, because they are enmeshed in a wider complex of problems related to economy, the family, poor health, poor nutrition, crime, poverty, racism, lack of fulfillment, and lack of purpose, direction, and something for which to live.

Limitations of the Social Stress Model: The social stress model has a number of shortcomings. For one thing, it is difficult to separate cause and effect in the model. Family problems, such as divorce, may cause alcohol abuse, but then drinking may also cause family problems. In Linsky and

Straus's model, *social stress variables* such as business failures, unemployment, strikes, personal bankruptcies, divorces, abortions, infant deaths, and high school dropouts are hypothesized to be the *cause of maladaptive behavior variables* such as alcohol and drug problems, crime, disease, accidents of all kinds, and suicides. But the opposite may also be true. The maladaptive behavior variables such as alcohol and drug problems, crime, disease, accidents, and suicides may cause change in the social stress variables: business failures, unemployment, strikes, personal bankruptcies, divorces, abortions, infant deaths, high school dropouts, etc. The correlation between the two sets of variables only indicates that they are part of a single interacting system.

In our view, both social stress variables and maladaptive behavior variables are *symptoms of the same epidemic*, not causes. There is no real causal level specified by current social stress models that point to a way of treating this epidemic. How do we reduce social stress? We can not tell people not to have business failures or not to go on strike or get divorced any more than we can effectively tell them not to drink, smoke, or take drugs.

Concepts of Collective Consciousness in the Social Sciences: All the main streams of contemporary sociological theory—conflict theory, structural-functional theory, and symbolic interaction theory—view society in terms of direct *behavioral* and symbolic interactions between individuals and groups. In this view individuals and society are completely localized entities which interact with each other in very complex ways but which are in their essence separate. Such a “collective consciousness,” if it exists, might well be the unambiguous causal level missing from the social stress model.

However, several of the founding theorists of modern psychology and sociology have proposed the concept of consciousness as a field through which individuals may be fundamentally connected. One of the founding fathers of modern psychology, Gustav Fechner, for example, described a unity or continuity of “general consciousness” underlying the discontinuities of consciousness associated with each individual, accessible in principle simply through lowering the threshold of conscious experience (in James, 1898/1977). William James, the founder of psychology as an academic discipline in America, suggested that the brain may serve to reflect or transmit, rather than produce, consciousness, which in turn may be conceived as a transcendental, infinite continuity underlying the phenomenal world (ibid.). Emile Durkheim, considered one of the founders of modern sociology, proposed that a *conscience collective* was the essence of the underlying social fabric unifying individuals in society. This “collective consciousness” was described by Durkheim as the mind of so-

ciety, created when “the consciousness of the individuals, instead of remaining isolated, becomes grouped and combined” (1951, pp. 310, 312, 313). Carl Jung also talks of a *collective unconscious* as the repository of humanity's collective experience that embodies archetypal patterns that are actualized by individuals and society as specific individual personalities and social roles (Campbell, 1949).

None of these theories of collective consciousness, however, were operationalized and therefore they did not engender any scientific research or practical programs for the betterment of society. Consequently, they never became major components of mainstream social science theory or research (McDougall, 1920/1973).

Maharishi's Principles of Collective Consciousness:

In sharp contrast to the early theories of psychology, Maharishi Mahesh Yogi's (e.g., 1977) theory of collective consciousness has testable consequences which have been extensively researched, and it has practical applications which promise to dramatically reduce and eventually eliminate the drug-alcohol-crime epidemic. Maharishi's theory of collective consciousness has its roots in the Vedic¹ tradition of India. In the Vedic literature, the Yoga Sutras of Patanjali, one of the “six systems of Indian philosophy” (Prasada, 1978), states *tat sannidhau vairatyagah* which means “in the vicinity of coherence [yoga], hostile tendencies are eliminated.” In this view, meditation produces coherence in the field of collective consciousness, which then penetrates throughout society and influences everyone, reducing stress in the whole system, thus eliminating the manifestations of stress, such as hostility and drug and alcohol abuse.

“Consciousness” is defined as the ground of awareness on which all thought processes and behaviors depend (Maharishi, 1966). For example, when we are drowsy and dull, our thought and behavior are full of mistakes and create suffering. Collective consciousness is the wholeness of consciousness of an entire group. Just as an individual consciousness can be drowsy and stressed or wide awake and happy, so too can collective consciousness. For example, each family has a characteristic collective consciousness. When we go into a home of a happy family, we feel a harmonious influence and our behavior becomes more relaxed and open. Similarly, each city, state, and country has a characteristic collective consciousness (Maharishi Mahesh Yogi, 1977). When we enter a city with a high crime rate, we sense it and feel tense and uneasy.

In Maharishi's theory of collective consciousness, the quality of collective consciousness at each subordinate

¹ The word Veda means knowledge. Vedic means pertaining to knowledge.

level contributes to the quality of collective consciousness at a higher level. For example, stressed individuals create stress in the family consciousness. Stressed family consciousnesses create stress in the city consciousness, urban stress influences the state's collective consciousness, and so on, ultimately to the collective consciousness of the entire globe (Maharishi Mahesh Yogi, 1977, p. 122). We propose that the epidemic of drugs and alcohol abuse arises from stress in all levels of collective consciousness, from family consciousness to world consciousness, and therefore, must ultimately be treated on the world level.

Maharishi's theory of collective consciousness holds that there is a reciprocal relationship between individual consciousness and collective consciousness (Maharishi Mahesh Yogi, 1977, p. 124). That is, each individual influences the collective consciousness of the society, and, at the same time, each individual is influenced by the collective consciousness. The stress of everyone else in the world is influencing us, just as our stress is influencing everyone else in the world, through the field of collective consciousness (Maharishi Mahesh Yogi, 1977, pp. 122–124).

Biochemistry of Stress: Since the individual is the basic unit of collective consciousness, the source of stress in collective consciousness is stress in the individual. To understand stress in the individual and collective consciousness and how it relates to drug and alcohol abuse, we will review some of the recent stress research. In recent years a great deal has been discovered about stress (Chrousos & Gold, 1992; Sapolsky, 1992). Stress is conceptualized as a generalized response of the system that occurs when the pressure of experience exceeds a threshold. Overload of the system breaks it down. The components of the stress system are the corticotropin-releasing hormone and the norepinephrine/autonomic systems, the pituitary-adrenal axis, and the limbs of the autonomic system. The stress response mobilizes bodily resources to support an adaptive response to environmental challenges while maintaining homeostatic balance. Basically, the purpose of the stress response is to fulfill desires. The problem comes when the system malfunctions due to chronic overstimulation. The system may become depleted and lose the ability to cope with challenges. Or the set points of the system may become reset so that the system may fail to return to optimal baseline levels, as in hypertension.

Stress has a wide range of effects on psychiatric, endocrine, and inflammatory disorders as well as susceptibility to these disorders. The stress systems are strongly influenced by cognitive and emotional factors. The exigencies of modern life increase the risk of malfunction of the stress system and raise the prevalence of stress-related diseases (Elliot & Eisendorfer, 1982).

Thus, stress in the individual involves an imbalance in

the delicate and complex neurochemical systems that regulate adaptive responses. These imbalances get transmitted from individual to individual in society both behaviorally and via collective consciousness.

TM has been found to have the opposite biochemical effects of stress, which is reviewed below in the section on research.

Stress in Collective Consciousness: In Maharishi's view, all problems in society are expressions of stress throughout the system as a whole, i.e., in its collective consciousness. Maharishi states: "All occurrences of violence, negativity and conflict, crises, of problems in any society are just the expression of growth of stress in collective consciousness. When the level of stress becomes sufficiently great, it bursts out into large-scale violence, war, and civil uprising necessitating military action" (1979, p. 38).

When stress in collective consciousness builds up to an extreme degree, then it will inevitably burst out in violence and conflict, such as a race riot or drug war. Just as any spark can kindle a fire in dry grass, any unfortunate event can have catastrophic results when there is great stress in collective consciousness (Maharishi Mahesh Yogi, 1986a, pp. 83–84). Stress, originating in the individual, is thus held to be the basis of all problems in society, including alcohol and drug abuse, negativity, violence, terrorism, and national and international conflicts (Maharishi Mahesh Yogi, 1986a, pp. 80–85). They are all aspects of the same epidemic.

The Theoretical Model: Figure 1 illustrates how drug abuse and crime are just two of the many symptoms of the multidimensional epidemic caused by stress in collective consciousness. Behavioral symptoms and the underlying field of stress in collective consciousness are shown to reciprocally interact within the circle of society. Underlying and outside society is the unified field of natural law, the source of order in nature.

In order to reduce stress in the individual and in collective consciousness, one must step out of the vicious cycle of stress in social behavior and collective consciousness, and go to a deeper underlying level of natural law, the unified field of natural law (to be discussed below). In Maharishi's theory, the unified field is a field of pure consciousness that is the source of order and coherence not only in society, but in nature.

According to Maharishi, the unified field of natural law can easily and effortlessly be experienced as transcendental consciousness through the Transcendental Meditation technique.

The Transcendental Meditation technique is an effortless procedure for allowing the excitations of the mind to

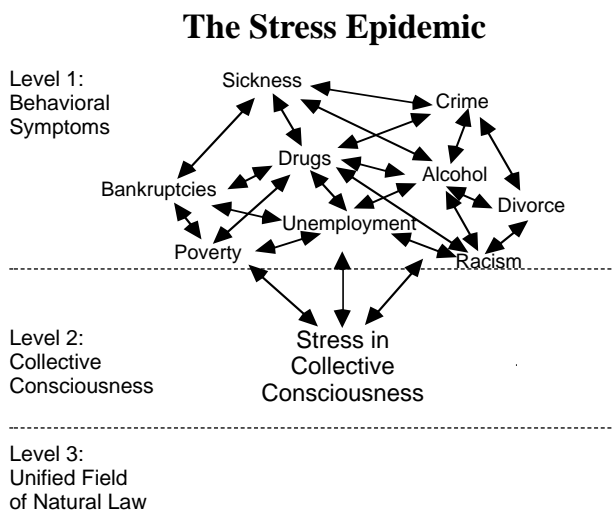


FIGURE 1. This illustration shows drug and alcohol abuse as part of a multidimensional complex of behavioral symptoms (Level 1) that arise from stress in an underlying abstract field of collective consciousness (Level 2). The circle represents the usual system of reciprocal interaction of stress in collective consciousness and its behavioral symptoms. Underlying the circle is the unified field of natural law, the source of nature's infinite organizing power, which governs the universe in perfect orderliness (Level 3). When the unified field of natural law is outside the circle of the behavioral/collective consciousness system of society, incoherence and conflict predominate in society.

settle down until the least excited state of mind is reached. This is a state of inner wakefulness with no object of thought or perception, just pure consciousness aware of its own unbounded nature. It is wholeness, aware of itself, devoid of differences, beyond the division of subject and object—transcendental consciousness. It is a field of all possibilities, where all creative potentialities exist together, infinitely correlated yet unexpressed. It is a state of perfect order, the matrix from where all the laws of nature emerge. (1977, p. 123)

How many meditators are theoretically needed to produce a measurable increase in coherence in an entire society? A large body of scientific research reviewed below has found that as little as one percent of a population practicing the TM program or an even smaller number, on the order of the square root of 1% of a population, collectively practicing the TM-Sidhi program is sufficient to produce a measurable and holistic influence of harmony and integration in the entire population (c.f., Maharishi Mahesh Yogi, 1986a, p. 76).

To understand how such a remarkably small group could influence an entire population we can consider analogous phenomena in physical systems. In systems governed by wavelike interactions, the strength of elements that are interacting coherently is proportional to the square of their

number, while the influence of elements that are interacting incoherently is only proportional to their number. As a result, when a number proportional to the square root of the total elements are interacting coherently, then the coherent influence outweighs the incoherent influence of all the other elements in the system. An example of this principle is laser light. Through the coherent emission of a number of photons that is proportional to the square root of the total, the entire system undergoes a phase transition in which all the photons begin to interact coherently, generating the laser light.

In a similar manner, Maharishi's theory predicts that the coherent influence generated by the square root of 1% of the population experiencing the field of pure consciousness will combine to create a powerful influence of coherence in the entire society. Maharishi comments on this point in referring to pure consciousness as the transcendental level of nature's function:

This transcendental level of nature's functioning is the level of infinite correlation. When the group awareness is brought in attunement with that level, then a very intensified influence of coherence radiates and a great richness is created. Infinite correlation is a quality of the transcendental level of nature's functioning from where orderliness governs the universe. (1986a, p. 75)

Figure 2 illustrates this idea. When there is a sufficient number of meditators in society, they enliven the unified field of nature's intelligence, the "Constitution of the Universe" said to govern all of nature in perfect orderliness. These individuals neutralize stress and radiate coherence in collective consciousness, which fosters ideal social relationships on the behavioral level.

If stress in the collective consciousness creates the drug problem, then neutralizing the stress in the whole society in one stroke would solve it. The difficulty dealing with the drug problem by any other means (unaided by creating coherence in collective consciousness) is that the solution *must* be systemic. Alcohol and drug abuse have many complex determinants—economic, political, historical, individual, ethnic—that must all be addressed simultaneously if a drug-free society is to become a stable reality. The beauty of Maharishi's approach to drug abuse is that it deals with the whole system at once through its collective consciousness, which is possible because collective consciousness touches every level of life in society.

Corroborating Insights from Modern Scientists: In Maharishi's (1966, 1977, 1986a) analysis, the unified field of natural law that has recently been glimpsed by modern physics is the same reality that India's ancient Vedic Science, Plato, and virtually all of the world's philosophical traditions have identified as the source of order in nature

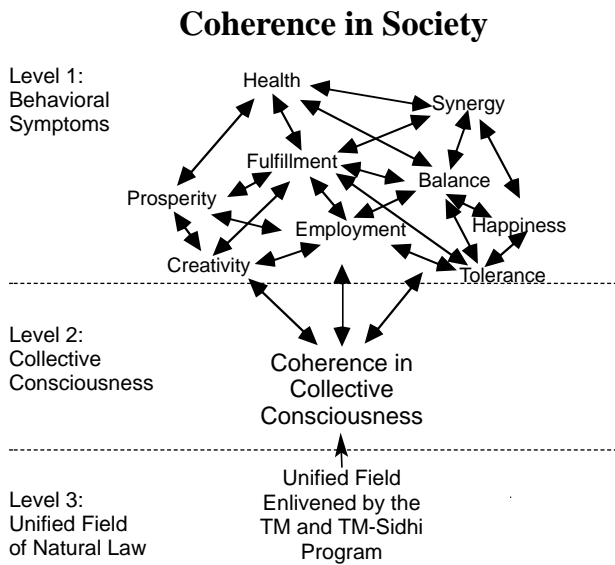


FIGURE 2. This figure illustrates the transformation of society that comes about when 1% of the population practices the Transcendental Meditation technique, or the square root of 1% practices the TM-Sidhi program. The sphere of society is expanded to include the unified field of natural law, whose infinite organizing power creates coherence in society, resulting in ideal social behavior in which the individual and society are always fully mutually supportive.

(Hagelin, 1987, 1989). Maharishi’s assertion that the source of order in nature is a field of consciousness is supported by the statements of many of the leading scientists of our time. For example, Sir Arthur Eddington, who provided empirical confirmation of Einstein’s General Theory of Relativity, wrote: “The idea of a universal Mind or Logos would be, I think, a fairly plausible inference from the present state of scientific theory; at least it is in harmony with it” (1984, p. 206; c.f., Dossey, 1989, p. 125).

The eminent astronomer, mathematician, and author Sir James Jeans wrote:

When we view ourselves in space and time, our consciousness are obviously the separate individuals of a particle-picture, but when we pass beyond space and time, they may perhaps form ingredients of a single continuous stream of life. As it is with light and electricity, so may it be with life; the phenomena may be individuals carrying on separate existences in space and time, while in the deeper reality beyond space and time we may all be members of one body. (1981, p. 204; c.f., Dossey, 1989, p. 125)

Thus we see that Jeans intuited that the most basic level of consciousness is a continuum that interconnects everyone and everything. It has been argued that quantum field theory gives consciousness an ontologically fundamental position. As the French physicist Bernard D’Es-

pagnat (1979) commented in a *Scientific American* article: “The doctrine that the world is made up of objects whose existence is independent of human consciousness turns out to be in conflict with quantum mechanics and with the facts established by experiment.” Max Planck, the father of quantum theory, more directly said, “I regard consciousness as fundamental. I regard matter as derivative from consciousness” (quoted in Klein, 1984).

Thus, both ancient and modern seers have apprehended that the basis of natural law underlying human society is an unbounded field of consciousness. But it has remained for Maharishi’s revival of Vedic knowledge to bring to the world the practical significance of this theoretical frame. Through the widespread availability of a simple technology for experiencing the unified field of natural law—Maharishi’s Transcendental Meditation program—research on collective consciousness has taken a foothold and has demonstrated its ability to solve the otherwise recalcitrant worldwide epidemic of stress-related disorders. The research indicates that the Transcendental Meditation and TM Sidhi program is a practical technology to “immunize” the entire population against the stress epidemic, which can substantially reduce and eventually eliminate alcohol and drug abuse.

RESEARCH

Research on the Individual: The individual is the unit of collective consciousness. Therefore, in order to reduce stress and create coherence in society, it is necessary to reduce stress and create coherence in the individual. Hans Selye, who was the foremost pioneer of stress research, summarized the research on Maharishi’s Transcendental Meditation technique as follows:

Research already conducted shows that the physiological effects of Transcendental Meditation are exactly the opposite of those identified by medicine as being characteristic of the body’s effort to meet the demand of stress. The TM technique is a method which so relaxes the human central nervous system that...it doesn’t suffer from stress....And I think that if you can relax the nervous system so that it can really relax, really be at its best in responding non-specifically to any demand, that is an ideal solution. (cited in Oates, 1976, pp. 214–217)

Since Selye made that statement, there have been three major meta-analyses which corroborate it. A meta-analysis conducted on the 32 physiological studies of the Transcendental Meditation technique compared with simple rest while sitting quietly with eyes closed found that TM produced significantly greater reduction in somatic arousal than simply resting quietly, as measured by basal skin resistance, respiration rate, and plasma lactate (Dillbeck & Orme-Johnson, 1987; also, see the review paper on the physiological effects of TM by Jevning, Wallace, & Bei-

debach, 1992). In addition, Walton, Pugh, Gelderloos, & Macrae (submitted) have recently shown that TM normalizes the biochemistry, an extremely important finding in explaining its effects on substance abuse.

A second meta-analysis by Eppley, Abrams, and Shear (1989) considered all the research on the effects of meditation and relaxation on anxiety (146 independent outcomes), and found that TM produces significantly greater reduction in trait anxiety (i.e., chronic stress) than is provided by any other meditation or relaxation technique. Studies with the strongest experimental design (random assignment to groups and low attrition) showed the largest effects for TM and the greatest contrast between TM and other meditation and relaxation techniques.

A third exhaustive meta-analysis of 42 independent outcomes found that the effect produced by TM on overall self-actualization as indicated primarily by the Personality Orientation Inventory (POI) was significantly larger than that produced by other forms of meditation and relaxation, controlling for duration of intervention and strength of experimental design (Alexander, Rainforth, & Gelderloos, 1991). This meta-analysis shows that practice of TM develops realization of the individual's unique potential, and increases capacity for warm interpersonal relationships, thus satisfying some of the motivation for alcohol and drug abuse.

Reviews of some 24 studies show that the Transcendental Meditation technique is highly effective for treating drug abuse in the individual (Alexander, Robinson, & Rainforth, this volume; Gelderloos, Cavanaugh, & Davies, 1991). Moreover, there are eight studies showing its effectiveness for prison rehabilitation (Bleick & Abrams, 1987; Dillbeck & Abrams, 1987).

These meta-analyses and reviews are only a small fraction of the research on the Transcendental Meditation technique. Over 500 studies have been conducted at more than 200 universities and research institutions in 30 countries, all supporting the conclusion that TM reduces stress and increases coherence in the individual.

The First Research on Collective Consciousness:

Research on collective consciousness began in 1974, when researcher Garland Landrith of Maharishi International University (MIU) tested Maharishi's prediction on crime rate in 4 Midwestern cities where 1% of the population had learned the TM technique. He reported that crime rate decreased significantly the year after each became 1% cities, compared with other cities of similar size and geographic location. In the tradition of naming findings after the scientists who discovered them (e.g., the Doppler Effect, the Meissner Effect) this finding has been named the Mahar-

ishi Effect in honor of Maharishi who predicted it and provided the technology to implement it (Borland & Landrith, 1976). Because at least half of crime is alcohol and drug related, it can be inferred from the reduction in crime that alcohol and drug abuse must have decreased also.

Extension of the Original Crime Study: Using FBI data, the original study of four cities was expanded to include all 11 cities over 25,000 population (Borland & Landrith, 1976), and by using data from local police for cities with 10,000 population, it was expanded again to include all 24 cities that had reached 1% of their population practicing the TM technique in 1972 (Dillbeck, Landrith, & Orme-Johnson, 1981). The finding of significant reduction in crime rate was replicated both times. In the second replication, not only did crime rate decrease the year after 1% was reached, but the crime rate trend was lower for those cities over the following six years, controlling for total population, geographic region, college population, unemployment rate, median education level, stability of residence, percentage of persons 15–29 years old in the population, and a number of other variables (see Figure 3).

Causal Analysis of Crime Reduction in 160 Cities:

The most comprehensive studies of the Maharishi Effect on the city level employed causal analyses of crime trends over a period of seven years in random samples of 160 U.S. cities and 80 Standard Metropolitan Statistical Areas (SMSA's), the latter sample representing approximately half the urban population of the U.S. (Dillbeck, Banus, Polanzi, & Landrith, 1988). These studies, which were published in the *Journal of Mind and Behavior*, found that cities and metropolitan areas with higher proportions of meditators in 1973 had reduced crime trends for the next six years. In neither study did the level of crime predict the number of meditators in the population in future years. Thus, TM practice apparently influenced the crime rate but crime rate did not influence TM practice, suggesting that TM practice was the causal element in the correlation between the two. Both studies statistically controlled for virtually all demographic variables known to influence crime, and a significant and stable causal structure was found for both samples, the 160 cities and the 80 SMSA's. These studies provide powerful evidence that the Transcendental Meditation and TM-Sidhi program can significantly reduce the drug-alcohol-crime epidemic.

The TM-Sidhi Program and Reduced Stress in Collective Consciousness: A major breakthrough in the Maharishi Effect research came in 1976 with the development of the more powerful TM-Sidhi program. The incredible power of the TM-Sidhi program on impacting collective consciousness was discovered in 1978 during Maharishi's Ideal Society Campaign, which was conducted in selected

Maharishi effect: Increased Positivity, Decreased Crime THROUGH TRANSCENDENTAL MEDITATION



FIGURE 3. Twenty-four cities in which 1% of the population had been instructed in the Transcendental Meditation program by 1972 displayed significant decreases in crime rate during the next year (1973) and a decreased crime rate trend during the subsequent five years (1972–1977 in comparison to 1967–1972). This finding was in contrast to an overall increase in crime in 24 control cities matched for geographic region, population, college population, and crime rate, statistically controlling for a number of other demographic variables.

provinces in 20 countries. Maharishi sent teams of teachers of the Transcendental Meditation technique to these countries in order to try to inspire 1% of the local populations to learn the technique in to create an ideal society. As it happened, these teachers practiced the TM-Sidhi program together in groups, particularly the powerful Yogic Flying technique (Orme-Johnson & Gelderloos, 1988; Travis & Orme-Johnson, 1990). It was discovered that groups of the order of the square root of 1% of a population collectively practicing the TM-Sidhi program were sufficient to produce a measurable and holistic influence of harmony and integration in the entire population (Dillbeck, Cavanaugh, Glenn, Orme-Johnson, & Mittlefehldt, 1987; c.f. Maharishi Mahesh Yogi, 1986a, p. 76).

For example, the first study of TM and TM-Sidhi groups was conducted on the state level in Rhode Island, and was published in *The Journal of Mind and Behavior*. It found improvements on a quality-of-life index that included crime, deaths, unemployment, *alcohol consumption*, *cigarette consumption*, pollution, motor vehicle fatalities, and accidents (Dillbeck et al., 1987). Thus, this study showed the direct influence of the Maharishi Effect on reducing alcohol and cigarette consumption, as well as indirectly through reduced crime, as well as motor vehicle ac-

cidents and fatalities, since over 50% of accidents are alcohol related. These results suggest that the meditator groups reduced the stress and tension in collective consciousness, so that the population felt more balanced and therefore less impelled to drink and smoke.

Decreased Urban Crime in Metro Manila, New Delhi, and Washington D.C.: Other research conducted in a variety of urban settings around the world has also shown that the TM and TM-Sidhi program can reduce the stress epidemic as seen in reduced crime. Studies published in the *Journal of Mind and Behavior* found that in Metro Manila, Philippines during a period when a TM and TM-Sidhi group was established there from August 1984 to January 1985 there was an 12.1% reduction in weekly crime totals. Similarly, there was an 11% reduction in daily crime totals from November 1980 to March 1981 attributed to a TM and TM-Sidhi group in that city (Dillbeck et al., 1987). A study of weekly violent crime in Washington D.C. found an 11.8% decrease from October 1981 to October 1983 attributed to a group established in Washington at that time. Detailed analysis of other possible causes of the decreases in these cities found that they could not be attributed to changes in police policies or procedures, or to trends and cycles in the data. During the entire time

Reduced Violent Crime in Washington, D.C., 1981–86

THROUGH THE TRANSCENDENTAL MEDITATION AND TM-SIDHI PROGRAM

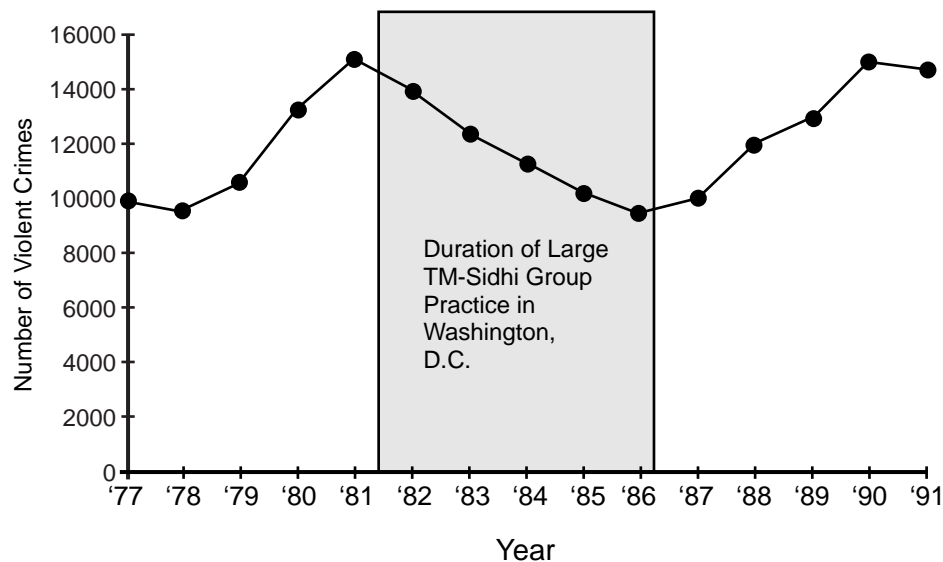


FIGURE 4. From October 1981 to mid-1986, a group of 250 to 400 experts in the Transcendental Meditation and TM-Sidhi program was located in Washington, D.C. During this period, violent crime decreased from 15,045 to 9,423 per year, a reduction of almost 40%. Two research studies conducted during this period found that other variables were unable to explain this effect, and that the reduction in crime occurred at those precise times when the group of TM-Sidhi participants was largest.

the group of TM and TM-Sidhi participants was in Washington from 1981 to 1986, violent crime decreased almost 40%, but returned to a trend of increasing crime after the group left (see Figure 4).

Establishing a U.S. National TM and TM-Sidhi Group: The square root of 1% of a population is a relatively small number, making controlled studies even on the national and world level possible. For example, the square root of 1% of the U.S. population is currently approximately 1,600, and the square root of 1% of the world population is approximately 7,000. Since 1979, a group of Transcendental Meditation and TM-Sidhi participants ranging in size from a few hundred to over 8,000 has gathered twice a day at Maharishi International University in Fairfield, Iowa (pop. 9,648) for the purpose of creating coherence in the U.S. and world. The effects of this group have been studied on the town of Fairfield, Iowa, the U.S., and the whole world.

Fairfield: A study of violent crime in Fairfield found that it has 1/3 the rate of violent crime as other non-suburban towns of 5,000 to 10,000 population in Iowa and 1/7 the rate of violent crime of U.S. towns under 10,000 (see Figure 5, Orme-Johnson & Chandler, 1993). Because of the high association of violent crime and drug and alcohol abuse (Yo-

der in Hazleden Foundation, 1991, p. 52), this finding suggests that the Fairfield community has been relatively protected from the drug-alcohol-crime epidemic (see Figure 5).

Iowa: The research on social stress by Straus, Linsky, and Bachman-Prehn (1989) found that Iowa had moved from the second lowest state on social stress in 1976 to the lowest state (along with South Dakota) in 1982, three years after MIU established its TM-Sidhi group (MIU moved to Iowa in 1974). They attribute low levels of social stress to stability in the social structure and low population density. These are undoubtedly strong contributive factors to reduced crime in the state. However, the research by Reeks (1990) shows that the meditators also had an influence. Conducting a careful time series analysis that controlled for cycles and trends in the data, she found that the group of TM and TM-Sidhi participants at MIU had significant effects on reducing three major indices of social stress in Iowa: crime, unemployment, and traffic fatalities. Using monthly data from 1979 to 1986 she found that increases in the size of the coherence creating group resulted in decreases in social stress the same month or one month later that could not be explained by seasonal changes, business cycles, or holidays. A group of 1,600 TM and TM-Sidhi participants at MIU accounted for 548 fewer crimes

Violent Crime in Fairfield, Compared with Other Small Iowa and U.S. Towns

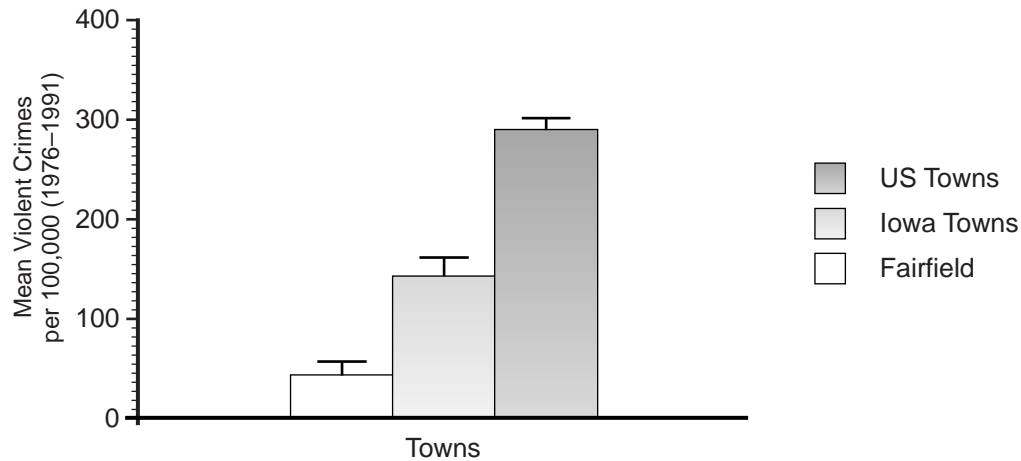


FIGURE 5. Fairfield, Iowa (pop. 9,648) is the home of Maharishi International University (MIU), where a large group of students, faculty, staff, and community members regularly practice the Transcendental Meditation and the TM-Sidhi program twice daily. The average rate of violent crime per year in Fairfield from 1976 to 1991 (the period in which MIU has been in Fairfield for which data is available) was less than 1/3 the average rate of violent crime in other non-suburban towns in Iowa of 5,000 to 10,000 population ($p < .0001$). In addition, the rate of violent crime in Fairfield was approximately 1/7 that of non-suburban towns under 10,000 in the U.S. as a whole ($p < .0001$). The average rate of violent crime of Iowa towns was 1/2 the average rate of all U.S. towns ($p < .0001$). The error bars are standard errors of the mean of yearly crime change from 1976 to 1991. (Source: *Iowa Uniform Crime Report, 1990*. Iowa Department of Public Safety, Plans, Training, and Research Bureau. Wallace State Office Building, Des Moines, Iowa, 50319; and *FBI Uniform Crime Report 1990: Crime in the United States*. U.S. Department of Justice, Federal Bureau of Investigation. U.S. Government Printing Office, Washington, D.C., 20402.)

per month (-5.4%), 5,792 fewer people unemployed (-5.8%) and 13 fewer traffic fatalities (-24.6%) in Iowa.

The United States: More than half of the violent deaths in America due to traffic accidents, suicides, and homicides are drug and alcohol related. A study published in *Social Indicators Research* found a significant effect of the MIU group on U.S. violent deaths per week (homicides, suicides and traffic fatalities) from 1979 to 1985. The square root of 1% of the U.S. population in 1985 was approximately 1,550, and the study found that an increase in TM and TM-Sidhi groups size at MIU from zero to 1,550, corresponded to a decrease of 106 fatalities per week (see Figure 6). The study used time series analysis that controlled for seasonal fluctuations, trends, and drifts in the data (Dillbeck, 1990). A similar time series analysis found a reduction in violent deaths in Canada when the threshold of 1,600 for North America was reached (Assimakis, 1989).

Economic factors, such as unemployment and inflation, are closely linked to drug and alcohol abuse. Using state-of-the-art time series analyses, research presented at the Business and Economics Statistics Section of the American Statistical Association by Cavanaugh and his collaborators

found strong evidence that the MIU TM and TM-Sidhi group significantly reduced the misery index of inflation and unemployment for both the U.S. and Canada, controlling for a number of economic factors (Cavanaugh, 1987; Cavanaugh & King, 1988; Cavanaugh, King, & Ertuna, 1989, see Figure 7 and Savings section below).

Another study of the effects of the group practice of the TM and TM-Sidhi program at MIU on quality of life in the United States used an equally weighted composite index of 12 social indicators from the fields of crime, justice, health, education, economic welfare, creativity, marital stability, and safety (including alcohol consumption per capita and cigarette consumption per capita) for the 25 year period from 1960 through 1984 (Orme-Johnson, Gelderloos, & Dillbeck, 1988). The magnitude of the Maharishi Effect was estimated by the “Maharishi Effect Index” that took into account the percentage of TM participants distributed throughout the United States as well as the square of the number of TM and TM-Sidhi participants in the group practice at MIU.

Analysis of the quality-of-life index showed a virtually continuous downward trend in the overall quality of life in

Maharishi Effect: Decreased Fatalities
THROUGH GROUP PRACTICE OF THE TM-SIDHI PROGRAM

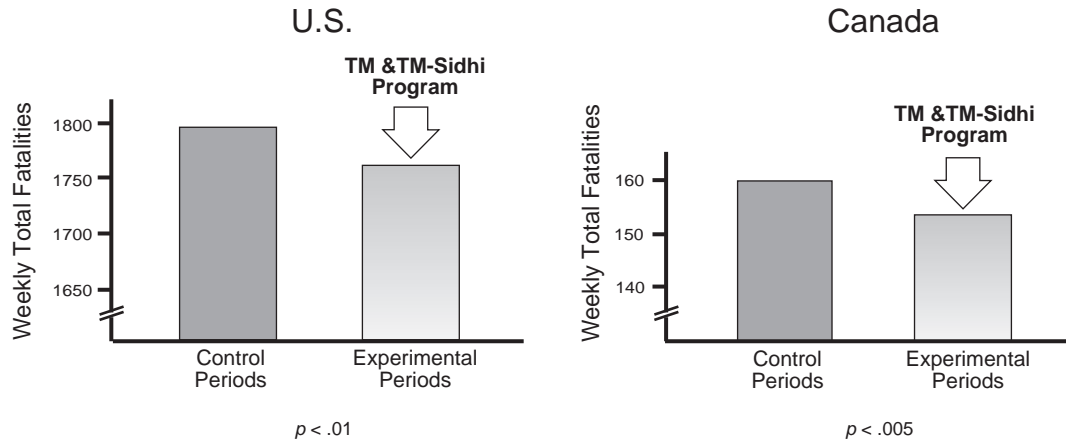


FIGURE 6. Two studies using time series impact assessment analysis found a significant reduction in weekly fatalities due to motor vehicle accidents, homicides, and suicides in the United States (1982–1985) and Canada (1983–1985) during periods in which the size of groups practicing the Transcendental Meditation and TM-Sidhi program at Maharishi International University in Fairfield, Iowa, exceeded the square root of 1% of the U.S. population, or of the U.S. and Canadian population together for an effect seen in Canada. During periods when the size of the group was smaller than the square root of 1% of the U.S. and Canadian populations, fatality rates were higher.

Maharishi Effect: Decreased Inflation/Unemployment
THROUGH GROUP PRACTICE OF THE TM-SIDHI PROGRAM

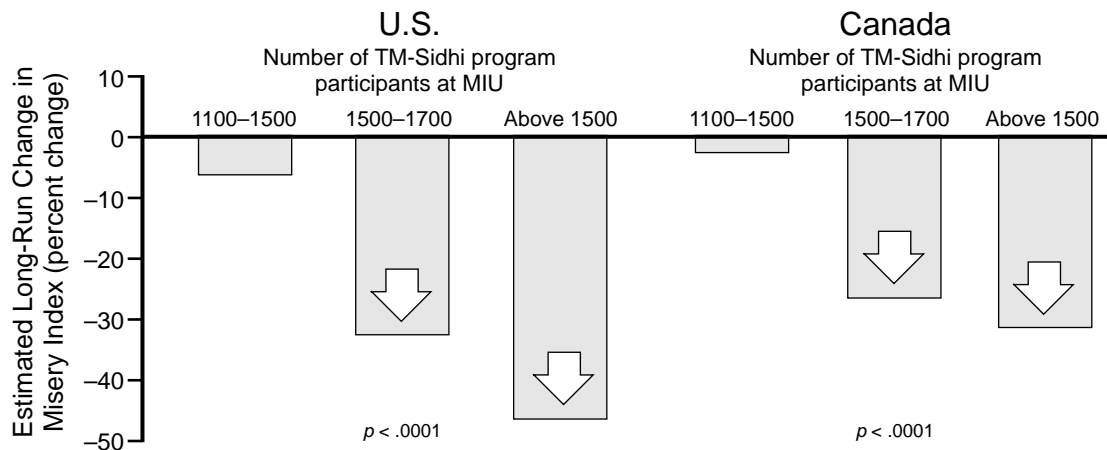


FIGURE 7. This study used time series impact assessment analysis to investigate the relationship between the economic “misery index”—defined as the sum of the monthly inflation rate and unemployment rate—and the number of participants in the group practice of the Transcendental Meditation technique and TM-Sidhi program at Maharishi International University in Fairfield, Iowa. During the period April 1979 to January, 1987, the misery index substantially decreased in the U.S. and Canada during and following months when more than 1,500 people practiced daily in this group program. When the group was over 1700, the effect was even bigger.

the United States from 1960 to 1975. This negative trend began to level off starting in 1975. During the years 1982–1984, when the group of Transcendental Meditation and TM-Sidhi program participants at MIU was large

enough to have a predicted effect on national consciousness, there was a dramatic increase in U.S. quality of life. The total improvement of 7.17% on the quality-of-life index over this three-year period was 5.2 times greater than any three-

year improvement in the prior 22 years. Clearly, an unprecedented change in recent U.S. history had occurred.

A further analysis of the different quality-of-life variables in this study used a multivariate method of analysis of covariance structures (e.g., Jöreskog & Sörbom, 1979; Long, 1983) implemented by the LISREL VI program (Jöreskog & Sörbom, 1986). The covariance structure model combines the approaches of factor analysis and structural equation causal modeling to assess the impact of independent variables on a set of latent variables underlying a group of observed variables. Two quality-of-life factors were found, a general factor and a second factor, and the MIU TM and TM-Sidhi group had a significant effect on both factors, accounting for 80.4% of the variance of the general factor and 60.3% of the secondary factor.

These studies provide strong evidence that the MIU TM and TM-Sidhi group has significantly reduced the drug-alcohol-crime epidemic in the United States, as seen in a reduction of many alcohol and drug related variables, including those cited above in research involving deaths due to suicides, homicides, and traffic fatalities, a reduction in inflation and unemployment, and an improvement in the general quality of life, including reduced alcohol and cigarette consumption.

The International Peace Project in the Middle East:

One of the major symptoms of the stress epidemic is international conflict. An experimental test of the application of the Maharishi Effect on international conflict in Lebanon and national quality of life in Israel was published in the *Journal of Conflict Resolution* (Orme-Johnson, Alexander et al., 1988). This study took place in 1983 in Israel during the war in Lebanon for a two-month period (August and September). The project was funded in part through a grant in honor of William Ellinghaus, then president of American Telephone and Telegraph Company, from the Fund for Higher Education. Predictions were lodged in advance with scientists in the U.S. and in Israel. The variables, such as traffic accidents, crime rate, and fires, all of which are major problems in Israel, were selected because they had been used in previous experiments. As a measure of the war in Lebanon, two war variables, war deaths and war intensity, were derived by content analysis of a major newspaper and other media sources using a scaling method modeled after Azar's (1982). Other variables included the Israeli national stock market and the national mood from content analysis of a major newspaper. All variables were derived from publicly available data sources. All are highly relevant to the stress epidemic of which drug and alcohol misuse are a part.

Figure 8 shows that the overall composite index composed of all the variables mentioned above and the size of the coherence-creating group closely track one another. Sta-

tistical analysis using the Box-Jenkins (1976) ARIMA (autoregressive, integrated, moving, averages) time series methods of transfer functions showed that change in the size of the coherence creating group significantly led change in the composite index by one day, controlling for any seasonal fluctuations in the data, as well as controlling for changes in the weather and holidays. This means that the up and down variations in the size of the coherence creating group were followed by a corresponding variation in the overall quality of life in the region, supporting a causal interpretation.

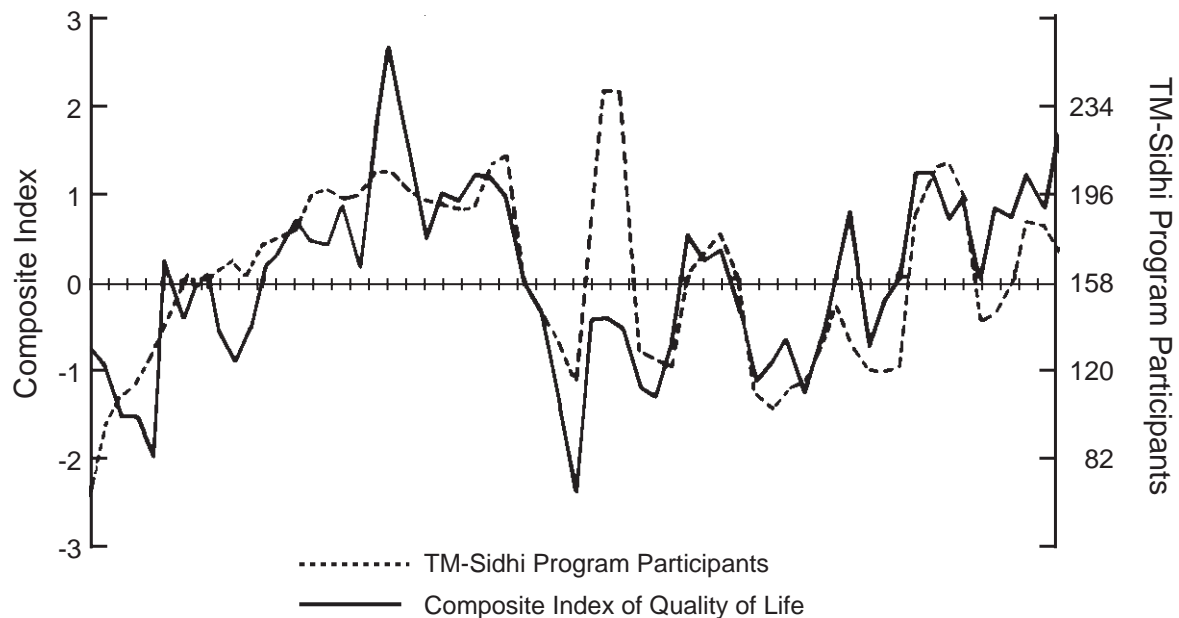
Another very interesting finding in this study was that when the individual variables were combined into a composite variable, the results were the clearest, as seen in Figure 8, which shows the clear covariance between the composite of all the raw data and the coherence creating group. Adding the individual variables together is a type of signal averaging that enhances the common variance. As a result, the composite of all the variables most clearly shows their common variance. The finding that changes in the composite variable correspond most clearly to changes in the coherence creating group is strong empirical evidence that the common variance underlying these diverse social processes was in fact generated by the coherence creating group functioning at a fundamental level of natural law (Orme-Johnson, Alexander et al., 1988, p. 806). This study demonstrates that the TM and TM-Sidhi program address the complex of stress in society at the basis of the drug and alcohol epidemic.

Replication of Reduced War in Lebanon: Experimental replication is the most powerful test of the reliability of a new discovery. These dramatic results on the Lebanon war have now been replicated seven times with a statistical probability of less than 10^{-19} , or one in ten million trillion, that the results were due to chance (Davies & Alexander, 1989). This study, which was presented at the annual conference of the American Political Science Association in 1989, found that during the seven coherence creating assemblies large enough to have a predicted impact on the war in Lebanon, war fatalities decreased by an average of 71%, war injuries decreased by 68%, and cooperation among antagonists increased by 66%. The degree of statistical certitude of this finding is unheard of even in the physical sciences, lending strong support to the reliability and legitimacy of the theory and empirical evidence of the Maharishi Effect.

The Global Maharishi Effect: Drug abuse is a global phenomenon, with drug trade being a major international problem. For this reason, the Maharishi Effect must be established on a global level to eliminate the stress epidemic completely. The global Maharishi Effect was first demonstrated in late 1983.

Maharishi Effect: Improved Quality of Life and Reduced Conflict

THROUGH GROUP PRACTICE OF THE TM-SIDHI PROGRAM



$p = .018$

FIGURE 8. Based on previous research, scientists predicted that the collective practice of the Transcendental Meditation and TM-Sidhi program by a group in Jerusalem would increase positive trends and decrease negativity in the Middle East. The sociological parameters measured were lodged in advance with an independent review board of scientists in the U.S. and Israel. This study indicated that increasing the numbers of participants engaged in Maharishi's Transcendental Meditation and TM-Sidhi program improved the quality of life in Israel as measured by an index comprised of decreases in crime rate, traffic accidents, fires, and the number of war deaths in Lebanon, and by increases in the national stock market and improvements in national mood.

After seeing the results of the first study in the Middle East, even before the evidence of extensive replication was amassed, Maharishi inspired an assembly of 7,000 practitioners of the Transcendental Meditation and TM-Sidhi program, the square root of 1% of the world's population, in order to give the world a "Taste of Utopia." In addition, he created a tradition of holding large assemblies every quarter of the year in the hopes of raising world consciousness and demonstrating effects that would inspire the world leadership to establish permanent coherence creating groups as a sustained peace keeping forces in every country.

A study of the effects of these assemblies on worldwide international conflicts, terrorism, and economic confidence was presented at the American Political Science Association and American Psychological Association in 1989 and 1990, respectively (Orme-Johnson, Dillbeck, Alexander, Chandler, & Cranson, 1989; Orme-Johnson, Cavanaugh et al., 1989). This study found that on the three oc-

casions when the world assemblies approached the 7,000 threshold needed for global coherence, international conflicts decreased by more than 30%, according to a content analysis of the *New York Times* and *London Times*, and that international terrorism decreased by more than 70%, using data compiled by the Rand Corporation. In addition, the World Index of international stock prices in the 19 major industrial countries increased significantly, indicating increased economic confidence. As in other studies, time series analysis ruled out the possibility that the results were spuriously due to cycles, trends, or drifts in the measures used. The study also showed that the results were not due to changes that usually occur during the year-end holiday seasons when two of the assemblies were held.

This study provides evidence of the application of the TM and TM-Sidhi program to reduce global stress as a possible means to treat the global epidemic of drug and alcohol abuse.

Improved U.S./Soviet Relations: Drugs are often an international problem. The evidence that the Maharishi Effect improves international relations is important to finding a lasting solution to the drug abuse problem.

International tensions are the apex of the stress epidemic. The most dramatic political change of the twentieth century is the warming of relations between the superpowers with its enormous worldwide implications. In some of the studies reviewed above, the Maharishi Effect had a calming effect in trouble-spot areas in which the Americans and Soviets were involved on opposite sides, indicating indirectly and sometimes directly that the coherence creating groups soothed the relations between the superpowers. This evidence is further strengthened by studies of the statements of heads of state. For example, one study analyzed statements by the President of the United States (President Reagan) published by the U.S. government's Office of the Federal Register of National Archives and Records Administration in the *Weekly Compilation of Presidential Documents* from April 1985 to September 1987. The study found that increased coherence in U.S. national consciousness through the Maharishi Effect was reflected in the increased positivity of the President's statements about the USSR.

Another study on the effects of the MIU TM and TM-Sidhi group on U.S.-Soviet relations used the data base

from the Zürich Project on East-West Relations, which has tracked U.S.-Soviet relations by content analysis of news events from 1979 to 1986. When the group reached the threshold of the square root of 1% of the U.S. population (1,500–1,700), U.S. actions towards the Soviets began to become significantly more positive. U.S. behavior towards the Soviets became even more positive when the MIU group was over 1,700, and moreover, Soviet behavior towards the U.S. also became significantly more positive when the group was largest (Gelderloos, Cavanaugh, & Davies, 1990). This data is the first empirical demonstration of why East-West relations have suddenly improved (see Figure 9).

In conclusion, the research on the Maharishi Effect shows that it reduces stress and increases coherence throughout all levels of society—individual, city, state, nation, and international, treating the stress epidemic systematically. The following section reviews the financial implications of utilizing this technology.

FINANCIAL IMPACT OF THE TRANSCENDENTAL MEDITATION PROGRAM

Expenses due to Drug and Alcohol Abuse: The economic implications of this technology to “vaccinate” the population against stress are enormous. Just as the stress epidemic degrades the quality of life in every sphere of in-

**Maharishi Effect: Improved East-West Relations
 THROUGH GROUP PRACTICE OF THE TM-SIDHI PROGRAM**

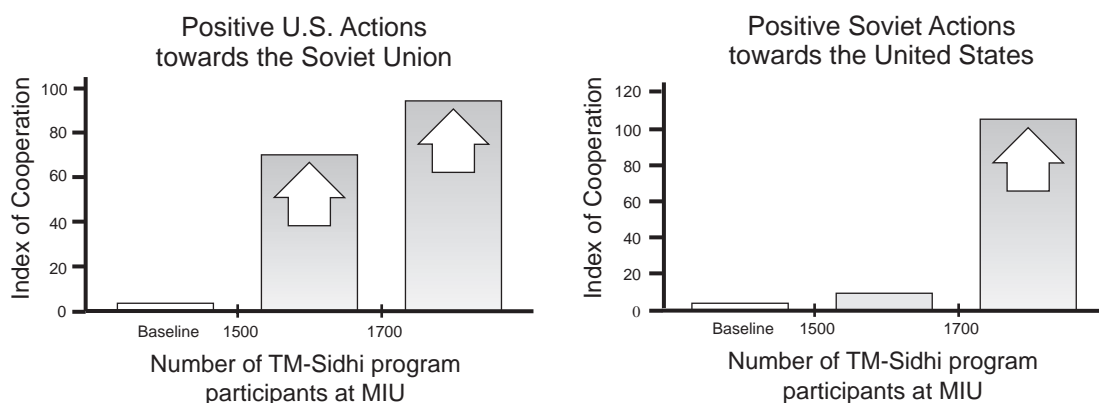


FIGURE 9. This study investigated the contribution of a large coherence-creating group at Maharishi International University in the U.S. toward improvement in relations between the U.S. and the Soviet Union from 1979 to 1986. The study was of monthly ratings of cooperation and conflict, obtained from independent investigators (the Zürich Project on East-West Relations) of all interactions of the U.S. towards the Soviet Union and of the Soviet Union towards the U.S. Time series analysis showed that during the months following periods when the size of the coherence-creating group was above the predicted thresholds (i.e., above 1,500 and 1,700), there was a significant improvement in U.S. actions towards the USSR. In months after the group size was above 1,700, Soviet actions towards the U.S. also significantly improved. The overall impact of the coherence creating group on the U.S.-Soviet interaction was highly significant ($p < .00001$).

dividual and collective existence, so too does it deplete personal and national resources in every area. Drug and alcohol abuse, two of the major symptoms of the epidemic, cost the nation an estimated \$562 billion per year, almost 10% of the GNP. Table 1 shows some of the majors sources of expenditures that can be attributed to drug and alcohol abuse.

The national health bill in 1993 is likely to exceed \$900 billion. In the U.S., cigarette smoking accounts for 400,000 deaths per year (McGinnis & Foege, 1993), including 21% of all coronary heart disease, and 87% of lung cancer, two of the leading causes of death. In addition, smoking contributes substantially to chronic bronchitis, emphysema, and lung cancer, which are major causes of disability (U.S. Department of Health and Human Services, 1990, p. 136). In 1990, 25.5% of the U.S. population smoked, which although down from a high of 42% in 1955, still means that 64 million people have the addiction. From one-third to one-half of these people will die from smoking, many in the prime of life, resulting in a mean loss of 23 years of life (Peto et al., 1992).

An exhaustive survey conducted by the U.S. Department of Health and Human Services (1990b) found that a small proportion of the population, which for the most part consists of users of tobacco and drugs, and abusers of alcohol, account for 40%–70% of all premature deaths, a third of all cases of acute disability, and two-thirds of all cases of chronic disability. Another study found that simply removing smoking and drinking could reduce health utilization by 25% (Scheffler & Pringer, 1980). Studies have shown that 10% of the population account for 75% of the nation's health care costs (Garfinkle, Riley, & Iannac-

chione, 1988) and the high cost people tend to be smokers and drinkers (Zook & Moore, 1980). On the basis of these studies, it is conservatively estimated that smoking, alcohol, and drug use account for 33% of the medical care expenditures, or \$300 billion per year.

The cost of crime in the U.S. in 1990 was \$200 billion—\$80 billion in federal, state and local government expenditures for the criminal justice system, police, and corrections (BJS, 1993; Congressional Budget Office [CBO], 1990), and another \$120 billion in victim expenses for medical and lost property (Cohen, 1990). If drugs and alcohol account for half of crime, then they induce a financial burden to society of over \$100 billion per year for their effects on crime alone.

An additional expenditure from drug and alcohol related crimes is for lost productivity of those who are in prison. There are currently 1.2 million inmates in prisons and other correctional institutions (BJS, 1992, pp. 2, 3), which is approximately 1% of the workforce. If half of crime is attributed to drugs and alcohol (Yoder, 1991, p. 52), then so too is half of the prison population. The loss of .5% of the workforce translates into a 1.25% loss in the GDP, which is \$70 billion (CBO Report, 1990).

If 15% of the population suffers from drug and alcohol addiction, with a mean treatment expense of \$10,000 per person, this accounts for another \$38 billion. The expense of alcohol and drugs to corporations is estimated to be \$93 billion (Harwood et al., 1984; Rice et al., 1990). Alcohol and drugs account for about 50% of motor vehicle accidents, accounting for another \$54 billion. In addition, welfare expenses to sustain individuals who are either im-

TABLE 1.—US EXPENDITURES PER YEAR DUE TO DRUG AND ALCOHOL ABUSE

Source of Expenditure	Total Expense per Year (\$ Billions)	% Due to Drugs and Alcohol	Expense Due to Drugs and Alcohol (\$ Billions)
Health	\$900.0	23%*	\$207.0
Crime	\$200.0	50%	\$100.0
Corporations	\$93.0
Loss of 1% of workforce due to imprisonment	\$140.0	50%	\$70.0
Treatment Cost	100%	\$38.0
Auto Insurance Losses Paid ¹	\$107.9	50%	\$53.9
Total	\$561.9

Source: Extrapolated from 1987 figures from The National Underwriter Co., Cincinnati. Found in *Statistical Abstract*.

* This number includes the effects of smoking on health.

prisoned or on treatment due to substance abuse is another source of expenditures.

Table 1 is not an exhaustive survey of all the expenditures of due to drugs and alcohol, but gives a sense of how this epidemic drains our national financial resources. The funds that would be available from reducing the problem even by half could more than pay off the national debt in a few years.

The Implementation of a Stress-Immunization Program: Maharishi (1986b) has offered to the national governments of the world a three-step plan for reducing stress in world, national and city consciousness in order to create world peace: 1) create a group of 10,000 experts to create coherence for the whole world; 2) create a national coherence creating group; and 3) create coherence for each city. This plan can be adapted to the problem of immunizing the population against drug and alcohol abuse because the drugs, alcohol, and international conflicts are different symptoms of the same worldwide stress epidemic. It does not matter for which immediate purpose the program is implemented; it will also take care of all other stress-related problems as a side effect.

Coherence is needed on the world level because the drug-alcohol epidemic is a worldwide problem. A group of 10,000 is needed because that exceeds the square root of one percent of the world population, the number needed to create global coherence. It is logical that a large group to create world coherence be located in the U.S. because of the U.S.'s uniquely powerful position in the post-Soviet era. In addition, a 10,000 group located in the U.S. would also take of the national level, step 2 of the plan.

What remains is to implement a program for the city level. In late 1992, a group of experts in this technology based in the Netherlands representing business corporations and universities in 32 countries offered a plan to reduce and eliminate crime to the city governments of 60 major American cities. The plan, presented to the public in newspaper ads appearing in the cities, outlined a two to six month trial period of evaluating the effects on reducing crime of groups of Transcendental Meditation and TM-Sidhi participants. We recommend that 50 such coherence creating groups of 1,000 individuals be established in the major urban areas of the US.

Thus the *Stress-Immunization Program* for stress-immunization of the United States consists of one large group of 10,000 experts in the Transcendental Meditation technique and TM-Sidhi program and 50 groups of 1,000 each located in the major urban areas. The financial impact evaluation presented in the next section is a conservative estimate based on the results of previous research of the effects of this Stress-Immunization Program.

Savings from the Stress-Immunization Program:

Research on collective consciousness shows that the Stress-Immunization Program would affect virtually all problems of society because they are all symptoms of stress in collective consciousness. The cost-benefit calculated from its effects of the economy, health, crime, and automobile insurance alone is \$478.5 billion a year.

Unemployment: Drug and alcohol abuse increase unemployment and unemployment increases drug and alcohol abuse. Three separate researchers in seven studies have found highly significant effects of TM and TM-Sidhi groups on unemployment. In the most rigorous of these studies, Cavanaugh and King (1988) have shown that the coherence creating group at MIU was responsible for 54% of the total decline in the United States misery index (an aggregate of inflation and unemployment) from its peak in 1980 to the end of the sample period in 1988. (In recent years the participation in the program at MIU has declined. In 1992 it was at the lowest level since 1982, with a daily average of only 1,362 participants, well below the predicted threshold of 1,600 needed for the U.S.). During the period of Cavanaugh's study (1980 to 1988), the misery index dropped a total of 14.1 points. The amount of the change in unemployment that can be attributed to the coherence creating group of 1,600 can be estimated to be 0.384 points. With a group of 10,000, which should have over 6 times the effect, it can conservatively be estimated that unemployment would drop 1% per year until a basic minimal level of about 4.5% unemployment is reached. (This minimum level is estimated by economists to be from 3.5% to 5.5%, below which it is difficult to go because of people changing jobs, etc.). Given the current unemployment rate of over 7.5%, there is now room for a 3% decrease in unemployment, which would increase the GDP 2.5% each year over four years for an increase of \$728.8 billion. Table 2 shows the results of a 1% decrease in unemployment projected for the first year of the Stress-Immunization Program. The GDP would increase \$156.4 billion. Based upon federal figures, it is assumed that the financial benefit to the private sector in wages, corporate profits, and other taxable income would account for slightly over \$120.4 billion (CBO Report, 1990). This would result in \$51 billion benefit to the Federal government due to increased tax revenues, decreased federal outlays, and decrease in the deficit. Moreover, state governments would benefit by \$6.9 billion due to sales and gross receipts, income tax revenues, and decreased outlays for unemployment.

Health: Since 1970, US medical expenditures have grown 11.6% annually, 2.9 percentage points faster than the GNP (Jencks & Schieber, 1991). In the late 1940s medical payments were less than 5% of the GNP. By 1991 these expenses rose to 13.5% of the GNP or \$838.5 billion. In

TABLE 2.—SAVINGS FROM A 1% REDUCTION IN UNEMPLOYMENT DUE TO THE STRESS-IMMUNIZATION PROGRAM

Source	1993 (\$ Billions)
Private Sector: 2.5% increase in GDP (U.S. 1993 GDP = \$6,255 billion)	\$156.4
Private Sector: Increased Wages, Corporate Profits, and other Taxable Income from Increase in GDP	\$120.4
Federal Government: Increased Tax Revenues ¹	43.0
Federal Government: Decreased Federal Outlays ¹	8.0
Federal Government: Decrease in Deficit ¹	51.0
Federal Government: Total Increase	\$ 51.0
State Government: Sales and Gross Receipts ²	3.4
State Government: Income Tax Revenues ²	3.4
State Government: Decreased Outlays ³ (Unemployment Benefit)	.1
State Government: Total Increase	\$ 6.9
Total (Private, Federal and State)	\$178.3

¹ Source: The Economic and Budget Outlook: Fiscal Years 1994–1998. Congressional Budget Office Report.

² Source: U.S. Bureau of the Census, State Government Tax Collections in 1985.

³ Source: U.S. Employment and Training Administration, Unemployment Insurance Statistics and Annual Report of the Secretary of Labor.

1993 medical costs are likely to exceed \$ 900 billion. Rising medical expenditures impose severe strains on public budgets, business expenses, and individual solvency.

A published study by Orme-Johnson (1987) showed that 2,000 individuals practicing the TM program over a five-year period consistently had less than half the number of doctor visits and hospitalizations than other groups of comparable age, gender, profession, and insurance terms. In addition, the TM practitioners had markedly fewer incidents of illness in *all* medical treatment categories, including 87% less hospitalization for both heart disease and nervous system disorders, 55% less for cancer, and 73% less for nose, throat, and lung problems.

A number of studies on the Maharishi Effect and quality-of-life indicators have found that the incidence of disease can be decreased simply by increasing coherence in collective consciousness. For example, one result of the three-week coherence creating assembly of over 7,000 participants, which began in December 1983, was a 15% drop in incidence of infectious diseases compared to the three-week periods just before and after the assembly. Moreover, an analysis of the same three-week period for the previous five years revealed a 32% drop in the total

number of infectious diseases during the assembly compared to the median number of cases for that period in the previous 5 years (Orme-Johnson et al., 1989).

Still other studies on the Maharishi Effect have shown reductions in disease, accident rates, hospital admissions, infant mortality, and so on, with decreases ranging from just under 5% to 11% (reviewed in Orme-Johnson & Dillbeck, in press). Moreover, the long-term effects of having a 10,000 group as well as groups for the major urban areas of the U.S. could be several times greater than indicated by these short-term studies, which used much smaller groups, because sustained larger groups would also have the effect of increasing health promotion/disease prevention awareness and would thereby contribute to the prevention of disease.

Based on all of the foregoing, a projected 33% reduction in disease is chosen as a conservative, realistic estimate of the potential long-range impact of a sustained a group of 10,000 and 50 groups of 1,000 people in urban areas collectively practicing the TM and TM-Sidhi program. Based on information from experts at the Congressional Budget Office, a 33% reduction in incidence of disease would translate into a 30% reduction in different areas of health payments. Table 3 summarizes the financial benefit from

TABLE 3.—SAVINGS FROM A 30% REDUCTION IN HEALTH CARE EXPENDITURES
PER YEAR DUE TO THE STRESS-IMMUNIZATION PROGRAM

Source of Health Care Expenditures	Expenses (\$ Billions)	Expenses with 30% Savings	Savings (\$ Billions)
Private Sector Projected Health Care Claims (1993) ¹	\$469.7	\$328.8	\$140.9
Federal Government Medicare ²	\$128.8	\$90.2	\$38.6
Federal Government Health Care Services ²	\$96.9	\$67.8	\$29.1
Federal Government Total			\$67.7
State and Local Projected Health Care Costs ³	\$115.2	\$80.6	\$34.6
Total Savings			\$243.2

¹ These figures were calculated using information from the following source: Health Care Financing Administration, Office of the Actuary: Data from the Office of National Cost Estimates. The average increase of 8.5% for past years 1986–1988 was assumed for years after 1988, using the 1988 base amount of \$312.4 billion.

² These figures are from The Budget for Fiscal Year 1993, CBO Report 1992, Table 1-2.

³ These figures were calculated using information from the following source: Health Care Financing Administration, Office of the Actuary: Data from the Office of National Cost Estimates. The average increase of 10.6% for years 1986–1988 was assumed for years after 1988, using the 1988 base amount of \$69.6 billion.

such a reduction in disease.

Crime: Our penal system is strained both in financial terms and in terms of the human tragedy involved in warehousing hundreds of thousands of potentially productive human beings. Bureau of Justice data reveal that at the end of 1988, more than 3.7 million adults in the United States—2 percent of the adult population—were under the care or custody of probation, parole, jail, or prison authorities (BJS Bulletin, 1989: *Probation and Parole in 1988*). The number of prisoners under the jurisdiction of federal and state correctional authorities at year-end 1989 reached a record 703,687, an increase of 113.4% since 1980. The number of inmates increased at a rate of 12.1% in the first half of 1989, requiring the addition of 1,500 new beds per week nationally (BJS Bulletin, 1989: *Prisoners in 1989*). In addition, as of June 30, 1988, local jails throughout the United States held 343,569 prisoners, 54% more than in 1983 (BJS Bulletin, 1989: *Census of Local Jails*). The total number of American citizens now incarcerated at any one time well exceeds one million.

Occupancy in federal prisons is currently 60% over capacity. Construction is now underway to provide 67,347 more beds in existing prisons or new prisons. In addition, 88,847 more beds are being planned. The national average

cost per bed in a new facility is \$53,663; in an existing facility, \$24,881 (Corrections Yearbook, 1989).

In 1988, agencies spent more than \$20,000 a year per inmate, including legal fees (Corrections Yearbook, 1989). This figure excludes law enforcement costs, court costs, welfare and other social programs for the family of inmates, and costs to victims. Most of the costs of crime are borne at the state and local level. The federal share is between one-eighth and one-ninth of the total \$12.6 billion in 1991, and is expected to rise to \$14.6 billion in 1995. It costs over \$100 billion annually to maintain the U.S. criminal justice system. The impact of violent crime cannot, of course, be measured in monetary loss alone. This tremendous financial burden only represents a fraction of the human expense of criminal activity and does not take into account the intangible costs resulting from loss of life, threat of force, serious personal injury, fear, and psychological trauma.

In 1987, state and federal prisons released 232,871 prisoners (BJS, 1989, *Sourcebook of Criminal Justice Statistics, 1988*). Approximately 30% of those released from prison commit new offenses and are returned to prisons within the first three years of parole. Within the next seven years, an additional 16.25% are predicted to return to prison (BJS Bulletin: *Examining Recidivism*). Once in-

TABLE 4.—SAVINGS DUE TO A 50% REDUCTION IN CRIME PER YEAR FROM THE STRESS-IMMUNIZATION PROGRAM

Source	Projected New Expenses (\$ Billions)	Savings (\$ Billions)
New Prison Beds	\$6.0	\$3.0
New Incarcerations	\$3.0	\$1.5
Private Sector	\$15.0	\$7.5
Total		\$12.0

mates are returned to prison, they will cost taxpayers an annual \$16,315 per inmate.

More than 2,000 adult inmates in U.S. correctional institutions and several hundred incarcerated juveniles in eight facilities have learned Maharishi's Transcendental Meditation. The TM program has been found in controlled studies with inmates to reduce anxiety, increase autonomic stability—a physiological indicator of resistance to stress, decrease neuroticism and psychopathology, increase ego development, and reduce recidivism (Alexander, 1982; Bleick & Abrams, 1987; Dillbeck & Abrams, 1987, review).

A recent nationwide application of TM in the prisons of Senegal showed particularly dramatic results. Between 1987 and 1988, 12,000 prisoners in Senegal were instructed in the TM technique. After a general amnesty to relieve prison overcrowding, only 2% recidivated over a six-month period, compared to the usual 90%. The government was able to close three prisons as a result. In addition, the TM program has been cited by the World Health Organization as an effective strategy for treating mental illness and enhancing mental health.

Of greatest relevance are the 17 studies on the Maharishi Effect indicating that crime rate decreases more than 10% when the requisite numbers gather together to practice the TM and TM-Sidhi program. The effect of coherence creating groups on crime is the most documented of the Maharishi Effect findings (reviewed in Orme-Johnson & Dillbeck, in press).

The average crime drop seen in the 17 studies assessing the impact of the Maharishi Effect was 10.5%, in most cases using a group that is just over the square root of one percent of the population. Given that the Stress-Immune Program calls for a 10,000 group, which is six times larger the square root of one percent of the U.S. population, as well as 50 smaller groups of 1,000, it is conservatively estimated that the effects of the Stress-Immune Program would be a 50% reduction of crime and eventual elimination of crime in five years.

Assuming the average 50% drop in crime from the Stress-Immune Program produces an equivalent 50% drop in new incarcerations, then the expected \$6 billion in new bed expenditures would be reduced by \$3 billion at the federal and state level. Also, assuming that the average 150,000 new incarcerations per year are reduced by 50% and that the average cost per inmate per year is \$20,000, there would be a savings of \$1.5 billion at the federal and state level. In addition, private financial losses suffered by crime victims total approximately \$15 billion per year. We should see the most immediate impact of a lower crime rate in reducing the private costs of crime. With a 50% decrease in crime, we can estimate that savings in this area would amount to \$7.5 billion per year. The total savings from crime reduction from the program would be \$12 billion (see Table 4).

Automobile Accidents: The benefits of the Stress-Immune Program to the United States life, property, and liability insurance industry would be sizable. Such benefits would, sooner or later, be passed on to the public as a whole in the form of decreased premiums.

A number of studies have shown that the Maharishi Effect results in decreases in traffic accidents, traffic fatality rates, air fatalities, and other fatalities. In the area of automobile insurance alone, nine research studies have shown that when a population has the required number of people in the coherence creating group, the Maharishi Effect pro-

TABLE 5.—SAVINGS FROM A 50% REDUCTION IN AUTOMOBILE ACCIDENTS DUE TO THE STRESS-IMMUNIZATION PROGRAM

	1993
Premiums earned ¹	136.23
Losses Paid ¹	107.89
Savings	\$53.9

Source: Extrapolated from 1987 figures in The National Underwriter Co., Cincinnati. Found in *Statistical Abstracts*.

TABLE 6.—SUMMARY OF FINANCIAL BENEFIT PER YEAR
DUE TO THE STRESS-IMMUNIZATION PROGRAM

	Private	Federal	State	Total
Economy	\$120.4	\$51.0	\$6.9	\$178.4
Health	\$140.9	\$67.7	\$34.6	\$243.2
Crime	\$7.5	\$.6	\$3.9	\$12.0
Auto Insurance	\$53.9	\$0.0	\$0.0	\$53.9
Total Savings from a 10,000 Group	\$322.7	\$119.3	\$45.4	\$487.5

duces significant decreases in automobile accidents, including traffic fatalities. This analysis will focus on the projected benefits from decreased automobile accidents because research statistics are available in this area. The Maharishi Effect should, however, account for equal reductions in all other types of accidents as well.

Three studies have found decreases in traffic accidents when the coherence creating group in the area was large enough, for an average decrease of 17.6%. Six other studies have found decreases in traffic fatalities correlated with coherence creating groups. These studies found decreases ranging from 6.5% to 41.6% with the average decrease found being 16.61% (reviewed in Orme-Johnson & Dillbeck, in press).

We can therefore conservatively estimate a decrease of 50% in automobile accidents from a sustained coherence creating group of 10,000. Table 5 shows the premiums earned and losses paid by automobile insurers in 1987, and then projected to 1993 at a 10% annual increase. The savings enjoyed by these companies (50% of those losses paid) from the Stress-Immunitization Program is then shown.

Summary of Financial Benefits from the Stress-Immunitization Program: Table 6 summarizes the savings to the private sector, federal government, and state governments from the Stress-Immunitization Program. The savings from the program would be \$322.7 billion for the private sector, \$119.3 billion for the federal government, and \$45.4

billion for the state governments, for a total saving of \$487.5 billion (see Table 6).²

The expense of the Stress-Immunitization Program will be only a small fraction of the financial benefits. If every participant in the project receives a good salary according to the national standard of living, and if facilities are built or rented for group practice of the Transcendental Meditation and TM-Sidhi Programme, the cost of the program could be on the order of one or two per cent of the financial savings to the country. For precise details about costs of the program, individuals in positions of leadership should contact the international organizations of Maharishi Mahesh Yogi, such as Maharishi Vedic University in Vlodingen, The Netherlands.

Level of Public Interest in the Program: A recent national survey by the Bruskin/Goldring Research company indicates that 52% of the population felt that government, insurance agencies and private companies should provide more information on the use of Transcendental Meditation to reduce stress-related problems, such as crime, in the larger population, to encourage research on it, and/or encourage greater use of this technique (Bodeker, 1992).

CONCLUSION

Prior to the rise of epidemiology as the basic science of preventive medicine, epidemics of infectious diseases desolated huge populations. Then the causes of these epidemics were identified, new technologies to prevent the problem were discovered, experimental field trials were carried out, and practical public health programs were implemented, saving millions of lives (Friedman, 1985). The present proposal to use the Transcendental Meditation and TM-Sidhi program to control and eventually eliminate the drug and alcohol epidemic has followed this classical pattern.

First, epidemiological analytic research strongly supported the hypothesis that social stress is a causative factor in the drug-alcohol epidemic. A new theory that extended

² **Defense:** The studies reviewed in the Research section indicate that decreased stress and rising coherence in world consciousness produced by the Maharishi Effect precipitated the most dramatic political reorientation of the past 50 years. The extensive political changes in Eastern Europe and the Soviet Union have virtually put an end to the Cold War and have great potential for reducing defense expenditures.

Nevertheless, the current crises in the Middle East, the Balkans, and Somalia demonstrate the urgent need for the immediate establishment of a 10,000 group to continue these very positive trends. The Stress-Immunitization Program of a permanent group of 10,000 experts and 50 groups of 1,000 in the U.S. would secure world peace and would thus bring significant but at present incalculable benefits to the United States' ability to fulfill the goals of our nation's military at an ever decreasing cost.

previous concepts of social influence was postulated, holding that stress is transmitted systemically through an underlying field of collective consciousness. It was proposed that Transcendental Meditation was a powerful means of stress reduction, and its ability to reduce stress has been convincingly demonstrated at the behavioral/psychological level (Alexander et al., 1991; Eppley et al., 1989) physiological level (e.g., Dillbeck & Orme-Johnson, 1987; Jevning et al., 1992) and molecular level (e.g., Walton & Levitsky, 1993). Retrospective, observational research then found that in urban areas in which 1% of the population practiced Transcendental Meditation, the multiple symptoms of stress in collective consciousness were significantly reduced (e.g., Dillbeck et al., 1981, 1988). Resorting to an even more powerful technology, the TM-Sidhi program, field experiments were then conducted in which coherence creating groups were introduced into populations, and it was found that symptoms of social stress were consequently reduced (e.g., Dillbeck, 1990; Dillbeck et al., 1987, 1988; Orme-Johnson et al., 1988). Now, over 40 studies have demonstrated the effectiveness of this technology to reduce the societal correlates of drug and alcohol abuse such as crime, traffic accidents, and unemployment, and in some studies, to directly reduce alcohol and tobacco use as part of quality of life indices (Orme-Johnson & Dillbeck, in press). The financial analysis indicates an enormous financial savings from implementation of the Stress-Immunitization Program.

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