PAPER 337

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

DAVID W. ORME-JOHNSON,[1] KENNETH L. CAVANAUGH,[2] CHARLES N. ALEXANDER,[1] PAUL GELDERLOOS,[1] MICHAEL DILLBECK,[1] AUDRI G. LANFORD,[1] and TANIOS M. ABOU NADER[3]

[1] Department of Psychology,
 Maharishi International University, Fairfield, Iowa, U.S.A.

[2] Department of Management and Public Affairs,
 Maharishi International University, Fairfield, Iowa, U.S.A.

[3] Department of Nutrition and Food Science,
 Massachusetts Institute of Technology, Cambridge, Massachusetts, U.S.A.

Research completed July 1984.

The collective practice of the Maharishi Technology of the Unified Field by one group of 7,000 experts—the square root of one percent of the world's population—assembled at Maharishi International University, U.S.A., was found to create coherence in the entire world consciousness, leading to an improved quality of life throughout the world. This was reflected in increased progress by heads of state in reversing negative trends and accelerating positive trends; increased harmony in international affairs; increased worldwide economic prosperity, as expressed in the simultaneous rise of stock markets in many different countries; decreased traffic fatalities; decreased air traffic fatalities; increased creativity, as measured by increased numbers of patent applications; decreased incidence of infectious diseases; and decreased crime.—EDITORS

The systematic accumulation of scientific evidence demonstrating that the Maharishi Technology of the Unified Field improves the quality of life on the city, state, and national levels inspired Maharishi International University (MIU), located in Fairfield, Iowa, U.S.A., to undertake a global experiment to improve the quality of life in the world. Previous research has shown that the square root of one percent of a large population collectively practicing this technology is sufficient to beneficially influence multiple dimensions of individual and collective life. The square root of one percent of the current world population is approximately 7,000, the minimum size of a group of experts in this technology needed to produce a global influence. From 17 December 1983 to 6 January 1984 a group of over 7,000 of these experts came to MIU from 50 countries for the experiment which was called the Taste of Utopia Assembly.

Changes on nine social indicators during the three-week assembly were statistically compared to the three-week periods immediately before and after the assembly. Seasonality was controlled for by comparing changes during the assembly to the same weeks of the year during prior years, using the prior five years whenever these data were available. The following are the results of all data available at the time of writing.

Newspaper content analysis demonstrated the following changes in world events during the assembly relative to before and after the assembly:

1. Increased progress made by heads of state around the world in reversing negative trends and in accelerating positive trends (p = .02)

2. *A significant shift of events in trouble-spot countries towards greater positivity as measured by the International Conflict Scale (p = .002)*
3. *Increased progress towards peaceful resolution of the Lebanese conflict (p = .006)*

In addition, analysis of six other global social indicators demonstrated:

4. *Increase in the World index, a measure of the major stocks in 19 countries, compared to before and after the assembly (p = .0001), and the simultaneous rise of 19 out of 20 stock markets in different countries, a significantly greater proportion of markets rising together than was seen in the previous five years (p = .00004)*
5. *Decreased highway fatalities in the U.S.A., Australia, and South Africa compared with the same time of year in previous years (p = .0001)*
6. *Decreased air traffic fatalities worldwide compared to before and after the assembly and relative to the previous five years (p = .0001)*
7. *Increased patent applications over the number predicted for that time of year based on data from prior years in the U.S.A., United Kingdom, Australia, and South Africa (p = .04)*
8. *Decreased notifiable infectious diseases in the U.S.A. and Australia compared to the median of the prior years for the same weeks of the year (p = .0001)*
9. *Decreased crime in Washington, D.C., U.S.A. and Karachi, Pakistan and in the state of Victoria, Australia compared to before and after the assembly and relative to prior years (p = .000002)*

These results are discussed in terms of a recent interpretation of unified field theory of quantum physics. The unified field, being self-interacting or self-referral, is understood to be the field of consciousness, the Cosmic Psyche. When individual consciousness is identified with this universal value of awareness, the integrative and evolutionary qualities of the unified field are enlivened in the entire collective consciousness, thus raising the quality of life.

INTRODUCTION

Research has demonstrated that one percent of a population individually participating in the Transcendental Meditation program, or as little as the square root of one percent of a population collectively participating in the more advanced TM-Sidhi program, is sufficient to improve the quality of life throughout society on the city, state, and national levels (6, 8, 11, 14, 15, 16, 30, 32, 39). Social scientists (6) have named this effect the "Maharishi Effect" in honor of His Holiness Maharishi Mahesh Yogi who predicted it as early as 1960.

The Maharishi Effect has been replicated across numerous measures and is multidimensional, influencing many areas of life at once. For example, reduced crime, automobile accidents, and suicide rates were found in 24 U.S. cities with one percent of their population practicing the Transcendental Meditation technique (15, 24). An experiment conducted in Israel demonstrated decreased conflict in neighboring Lebanon, decreased auto accidents and fires, an increased stock market index, and more positive national mood when the square root of one percent of the national population participated in the TM and TM-Sidhi program as a group (32). Other experiments have shown that the Maharishi Effect produces holistic improvement as measured by aggregate quality of life indices composed of a number of social indicators (14, 39).

The most recent of these studies tracked the quality of life in the United States over a 24-year period on a composite index of twelve major social indicators: GNP per capita, crime rate, percent of civil cases reaching trial, infectious disease rate, infant mortality rate, suicide rate, cigarette consumption per capita, alcohol consumption per capita, patent application rate, degrees conferred per capita, divorce rate, and traffic fatality rate (39). This study demonstrated that the large increase in Transcendental Meditation participants in 1975 led to a reversal of a prior negative trend in the quality of life in the U.S. The study also showed that group practice of the Transcendental Meditation and TM-Sidhi program by the square root of one percent of the U.S. population (approximately 1,600) at Maharishi International University (MIU) in Fairfield, Iowa resulted in an increase in the national quality of life greater than at any other time in the prior 24 years. In addition, the effect was more pronounced in Iowa where MIU is located.

Research on the Maharishi Effect has utilized the most recent and powerful statistical and experimental

methodologies to control for the influences of possible confounding demographic variables, seasonality, trends, etc., employing such techniques as cross-lagged panel analysis (16), Box-Jenkins autoregressive integrated moving averages (ARIMA) time series analysis (8, 13, 14, 17, 25, 26), and multivariate state space time series analysis (32, 33).

The Maharishi Effect cannot be attributed to selection bias of those parameters which "work" because in many cases the changes were publicly predicted before the research was carried out (2, 14, 25, 33, 36). The international peace study in Israel, for example, formally lodged the specific hypotheses of the experiment well in advance of the experiment with an international review board of scientists independent of the Transcendental Meditation movement (3, 32). In this experiment, as in the others, the data were all obtained from public records that are accessible for review by anyone, and the results of the experiment strongly supported the stated experimental hypotheses.

The development of the research on the Maharishi Effect has been the logical growth of a substantial body of scientific data systematically expanding to larger sample sizes, to a broader variety of measures, and to more powerful statistical designs. In the case of studies on crime rate reduction, for example, a sequence of experiments has expanded from:

1. a study over a two-year period on 11 U.S. cities with population over 25,000 and one percent of their population participating in the Transcendental Meditation program in 1972 (6), to
2. a study over 11 years on 24 "one-percent" cities (including cities in the range 10,000 – 25,000) (15), to
3. a study over 15 years on a random sample of 160 cities and 80 standard metropolitan statistical areas representing the entire urban population of the United States (16).

In addition, reduction in crime rate was publicly predicted for the Washington, D.C. metropolitan area when the MIU College of Natural Law moved there in 1982. Interrupted time series analyses showed that crime does decrease substantially when the size of the group participating in the Transcendental Meditation and TM-Sidhi program at the College of Natural Law exceeds the local predicted minimum level of 400 (25). Other research has shown that groups of TM-Sidhi participants can reduce crime on the state level (13, 14) and national level (7, 11, 39).

To give another instance of the systematic development of research on the Maharishi Effect, time series analysis experiments have repeatedly found that the group practice of the Transcendental Meditation and TM-Sidhi program has a positive effect on economic time series (11, 26, 32, 33). Thus, the research on the Maharishi Effect has been well controlled, highly public, objective, and replicated many times over many measures. It shows the Maharishi Effect to be unprecedented in the social sciences for its power to improve the quality of life in large populations.

THEORY OF THE MAHARISHI EFFECT—Hagelin (21) has pioneered the theoretical explanation of the Maharishi Effect in terms of the most recent advances in unified field theory of quantum physics. Because the unified field is the fountainhead of natural law, all qualities in the universe have their origin in the unified field. The properties of the unified field have been clearly identified and include the quality of "self-referral" or self-interaction required to create diverse particles and forces from an initially unified structure (10, 12, 21, 22). Maharishi has pointed out that the property of self-referral is precisely the defining attribute of consciousness. Only consciousness has the ability to know itself in a completely self-referral manner and to create from within itself through self-interaction. Since the unified field creates the diversity of the universe from within itself, it is natural to conclude that it is the universal field of consciousness, the Cosmic Psyche (10, 21, 35).

The Transcendental Meditation and TM-Sidhi program has become known as the applied aspect of the Maharishi Technology of the Unified Field because it opens human awareness to the direct experience of consciousness in its self-referral state, transcendental consciousness, where consciousness is found identified with the unified field of all the laws of nature. This enlivens in individual and collective consciousness all of the evolutionary qualities of the unified field, which include perfect balance, perfect orderliness, harmonizing, infinite correlation, and infinite organizing power (22).

Central to the theoretical explanation of the sociological research on the Maharishi Effect is the concept of collective consciousness. The individuals in society give rise to a collective consciousness characteristic of the group (e.g., 37). Each individual in society is in turn affected by the abstract influence of collective consciousness. Collective consciousness

thus imposes boundary conditions on thought and behavior in society. The social institutions, mores, artistic tastes, etc., characteristic of a culture are, in this view, emergent properties of the collective consciousness of that population.

As individuals enliven the qualities of the unified field in their own consciousness and neurophysiology through the Maharishi Technology of the Unified Field, an evolutionary influence is enlivened in collective consciousness. This influence is coherent because it arises from the most integrated level of natural law. In coherent physical systems, such as laser light, the influence of the coherent elements in the population is proportional to their number squared, whereas the influence of incoherent elements is only proportional to their number. This principle has provided an understanding of the discovery that the collective practice of the Maharishi Technology of the Unified Field by a small fraction of the population is sufficient to enliven coherence throughout society.

Previous research has shown that the Maharishi Technology of the Unified Field does indeed enhance coherence in the individual, as shown by improved functioning within and between all areas of individual physiology and psychology. Since the pioneering physiological research on the Transcendental Meditation technique by R. K. Wallace (42, 43, 44), several hundred experiments have demonstrated such individual benefits as improved mental and physical health, and increased creativity, intelligence, moral reasoning, and perceptual ability.[1] Wallace's recent research on reduction of biological aging very clearly demonstrates the holistic nature of the individual benefits of the Transcendental Meditation technique (45). As research on the Maharishi Effect demonstrates, these same qualities that are produced in the individual meditators are seen manifest in the larger society; society as a whole becomes healthier, more intelligent, more creative, and more moral.

Maharishi's theory of collective consciousness (28) has profound ramifications for government and public administration in that it identifies the head of state as the "embodiment" and "innocent mirror" of the national consciousness. In this view, the head of state is the first to feel any change in national consciousness and his or her feeling provides the best gauge of the state of the nation. Furthermore, the effectiveness of government at all levels depends on the collective consciousness. If collective consciousness is incoherent, government becomes shrouded with problems (e.g., 23). On the other hand, if collective consciousness becomes more coherent, government will become more successful on every level of its activities. On the behavioral level one observes the machinery of government functioning but the hidden intelligence that guides the behavior is the collective consciousness of the people—collective consciousness is the unseen governor of every government.

The theory and research of the Maharishi Effect has been presented on many occasions by the faculty of Maharishi International University (MIU) in the U.S., Maharishi European Research University (MERU) in Switzerland and Germany, and Maharishi University of Natural Law in England, to the United Nations (e.g., 31), to the United States Congress (e.g., 34), and to governments throughout the world as demonstrating the singular effectiveness of the Maharishi Technology of the Unified Field to eliminate all suffering, create world peace, and raise human life to its full dignity.

TASTE OF UTOPIA ASSEMBLY—Based on the success of this technology to solve recalcitrant social problems on the city, state, and national levels, under the inspiration and guidance of Maharishi and with the leadership of the president of MIU, Dr. Bevan Morris, the MIU community in November 1983 undertook a global experiment intended to beneficially influence the entire world by bringing together the requisite number of individuals for the collective practice of the Transcendental Meditation and TM-Sidhi program. From 17 December 1983 to 6 January 1984 over 7,000 people (approximately the square root of one percent of the world's population) came from 50 countries to Maharishi International University in Fairfield, Iowa for the Taste of Utopia Assembly, so named because it was predicted to produce a worldwide positive effect on the quality of life during this period.

The occurrence of the assembly provided an opportunity to scientifically observe and evaluate its global effects on a wide range of measures of quality of life. Most of the social indicators studied in the present experiment were derived from measures that had been used in previous research on the Maharishi Effect, e.g., stock market indices, highway fatalities, air traffic fatalities, crime rate, and content analysis of inter-

---

1. Over 300 research papers are included in *Scientific Research on the Transcendental Meditation and TM-Sidhi Programme: Collected Papers,* volumes 1–5 (9, 38).

national conflicts. The uniqueness of the present research, however, is that these social indicators were studied on a worldwide scale. New measures used in the study were content analysis of newspaper reports of the speech and actions of heads of state, patent applications as a measure of national creativity, and incidence of notifiable infectious diseases. It was hypothesized that during the three-week Taste of Utopia Assembly the following changes would occur relative to the three-week periods before and after the assembly and relative to the same time of year in the previous five years:

1. Increased progress by heads of state in solving problems
2. Increased calming influence in the world's trouble spots
3. Increased progress toward a peaceful resolution of the Lebanese conflict
4. Significant rise in the World index, an international stock index representing 19 countries, and a simultaneous rise in stock indices in all countries
5. Decreased highway traffic fatalities worldwide
6. Decreased air traffic fatalities worldwide
7. Increased patent applications worldwide
8. Decreased incidences of notifiable infectious diseases worldwide
9. Decreased crime worldwide

These specific predictions, with the exception of 6 and 8, were lodged in advance with an independent national review board of distinguished scientists and the international press. The present report covers all the data available at the time of this writing.

METHOD

INDEPENDENT VARIABLE—The 7,000 participants in the Taste of Utopia Assembly met twice a day, in the morning and afternoon, for the collective practice of the Transcendental Meditation and TM-Sidhi program. The program was held in the two Golden Domes and other facilities of Maharishi International University in Fairfield, Iowa. The independent variable was the size of the coherence creating group each day collectively practicing the Maharishi Technology of the Unified Field for the three-week periods before, during, and after the Taste of Utopia Assembly (26 November–16 December 1983; 17 December 1983–6 January 1984; 7 January–27 January 1984). Its effect was studied on a variety of dependent variables.

DEPENDENT VARIABLES—Since global improvements throughout the world were predicted, as many different social indicators of quality of life as possible were collected in countries that were geographically widely separated. The variables available at the time of this writing were:

1. Content analysis of newspaper articles pertaining to heads of state, international conflicts, and the civil war in Lebanon
2. The World index of stock prices (a composite of major stocks on 19 of the world's stock markets) and stock indices of 20 countries
3. Highway fatalities in the U.S., Australia, and South Africa
4. Air traffic fatalities worldwide
5. Patent applications in the U.S., Australia, South Africa, and the United Kingdom
6. Infectious diseases in the U.S. and Australia
7. Crime data from Washington, D.C., U.S.A. Karachi, Pakistan; and Victoria, Australia

The goal of data collection was to obtain a consistent data set including stock prices, traffic fatalities, patents, infectious diseases, and crime from four countries on four different continents—the United States, the United Kingdom, Australia, and South Africa. These countries were selected because statistical data from them is relatively easy to obtain, up-to-date, and reliable.

In order to control for seasonality, data for the same weeks of the year for the prior five years were collected for all variables except those involving newspaper content analysis. For the content analysis variables, data were obtained for the same weeks of the year for the prior year. As an additional control for seasonality for international conflicts, data were obtained for the same weeks of the year for the most recent ten-year period (1968–1977) available from the Conflict and Peace Data Bank (4).

In addition, data were collected for the three-week periods before and after the assembly for all variables for the year of the assembly as well as for prior years. (An exception was U.S. auto fatalities, which covered the Christmas and New Year's weekends only and therefore pre/post data were not available.) The effects of the Taste of Utopia Assembly were statistically compared with prior years and with the periods before and after the assembly.

All data were analyzed on a 11/780 VAX computer using the Interactive Data Analysis and Forecasting

System and the BMDP statistical software. Since all of the hypotheses are directional, one-tailed statistical tests were used in the statistical analyses. However, in the case of control data for prior years, for which there were no directional hypotheses, two-tailed tests were employed.

Newspaper content analysis: The sample for content analysis of newspaper reports of the speech and actions of heads of state and of international conflicts were drawn from the first three pages, News Index, and News Summary of *The New York Times* for the three weeks before, during, and after the assembly (26 November through 27 January). Only articles on events taking place within the sampling period were used. Articles summarizing long-range trends that extended outside the sampling period were excluded. The dates of occurrence of the events were used in the statistical analysis.

1. Heads of State

The first two articles each day on statements and actions of heads of state or the response of others to heads of state were photocopied and the dates covered. The articles from all three periods (before, during, and after) were then shuffled and scored independently by two graduate students in business administration.

Subsequent to scoring, articles which repeated the content of another article were eliminated from the data analysis unless they included new content; for example, a report of the previous event as seen from another point of view, as in the reaction of another interest group, or a change in attitude or behavior of the head of state from what had been previously reported.

The system of categorization of events pertaining to heads of state was based on the assumption that every event occurs in the history of an ongoing process in time. Events were cast into a 2 by 2 contingency table in which one dimension was the prior history of the event or trend, whether positive or negative, and the other dimension was whether the head of state produced a positive or negative change in the trend. Thus, the four categories were:

1. Positive trend, positive event
2. Negative trend, positive event
3. Positive trend, negative event
4. Negative trend, negative event

Criteria and examples used to guide the content anal-

ysis of heads of state are found in Appendix A.

If the categorization of an event by the two raters did not match, they discussed the article, reading it again if necessary and in some cases discussing the article with the first author of this paper until a consensus was reached. One or more of these procedures was needed to arrive at a consensus on approximately 20% of the items. Only after all items were categorized were the dates uncovered.

Analysis of the data showed that only one event fell in category 3 (positive trend, negative event) in the three periods. Therefore, for purposes of statistical analysis, categories 1 and 2 were combined and 3 and 4 were combined, according to standard criteria for collapsing contingency tables (41). This gave one category of positive outcomes and a second of negative outcomes, irrespective of prior trend.

In order to control for seasonality, the same sampling and analysis procedure was applied to articles appearing in *The New York Times* during the same time of year for the previous year. The control data were read from microfilm.

2. International Conflicts

All articles reporting international conflicts in the trouble-spot areas of the world were scored in a random order with respect to date by 12 pairs of business graduate students. Countries in conflict areas included in the sample were Nicaragua, Grenada, Honduras, El Salvador, Colombia, Lebanon, Israel, Syria, Kuwait, Iran, Iraq, Afghanistan, Chad, South Africa, Angola, Zimbabwe, Namibia, Lybia, Uganda, Kampuchea, Laos, Vietnam, Northern Ireland, and Spain. The mean of the two raters' scores was used in the data analysis. In each team of two a reader and listener were designated. The reader knew the date of publication (in order to select papers from a stack without duplication) but the listener did not know the dates. After each article was read, both reader and listener independently made a judgment on the degree of conflict according to a seven-point International Conflict Scale.

The International Conflict Scale was modeled after the 15-point "Conflict Scale Category" developed by Azar and his colleagues which was used to develop the Conflict and Peace Data Bank, 1948–1978 Daily Aggregations (4). The International Conflict Scale used in the present study is described in Appendix B.

RELIABILITY—The International Conflict Scale was

found to be reliable and successive scores were found to be unbiased and independent. Reliability was demonstrated by a high correlation between scores of readers and listeners for all periods combined, $r = .91$. The scale values were interpreted similarly for the different pairs of raters which is seen in almost identical means and standard deviations between readers, $M = -.57$, S.D. $= 1.26$; and listeners, $M = -.58$, S.D. $= 1.27$. Note that the mean scale score for all periods combined is somewhat negative.

Readers' knowledge of the dates of the events did not bias their scoring. This was demonstrated by a one-way ANOVA showing that the mean difference between readers and listeners during the Taste of Utopia Assembly did not differ significantly from the difference between readers and listeners in the before and after periods, $F(2,266) = .40$, $p = .67$.

There were approximately 90 events rated in each three-week period, or approximately 4.3 events per day. When the events were arranged sequentially according to date of occurrence, they were found to be independent from one another as shown by a nonsignificant number of autocorrelations from lag $1-50$. The adjusted Box-Pierce statistic (Ljung-Box statistic) was chi-square $= 45.05$, $df = 50$, $p = .67$ showing a nonsignificant autocorrelation structure. In addition, the number of runs of autocorrelations above and below zero was not significantly different from the expected value for a serially uncorrelated series, thus lending further support to the results of the adjusted Box-Pierce test. The assumption of a random, independent process could not be rejected and, therefore, it was appropriate to analyze the data as independent frequencies.

Because of low frequencies in the extreme categories on the International Conflict Scale, the seven-point scale was collapsed to five categories: strongly negative events, -3 to -2; negative events, -1.5 to -0.5; unchanged negative conditions, 0; positive events, 0.5 to 1.5; and strongly positive events, 2 to 3. In addition, the data were collapsed into two categories, Total Negative Events (scale score -3 to 0) and Total Positive Events (0.5 to 3).

As a control for seasonality, the same sampling and scoring procedure was used to analyze international conflicts during the previous year at the same time of year, from 26 November 1982 through 27 January 1983. (Control data were read from microfilm.) These data were collected in order to answer the question of whether international conflicts as reflected in

The New York Times sample tended to decrease the prior year during the time of the Taste of Utopia Assembly (17 December to 6 January) compared to the three weeks before and after.

As an additional control for seasonality, data from the Conflict and Peace Data Bank (COPDAB) Conflict Scale Category (4) for a ten-year period, 1968 to 1977, for the same weeks of the year as the three-week periods before, during, and after the Taste of Utopia Assembly, were analyzed for the whole world.[2] In order to make the COPDAB data most comparable to the present data, they were divided into two categories, Total Positive Events (Conflict Scale Category scale 1 through 7) and Total Negative Events (scale 9 through 15). The most recent year available, 1978, was excluded because that year overlapped with Maharishi's Ideal Province Campaign and World Peace Project which may have had an effect on the COPDAB data (36).

The Conflict Scale Category data were not completely comparable to the present data, not only because they were from eight years earlier, but also because they covered the whole world whereas the present data selected trouble-spot areas of intense international conflict. The proportion of Total Positive Events during the before-assembly period in the present data was on the order of 20% of all events scored, whereas for the COPDAB data it was 72% for comparable weeks of the year during 1968 to 1977. However, even though the absolute levels of conflict were quite different between the COPDAB file and the present data, the COPDAB data do provide a control for relative change in the level of conflict at the time of year of the assembly compared to the three-week before and after periods.

In addition, the COPDAB data also were analyzed for major conflict areas in 1968 to 1977 (Middle East, Central America, Southern Africa, and Southeast Asia) so that the sample was more comparable to the conflict areas studied in the present experiment. This analysis indicated that approximately 34% of the events in the conflict areas were positive during 1968 to 1977 at the same time of year as the before-assembly period.

---

2. The principal investigator who originally collected the data for the COPDAB file is Edward E. Azar, University of Maryland, College Park. The COPDAB file is available from the Inter-University Consortium for Political and Social Research, P.O. Box 1248, Ann Arbor, MI 48106. Neither the collector of the original data nor the Consortium bear any responsibility for the analysis or interpretation presented here.

3. Middle East: Lebanese Conflict

A modified version of the International Conflict Scale was also used to score daily levels of conflict in Lebanon from 26 November to 27 January as reported in *Al Nahar*, the major daily newspaper in that nation. *Al Nahar* has the largest circulation of all Lebanese newspapers and is considered objective and neutral. It is read by members of all Lebanese interest groups, regardless of religion or political party. For two days (Christmas and New Year's) scores were assigned from *The New York Times* because *Al Nahar* was not published for these days. For the last week, 20–27 January, two newspapers were used in addition to *Al Nahar: Al Anwar* and *L'Orient*, a major French language newspaper in Beirut.

The scale used in Lebanon differed from the one described above in that it contained four negative categories instead of three. This was the same scale used in previous research on conflict resolution in Lebanon (32). (In collapsing this scale to five categories for statistical analysis, strongly negative events were defined as -4 to -2.)

The rating was done within Lebanon by four raters (three Lebanese and one Palestinian) including representatives of the major groups within the country: Druze, Moslem, and Christian. The raters were unaware of the details of the dates and size of the assembly. The raters were divided into two pairs who reviewed the newspaper for each day and read in full all articles pertaining to the crisis before assigning a score for the day.

For the first five weeks each pair rated each day independently and reported separate scores. If scores between pairs were different, the mean of the two scores was used for data analysis. Reliability between pairs was $r = .82$. For the next three weeks, if the two pairs disagreed on the score for the day, then the events for that day were discussed and a consensus reached. For the last week, only one rater was available; however, because of the prior high reliability, these scores were also included in the analysis.

Autocorrelation analysis of the sequence of 56 mean daily scores showed that the number of significant autocorrelations from lag 1–40 were not more than would be expected by chance; the adjusted Box-Pierce statistic for lag 40 was 41.11, $df = 40$, $p = .42$, and thus was not significant. Therefore, the data points were considered to be independent and were analyzed using nonparametric techniques appropriate to the scale.

Control data were obtained for comparable weeks of the previous year using the same newspaper source and scoring procedure.

4. Stock Market

THE WORLD INDEX AND THE DOW JONES—Daily data during the three weeks before, during, and after the Taste of Utopia Assembly were collected on the World index, an international index of stock prices compiled by Capital International S.A., Geneva. The World index is an arithmetic average, weighted by market value, of the prices of 1,100 securities listed on the stock exchanges of 19 countries. It comprises approximately 60% of the total market value of all stocks listed on these 19 exchanges in the U.S., Europe, Canada, Mexico, Australia, and the Far East.

The day-to-day changes, or first differences, of the World index and daily Dow Jones Industrial Average over the same period were analyzed using regression analysis with a simple binary independent variable to compare the mean change in each index during the assembly with its mean during the three weeks before and after.

EIGHT MAJOR STOCK MARKETS—In addition, the percent change during the three-week periods before, during, and after the Taste of Utopia Assembly was studied for the eight major national stock markets published in *The Wall Street Journal*: United States, United Kingdom, Canada, Japan, France, Germany, Switzerland, and Australia. Percent changes were calculated for the current year as well as for the four previous years which comprise all the years in which *The Wall Street Journal* has published daily data on the eight indices. The percent change was defined as the difference in the closing price between the first and last day of each three-week period, that is the closest day, allowing for weekends and holidays, to 16 December minus 28 November (before), 6 January minus 16 December (during), and 27 January minus 6 January (after). The mean percent change for the four previous years was used to control for time of year (seasonal trends) in assessing change during the assembly.

TWENTY MAJOR STOCK MARKETS—In order to increase the number of the stock markets sampled to represent as much of the market activity in the world

as possible, weekly data on 19 markets published in *Barron's National Business and Financial Weekly* were also analyzed. Change over each of the three-week periods was calculated as before. The markets included in this sample were Australia, Austria, Belgium, Canada, Denmark, France, Germany, Hong Kong, Italy, Japan, Mexico, Netherlands, Norway, Singapore, Spain, Sweden, Switzerland, the United States, and the United Kingdom. In addition, data were obtained from the Johannesburg Stock Exchange (JSE), the *Rand Daily Mail* 100, bringing the number of indices studied to 20. The JSE index which was used in the present research removed stocks pertaining to mining since these stocks largely represent gold prices which generally have a different dynamics from other stocks. Percent change was calculated for the periods most closely corresponding to the dates of before, during, and after periods of the Taste of Utopia Assembly for the current year, as well as the five previous years.

The mean percent changes for comparable periods for the previous five years was used to control for time of year to assess change in the market behavior during the assembly.

5. Traffic Fatalities

Data on the number of traffic fatalities for the Christmas and New Year's weekends, the number of miles driven on these holiday weekends, and the length of each weekend in days were collected from 1976 to 1983 (see Appendix C for data sources). The number of fatalities per day per billion miles driven in the U.S. for the holiday weekends during the Taste of Utopia Assembly were statistically compared with the same measure for the previous 16 years.

During 1974 the 55 mile per hour speed limit was introduced in the U.S. It was found that the number of fatalities per day per billion miles driven (f/d/m) during Christmas and New Year holiday weekends decreased significantly since the 1974/75 holiday season. The mean f/d/m from 1967 to 1973 was 59.35 but was 40.99 for 1974 to 1982, a decrease of 31% ($t = 4.0$, $p = .002$). This shows that the 55 mph speed limit in the U.S. did have a significant effect in decreasing traffic fatalities over the Christmas and New Year holiday weekends. Therefore, in order to take the effects of the 55 mph speed limit into account, the data were adjusted for the speed limit change in 1974 by subtracting the difference between the means (18.36) from all the values from 1967 to 1973.

In order to assess the level of f/d/m during the 1983/84 Taste of Utopia Assembly, a confidence interval was constructed based on the adjusted prior 16 years of data. The assumption of independent data points was shown to be met by a normal probability plot on adjusted series of 16 years data, which showed it to be normally distributed, with a studentized range of 3.48. The runs test, a nonparametric test of autocorrelation, showed that the observed number of runs (10) did not differ significantly from the expected number (8.9), S.D. = 1.90. In addition, correlation analysis showed that there was no significant linear trend in the adjusted f/d/m data for the prior 16 years ($r = -.12$, NS). Therefore, since the data were normally distributed, independent, and without a linear trend, a confidence interval was judged to be an appropriate means of assessing the effects of the Taste of Utopia Assembly.

Traffic fatality data were also obtained for Australia and South Africa for the entire period of the Taste of Utopia Assembly (see Appendix C for data sources). The effects of the Taste of Utopia Assembly on traffic fatalities in Australia and South Africa were assessed by comparing the actual number of fatalities during the assembly with the number predicted for that period by prior trends. The number of fatalities during the assembly was compared with the predicted number because one country (South Africa) had a significant trend of increasing fatalities this time of year over the prior five years.

The predicted values were projected by linear regression on the number of fatalities at that time of year for the previous five years. For comparative purposes, the U.S. data were also analyzed this way, as well as by the method described above. For the U.S., the prior 16 years, adjusted for the effects of the 55 mph speed limit, were used in the regression. Since the number of days in the holiday weekends has been defined differently on different years, the regression was computed for fatalities *per day*. The predicted number of fatalities per day in 1983/84 was then converted into the predicted number of fatalities during the three-day long weekends and compared to the actual number of fatalities, as was done for the Australian and South African data.

Australia held a World Peace Assembly (similar to the Taste of Utopia Assembly, but on a national scale) in January 1983 with a group of over 400 experts in the Maharishi Technology of the Unified Field. Since the effect of this World Peace Assembly could have confounded the outcomes using January

1983 as one of the control years, the predicted value of fatalities for the Taste of Utopia Assembly for Australia was projected from a linear regression on data from 1978/79 to 1981/82, excluding 1982/83. The effects of the January 1983 Australia World Peace Assembly on traffic fatalities, patents, and the Australian stock market are presented separately in this paper (see Appendix D).

6. Air Traffic Fatalities

Accident statistics outside the U.S. were available only for "serious accidents," those involving planes over 2,250 kg. For the U.S., data were available on "fatal accidents" which were defined as accidents in which at least one person was killed. Usually these accidents concerned smaller planes, those under 2,250 kg. Therefore, the data on numbers of accidents within the U.S. were not comparable with data for accidents outside the U.S.

A second statistic on the number of fatalities was used which included all non-U.S. fatalities for larger planes and all U.S. fatalities for large and small planes. This provided a worldwide figure for air traffic fatalities for all countries which participate in the International Civil Aviation Organization's data collection. (See Appendix C for data sources.)

The number of air traffic fatalities in the world (U.S. and non-U.S. combined) was statistically analyzed by putting the data into a 2 by 6 table (two periods, the three weeks corresponding to the assembly and the mean of the before and after periods combined, by the six years, five previous years and the present year). The expected value for each cell was calculated (the product of the marginal totals divided by the grand total) and the relative frequency of fatalities in the cell corresponding to the Taste of Utopia Assembly was assessed by examining the Freeman-Tukey deviate for that cell (18).

7. Patents

Patent applications were collected as a measure of national creativity. For the U.S., monthly data on the expected and actual patent applications were obtained, as well as data for six approximately two-week periods before the assembly and one two-week period after the assembly. The closest dates corresponding to the assembly covered patent applications postmarked 21 December to 3 January.

Monthly patent data, defined by pay periods, were also obtained from the U.S. Patent Office. The number of patent applications per month predicted by the U.S. Patent Office was quite accurate, with a mean deviation of 0.75% (S.D. = 3.98) between the actual and predicted number of applications for the 27 one-month periods from 30 October 1981 to 24 December 1983. This is excluding the effect of a fee increase on 1 December 1982, which increased the number of patent applications by 132% the month before and decreased the patent applications by 43% and 22% for the two following months. Analysis of the 27 months of data showed that the percent error in prediction was not autocorrelated and therefore could be statistically treated as independent frequencies.

Data on the number of patent applications for 1983/84 and the five prior years were also obtained for the United Kingdom, Australia, and South Africa. For each country, patent data were obtained for the three weeks before, during, and after the assembly. (See Appendix C for data sources.)

Analysis of the effects of the Taste of Utopia Assembly on all four countries was based on comparison of the predicted number of patent applications for that period with the actual number. The forecast made by the U.S. Patent Office was used as the predicted number of patents for the U.S., while for the U.K., Australia, and South Africa, the predicted number of patents was based on a linear regression on the five previous years. This was deemed the most appropriate way to compare 1983/84 with the five previous years because more elaborate forecasting models were not possible due to the relatively short data sets.

For Australia, data for 1982/83 were again excluded from the linear regression because of the January 1983 World Peace Assembly in Australia (see Appendix D).

8. Infectious Diseases

Weekly data on the number of cases of specified notifiable infectious diseases in the U.S. were obtained for the three-week periods before, during, and after the Taste of Utopia Assembly. The periods covered the 48th week of 1983 through the 4th week of 1984. Three measures were provided: the number of cases per week, the number of cases for the same week of the previous year, and the median number of cases for the same week of the previous five years.

The incidence of infectious diseases in the U.S. during the Taste of Utopia Assembly was compared with the three-week periods before and after the assembly, as well as with the same weeks for the previous year and the median for the same weeks of the previous five years. For most diseases, the frequency of cases in the prior year was similar to the five-year median. Thus, in the absence of any substantial change in recent years, the 1983/84 data were compared with the five-year median. However, for two diseases, measles and rubella, the number of diseases reported in the prior year was substantially lower than the five-year median, showing a decline in these diseases most recently due to inoculation programs. For these two diseases, the 1983/84 levels were compared with the prior year only as the most conservative estimate of the effect of the assembly. The data were also analyzed separately for diseases with shorter incubation periods (usually less than ten days) and diseases with longer incubation periods (usually two to three weeks or more).

Data on infectious diseases were also obtained from Australia for 1983/84 and four previous years. Only the higher frequency diseases which allow reliable statistical analysis were studied. These were hepatitis type A, gonorrhea, salmonella, syphilis, and tuberculosis. The three next most frequent diseases, pertussis, meningococcal disease, and malaria, were combined into a sixth category. Data were collapsed for each three-week period corresponding most closely with the dates of periods before, during, and after the assembly and are reported as incidence per week. (See Appendix C for data sources.)

9. Crime

Letters were sent to the Chief of Police of each of the 165 largest metropolitan areas in the world, requesting daily crime totals from 1 July 1983 to 31 January 1984 and weekly crime totals for the months of December and January for the years 1972 to 1983. This data was requested in order to allow for rigorous time series analysis of crime changes, even though it was anticipated that few cities might respond with the extensive data requested. At the time of this writing, city data were received from Karachi, Pakistan and Washington, D.C., U.S.A. and state data were received for Victoria, Australia from Melbourne. Several other agencies promised data which have not yet been received. Crime data were analyzed using Box-Jenkins ARIMA time series analysis.

RESULTS

Figure 1 shows the size of the coherence creating group (afternoon session only) for three weeks before, during, and after the Taste of Utopia Assembly. During the first 11 days of the assembly, as people arrived from all over the world, the size of the group rose from 1,634 on 17 December to over 6,900, the square root of one percent of the world's population, on 28 December. For nine days, from 28 December through 4 January, the size of the group consistently exceeded 6,900, reaching a maximum of approximately 8,000 on 30 December. On 6 January the size of the group dropped to approximately 4,000 as people began to leave the assembly to return home, and declined to about 2,000 over the three-week period after the assembly.

The data supported all of the hypotheses of the experiment; the results of each will be presented and discussed in turn.

1. Heads of State

Content analysis of newspaper reports of news events pertaining to heads of state showed a signif-
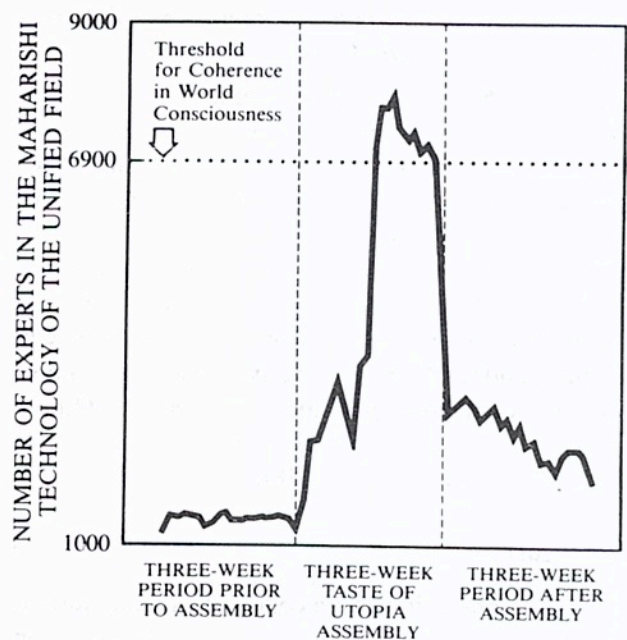

FIG. 1. NUMBER OF EXPERTS IN THE MAHARISHI TECHNOLOGY OF THE UNIFIED FIELD. Beginning on 17 December, the size of the coherence creating group at Maharishi International University began to increase, exceeding 6,900, the square root of one percent of the world's population, on 28 December. On 6 January, the Taste of Utopia Assembly ended and the number of experts participating in the collective practice of the Maharishi Technology of the Unified Field fell far below the number needed to maintain coherence and positivity in world consciousness.

icant shift towards more positive outcomes during the Taste of Utopia Assembly compared with the periods before and after the assembly, which supports hypothesis 1.

For all periods combined, 73.5% of the events had a prior negative trend. Figure 2 shows the shift towards more positive outcomes during the Taste of Utopia Assembly for the group of events with prior negative trends; comparing before and during, chi-square = 2.69, $df = 1$, $p = .05$; comparing during and after, chi-square = 7.11, $df = 1$, $p = .004$. It is therefore concluded that during the Taste of Utopia Assembly heads of state were significantly more successful in reversing prior negative trends. After the assembly the public statements and actions of heads of state reverted back towards less positive outcomes.

A test of independent proportions (29, p. 58) showed that there was a significant difference in the overall proportion of positive outcomes (for all cases irrespective of whether prior trends were negative or positive) during the assembly (0.75) compared with the proportion during the before and after periods combined (0.50), S.D. = .12, $z = 2.00$, $p = .02$. The level of significance for a chi-square comparison corrected for continuity (41) of before and during the assembly was chi-square = 1.46, $df = 1$, $p = .11$ (trend); comparing during and after the assembly it was chi-square = 2.97, $df = 1$, $p = .05$ (table 1).

A general pattern was observed in the public statements and actions of heads of state indicating an in-

creased tendency to direct public attention towards constructive solutions of the countries' own internal problems rather than diverting public attention

STATEMENTS AND ACTIONS OF HEADS OF STATE: PERCENT OF EVENTS WITH PRIOR NEGATIVE TRENDS RATED FOR REVERSAL OR NON-REVERSAL OF TREND

| THREE-WEEK PERIOD PRIOR TO ASSEMBLY | THREE-WEEK TASTE OF UTOPIA ASSEMBLY | THREE-WEEK PERIOD AFTER ASSEMBLY |

Progress by Heads of State towards Reversal of Prior Negative Trends

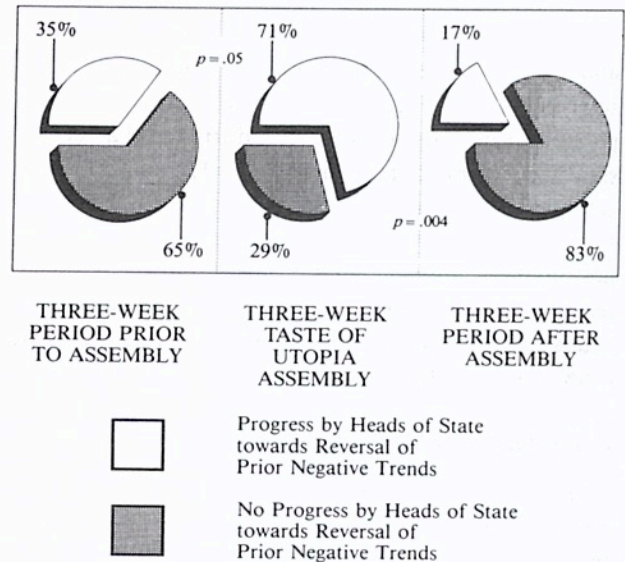No Progress by Heads of State towards Reversal of Prior Negative Trends

FIG. 2. CONTENT ANALYSIS OF THE STATEMENTS AND ACTIONS OF HEADS OF STATE. During the Taste of Utopia Assembly there was a proportional increase in progress by heads of state towards reversal of prior negative trends. During the assembly heads of state tended to direct public attention towards constructive solutions of national problems rather than towards an "external enemy" as the source of problems. After the assembly the quality of the statements and actions of heads of state and the support they received reverted towards less positivity.

TABLE 1

HEADS OF STATE: FREQUENCY AND PERCENT OF POSITIVE AND NEGATIVE OUTCOMES BEFORE, DURING, AND AFTER THE TASTE OF UTOPIA ASSEMBLY

	Before		During		Total
	N	%	N	%	N
Negative Outcomes	11	46	6	25	17
Positive Outcomes	13	54	18	75	31
Total	24	100	24	100	48

Chi-square = 1.46, $df = 1$, $p = .11$

	During		After		Total
	N	%	N	%	N
Negative Outcomes	6	25	11	55	17
Positive Outcomes	18	75	9	45	27
Total	24	100	20	100	44

Chi-square = 2.97, $df = 1$, $p = .05$

TABLE 1A

CONTROL PERIOD (1982/1983). HEADS OF STATE: FREQUENCY AND PERCENT OF POSITIVE AND NEGATIVE OUTCOMES FOR CONTROL PERIODS MATCHED TO BEFORE, DURING, AND AFTER THE TASTE OF UTOPIA ASSEMBLY

	Before		During		Total
	N	%	N	%	N
Negative Outcomes	9	31	8	44	17
Positive Outcomes	20	69	10	56	30
Total	29	100	18	100	47

Chi-square = .87, $df = 1$, $p = .35$ (opposite direction)

	During		After		Total
	N	%	N	%	N
Negative Outcomes	8	44	3	12	11
Positive Outcomes	10	56	23	88	33
Total	18	100	26	100	44

Chi-square = 6.14, $df = 1$, $p = .01$ (opposite direction)

towards external sources of problems (see Discussion).

Control data for the same time of year of the previous year (1982/83) indicated that the proportion of positive outcomes in the three-week periods comparable to before, during, and after the assembly were 0.69, 0.56, and 0.88 respectively (table 1A). Statistical comparison of the periods equivalent to before and during the assembly was not significant (chi-square = .87, $df = 1$, $p = .35$). However, the comparison of periods equivalent to during and after was significant (chi-square = 6.14, $df = 1$, $p = .01$), indicating the "during" period of the prior year had a *lower* level of positive outcomes than the "after" period. Thus, the control data show that there was no tendency in the prior year for events pertaining to heads of state to become more positive at the same time of year as the assembly.

2. International Conflicts

During the Taste of Utopia Assembly, events pertaining to international conflicts reported in the news shifted significantly towards greater positivity, indicating increased progress towards normalizing international relationships through peaceful means.

When five categories were used (strongly negative events, negative events, unchanged negative conditions, positive events, and strongly positive events) expected values in two of the cells were less than 2. Therefore, adjacent categories were combined. Strongly negative events, negative events, and unchanged negative conditions were combined into one category called "Total Negative Events," and positive events and strongly positive events were combined into a second category, "Total Positive Events." For the purpose of analysis the data were put into a 2 by 3 contingency table of Total Positive and Total Negative Events by the three periods (before, during, and after the assembly).

There was a significant increase in Total Positive Events and decrease in Total Negative Events during the assembly compared with before and after the assembly (chi-square = 12.32, $df = 2$, $p = .002$). Figure 3 shows the percent of Total Positive Events as the offset portion of the pie chart. It also shows the percent of events in each of the five categories during each of the periods. The shift to more positive events was significant during the assembly compared with before (chi-square = 5.87, $df = 1$, $p = .015$) and during compared with after (chi-square = 10.74, $df = 1$, $p = .001$).

INTERNATIONAL CONFLICTS:
PERCENT OF TOTAL EVENTS
AS RATED FOR DEGREE OF CONFLICT

THREE-WEEK PERIOD PRIOR TO ASSEMBLY | THREE-WEEK TASTE OF UTOPIA ASSEMBLY | THREE-WEEK PERIOD AFTER ASSEMBLY

TOTAL POSITIVE EVENTS

☐ Strongly Positive Events   ☐ Positive Events

TOTAL NEGATIVE EVENTS

☐ Unchanged Negative Conditions   ☐ Negative Events   ☐ Strongly Negative Events
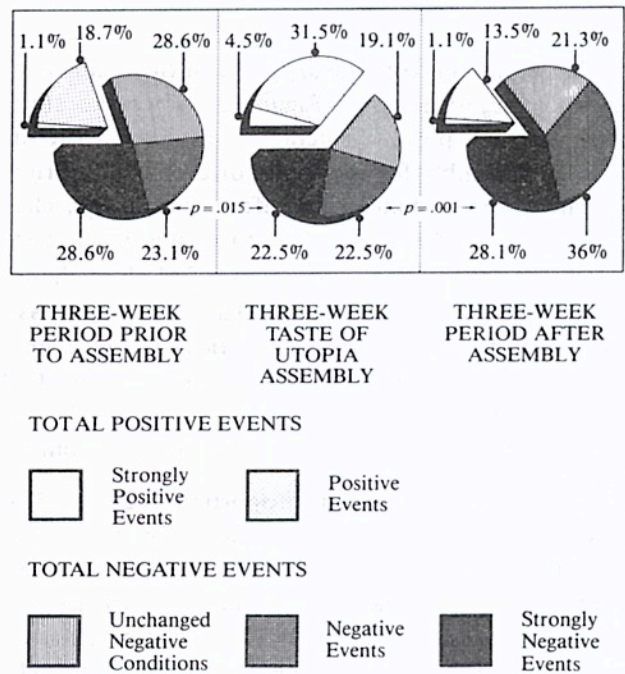
FIG. 3. CONTENT ANALYSIS OF INTERNATIONAL CONFLICTS. During the Taste of Utopia Assembly the balance of negative to positive events in trouble-spot areas of the world shifted significantly towards greater positivity. Positivity is defined as increased progress towards peaceful resolution of conflict. After the assembly the balance of events reverted towards greater negativity.

There was no significant difference between before and after periods, chi-square = .84, $df = 1$, $p = .36$).

The percentage of Total Positive Events in the conflict areas of the world shifted from 19.8% in the before period to 36.0% during the assembly, an increase of 16.2 percentage points. Freeman-Tukey deviates were calculated for each cell of the 2 by 3 table. These deviates are similar to z-scores when the data are from a Poisson distribution, and they indicated a significant increase in Total Positive Events during the Taste of Utopia Assembly over the expected value (Freeman-Tukey deviate = 2.2, $p = .01$). The Freeman-Tukey deviate for decreased Total Negative Events during the assembly was -1.4, $p = .08$ (trend).

Table 2 shows the results for the five categories uncombined. It can be seen that there was a significant shift in the frequency distribution towards more positive events during the Taste of Utopia Assembly, then a shift back in the negative direction after the assembly. The chi-square for the overall table was 16.77, $df = 8$, $p = .03$. Comparison of the before and during periods yielded a chi-square = 7.16, $df = 4$, $p = .13$

TABLE 2

INTERNATIONAL CONFLICTS: JOINT FREQUENCY DISTRIBUTION
AND PERCENTAGES OF ROW TOTALS ACROSS FIVE EVENT CATEGORIES
FOR PERIODS BEFORE, DURING, AND AFTER THE TASTE OF UTOPIA ASSEMBLY

	EVENT CATEGORIES										Total
PERIOD	Strongly Negative Events		Negative Events		Unchanged Negative Conditions		Positive Events		Strongly Positive Events		
	N	%	N	%	N	%	N	%	N	%	N
Before	26	28.6	21	23.1	26	28.6	17	18.7	1	1.1	91
During	20	22.5	20	22.5	17	19.1	28	31.5	4	4.5	89
After	25	28.1	32	36.0	19	21.3	12	13.5	1	1.1	89
Total	71		73		62		57		6		269

Chi-square = 16.77, df = 8, p = .03

TABLE 2A

CONTROL PERIOD (1982/1983). INTERNATIONAL CONFLICTS:
JOINT FREQUENCY DISTRIBUTION AND PERCENTAGES OF ROW TOTALS ACROSS FIVE EVENT CATEGORIES
FOR CONTROL PERIODS MATCHED TO BEFORE, DURING, AND AFTER THE TASTE OF UTOPIA ASSEMBLY

	EVENT CATEGORIES										Total
PERIOD	Strongly Negative Events		Negative Events		Unchanged Negative Conditions		Positive Events		Strongly Positive Events		
	N	%	N	%	N	%	N	%	N	%	N
Before	11	16.9	12	18.5	31	47.7	6	9.2	5	7.7	65
During	12	21.4	12	21.4	21	37.5	7	12.5	4	7.1	56
After	3	7.7	7	17.9	21	53.8	5	12.8	3	7.7	39
Total	26		31		73		18		12		160

Chi-square = 4.75, df = 8, p = .78

(trend); for the comparison of during and after, chi-square = 11.64, df = 4, p = .02; comparing before and after was not significant, chi-square = 4.23, df = 4, p = .38.

As a control for seasonality, the same analysis applied to a comparable data set for the previous year showed that international conflicts did not improve in the previous year at the same time of year as the Taste of Utopia Assembly. Rather, negative events did not change significantly, chi-square = 4.75, df = 8, p = .78 (table 2A). Comparison of before and during yields a chi-square = 1.49, df = 4, p = .83 and comparison of during and after yields a chi-square = 4.29, df = 4, p = .37, both not significant.

When collapsed into two categories, the percentage of Total Positive Events for the three periods of the prior year comparable to before, during, and after the assembly were 16.9%, 19.6%, and 20.5% respectively (chi-square = .25, df = 2, p = .88). Note that the percentage of Total Positive Events in the previous year was approximately the same as the baseline

period for the Taste of Utopia Assembly, that is, 19.8% in the before period. These control data show that there was no evidence from the previous year of increased positive trends in international conflict areas in the year prior to the Taste of Utopia Assembly.

The Conflict and Peace Data Bank Conflict Scale Category (4) divided into a comparable binary variable of Total Positive and Total Negative Events for the same weeks of the year for the ten-year period 1968 to 1977 showed that Total Positive Events increased only 6.3% from the before to during period for these years; the during period was not significantly different from the before and after periods (e.g., Freeman-Tukey deviate = 0.0, not significant, for Total Positive Events in the during period).

Additional control data from the COPDAB file for major trouble-spot areas from 1968 to 1977 showed no evidence of positive change during the time of year of the Taste of Utopia Assembly. In these trouble-spot areas, the percentage of Total Positive Events

for the three periods comparable to before, during, and after the assembly were 34%, 37%, and 40% respectively; Freeman-Tukey deviate = .59, not significant, for Total Positive Events in the during period. This provides additional evidence that the increased positivity seen during the Taste of Utopia Assembly cannot be accounted for by a seasonal effect.

3. Middle East: Lebanese Conflict

As with international conflicts, events in Lebanon were analyzed by collapsing the five event categories into two categories: Total Negative Events and Total Positive Events. It is recommended that contingency tables greater than 2 by 2 should be collapsed when a cell has an expected value less than 1, or when 20% of the cells have expected values less than 5 (18, p. 157). Prior to collapsing the table, 6 of 15 expected values were less than 2; after collapsing, the lowest value was 5.3.

Figure 4 shows Total Positive and Total Negative Events separated in the pie charts, as well as showing the percent occurrence in the five event categories.

LEBANESE CONFLICT:
PERCENT OF DAYS IN EACH PERIOD
AS RATED FOR DEGREE OF CONFLICT

THREE-WEEK PERIOD PRIOR TO ASSEMBLY

THREE-WEEK TASTE OF UTOPIA ASSEMBLY

THREE-WEEK PERIOD AFTER ASSEMBLY

TOTAL POSITIVE EVENTS

☐ Strongly Positive Events   ▨ Positive Events

TOTAL NEGATIVE EVENTS

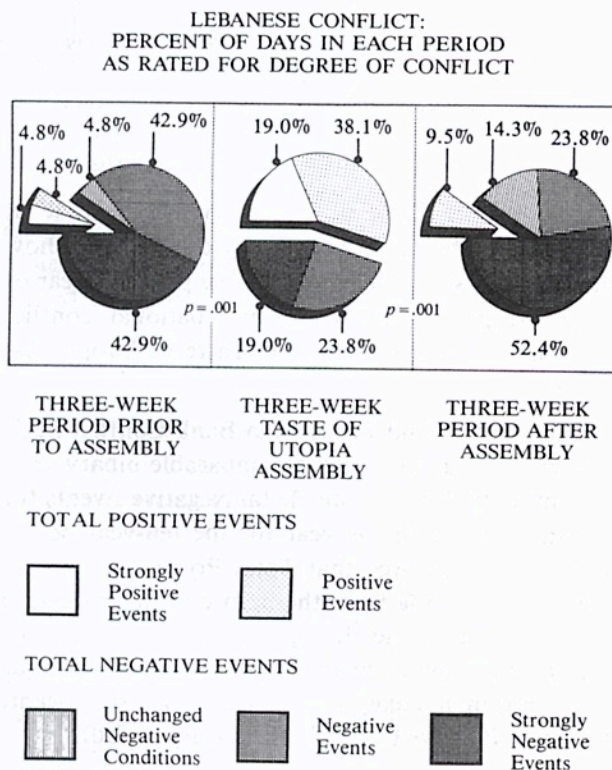▨ Unchanged Negative Conditions   ▨ Negative Events   ■ Strongly Negative Events

FIG. 4. CONTENT ANALYSIS OF EVENTS IN LEBANESE CONFLICT. During the Taste of Utopia Assembly positive events in Lebanon substantially increased as principally seen in the rapid evolution of an agreement on a national security plan. After the assembly the situation quickly deteriorated.

The overall significance of the table of two event categories by three periods was chi-square = 16.76, $df = 2$, $p = .0002$. The increase in Total Positive Events during the assembly relative to the before period was highly significant, chi-square = 10.71, $df = 1$, $p = .001$; the reversion to an increased proportion of negative events after the assembly was also statistically significant, chi-square = 10.71, $df = 1$, $p = .001$. The before and after period comparison was not significantly different. The Freeman-Tukey deviates for during the Taste of Utopia Assembly from a 2 by 3 table (two events by three periods) were 2.4, $p = .008$ for increased Total Positive Events and -1.8, $p = .04$ for decreased Total Negative Events in Lebanon.

Table 3 shows that, for the five event categories, events in Lebanon shifted in the positive direction during the Taste of Utopia Assembly. The significance of the overall table is chi-square = 21.45, $df = 8$, $p = .006$. Comparison of during with before is chi-square = 11.31, $df = 4$, $p = .02$, and the comparison of during with after is chi-square = 13.87, $df = 4$, $p = .008$.

Control data for the previous year did not show an improvement in the Lebanese civil war at the same time of year. The 2 by 3 contingency table of Total Positive and Total Negative Events by the three periods had a chi-square = 2.02, $df = 2$, $p = .34$, not significant.

Table 3A shows the control data cast into a 3 by 5 table of three periods by five event categories. The table shows that strongly negative events increased in the prior year during the period equivalent to the Taste of Utopia Assembly. However, because four expected values were less than 2, a chi-square on the table was not appropriate.

The central positive development that occurred within Lebanon during the Taste of Utopia Assembly was the surprisingly rapid evolution of agreement by all parties on a national security plan. On 20 December the PLO left the country, and there was growing agreement among the different factions to stop fighting (e.g., 22 December, 29 December), leading to the final stages of an agreement on a security plan by the end of the year.

On 1 January a Christian religious leader met with the Moslem prime minister and informed him about the results of his meetings with the different parties; the media were optimistic, writing that "the talks accomplished a positive improvement." On

2 January an agreement was reached on a program to remove all armed forces and militias from Tripoli. On 4 January the media stated that the government definitively approved the security plan on which the opposition had agreed and stated that the agreement "will be in force soon." On 5 and 6 January the media reported that mediations on agreements and treaties continued within a positive atmosphere of hopes for solutions. On the morning of 7 January, an article about the previous day's events (the last day of the Taste of Utopia Assembly) stated: "All parties definitely approved the [comprehensive Lebanese] security plan, and its proclamation [for implementation] is only a question of hours . . . ." The day after the Taste of Utopia Assembly ended (7 January) the situation quickly deteriorated. Fighting resumed in Beirut and the Lebanese mountains, which the newspaper described as "mountains in flames," and the security plans broke down as the fighting continued.

4. Stock Market

WORLD INDEX—Figure 5 shows the marked reversal of a prior negative trend for the World index of international stock prices (Capital International, S.A.) during the Taste of Utopia Assembly, and the resumption of a downward trend after the assembly. The series of 43 observations was first differenced and then analyzed using regression analysis with a binary dummy variable for the period of the assembly as the sole independent variable. This procedure is analytically equivalent to a one-way analysis of variance. This analysis tested whether there was any change in the day-to-day level of fluctuations in the World index during the assembly relative to before and after periods combined.

Regression analysis showed that during the assembly the World index rose 0.77 points per day (the regression coefficient for the binary variable) compared with the mean change for the before and after periods which was -0.14 points per day (the constant coefficient). That is, the estimate from regression analysis indicates that the World index rose 0.63 points per day during the assembly. This rise in the World index during the assembly was highly significant, $t(41) = 4.07$, $p = .0001$. The residual standard deviation was 0.57.

TABLE 3

MIDDLE EAST: LEBANESE CONFLICT.
JOINT FREQUENCY DISTRIBUTION AND PERCENTAGES OF ROW TOTALS ACROSS FIVE EVENT CATEGORIES
FOR PERIODS BEFORE, DURING, AND AFTER THE TASTE OF UTOPIA ASSEMBLY

PERIOD	Strongly Negative Events		Negative Events		Unchanged Negative Conditions		Positive Events		Strongly Positive Events		Total
	Days	%	Days	%	Days	%	Days	%	Days	%	Days
Before	9	42.9	9	42.9	1	4.8	1	4.8	1	4.8	21
During	4	19.0	5	23.8	0	0	8	38.1	4	19.0	21
After	11	52.4	5	23.8	3	14.3	2	9.5	0	0	21
Total	24		19		4		11		5		63

Chi-square = 21.45, $df = 8$, $p = .006$.

TABLE 3A

CONTROL PERIOD (1982/1983). MIDDLE EAST: LEBANESE CONFLICT.
JOINT FREQUENCY DISTRIBUTION AND PERCENTAGES OF ROW TOTALS ACROSS FIVE EVENT CATEGORIES
FOR CONTROL PERIODS MATCHED TO BEFORE, DURING, AND AFTER THE TASTE OF UTOPIA ASSEMBLY

PERIOD	Strongly Negative Events		Negative Events		Unchanged Negative Conditions		Positive Events		Strongly Positive Events		Total
	Days	%	Days	%	Days	%	Days	%	Days	%	Days
Before	3	16.7	9	50.0	4	22.2	2	11.1	0	0	18
During	13	72.2	1	5.6	0	0	3	16.7	1	5.6	18
After	5	25.0	9	45.0	0	0	4	20.0	2	10.0	20
Total	21		19		4		9		3		56

Diagnostic checks indicated that the regression analysis procedure was valid by showing that the underlying assumption of independent and identically distributed disturbances was met. The runs test statistic, the Wald-Wolfowitz one-sample runs test for randomness (a nonparametric test of autocorrelation) was $z = -.15$, not significant. The Ljung-Box test of joint significance of a group of autocorrelations also was not significant for lags $1-10$ ($Q = 8.17$, $df = 9$, $p = .52$). A plot of the residuals was symmetrical and stationary with no outliers. The distribution appeared to be approximately normal as suggested by a normal probability plot, as well as by the studentized range test, skewness, and kurtosis.

The adjusted r^2 was .27, showing that the assembly "explained" 27% of the variance in the World index. This is an impressive result because economic research has shown that it is very difficult to statistically explain the movement of first-differenced financial variables such as stock prices.

Thus, it is concluded that the increase in the World index seen in fig. 5 was highly statistically significant compared with the three weeks before and after the assembly. A Box-Jenkins time series analysis performed by Cavanaugh, Orme-Johnson, and Gelderloos has shown that the effect of the assembly was highly significant taking into account the markets'

dynamics over 151 days covering five months before and approximately two months after the assembly (8). The effect of the assembly was also shown to be highly significant even after explicitly allowing for the effect of long-term interest rates on international stock prices.

To investigate whether the increase in the World index during the assembly could plausibly be attributed to a tendency of the index to increase at this time of year, the increase in the index during the assembly was compared to its mean change during the same period in the four previous years. The World index increased by 8.1 points during the assembly (4.5%) compared with a mean change of 4.2 points (2.9%) for the previous five years, as reported in *The Wall Street Journal* and *Barron's National Business and Financial Weekly*.

THE DOW JONES INDUSTRIAL AVERAGE—The Dow Jones showed an even more dramatic reversal of a prior negative trend than did the World index (fig. 6). It was analyzed in a way comparable to the World index and the increase during the assembly was also highly significant. Regression analysis was conducted on the 42 observations of the first-differenced Dow Jones using a binary indicator variable set equal to "1" for each day of the assembly and "0" for each day before and after the assembly.
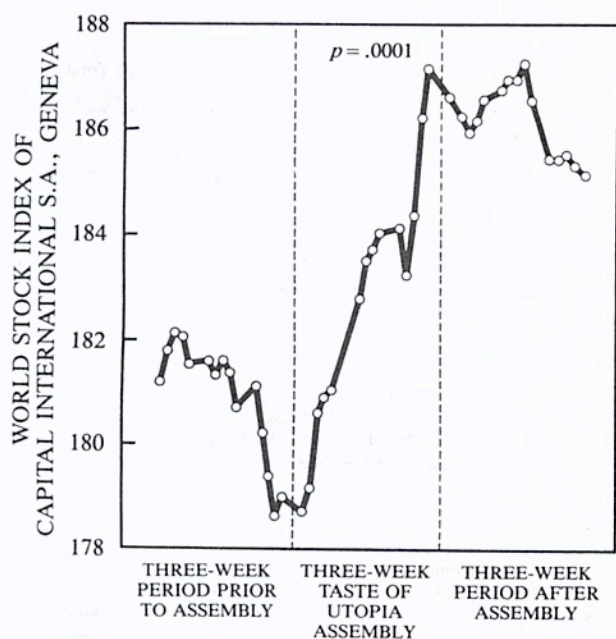

FIG. 5. WORLD STOCK INDEX. During the Taste of Utopia Assembly the prior downward trend in the World index of stock prices was reversed. The index rose markedly until the end of the assembly, after which it resumed a downward trend.
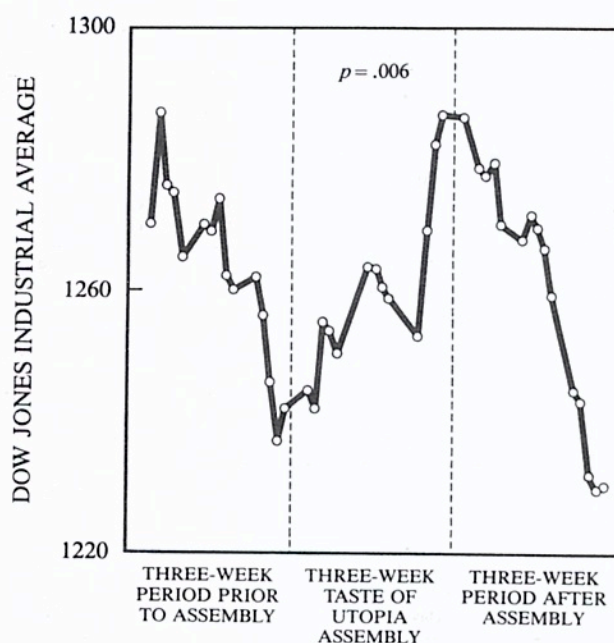
FIG. 6. DOW JONES INDUSTRIAL AVERAGE. The Dow Jones Industrial Average showed a marked increase during the Taste of Utopia Assembly, reversing a prior, steep downward trend. After the assembly the Dow Jones immediately reverted to a downward slide.

2746

The regression coefficient describing the impact of the assembly was 6.32 and the constant term -2.9. Thus, the mean change in the Dow Jones Industrial Average during the assembly was 3.42 points per day or 6.32 points greater than its mean of -2.9 points per day for the period before and after the assembly. The effect of the assembly was highly significant with t-statistic $t(40) = 2.67$, $p = .006$. The residual standard deviation was 7.13.

Diagnostic checks on the regression residuals suggested that the model was satisfactory. Only 1 of 20 individual residual autocorrelations (at lag 12) was significant at the 5% level, the expected value for an uncorrelated process. The Ljung-Box test was not significant for lags 1–10 ($Q = 7.78$, $df = 9$, $p = .56$) and the runs-about-the-mean test was also not significant ($z = .33$, $p = .74$). The normal probability plot for the residuals suggested that the residuals were approximately normally distributed. The hypothesis of normality could not be rejected at the 5% level using tests based on the studentized range, skewness, and kurtosis. Thus, the diagnostic checks on the model residuals suggested that the assumptions underlying inferences concerning the regression parameter estimates were satisfactorily met. Thus, it is concluded that the regression analysis was statistically appropriate and the effect of the assembly on the Dow Jones was highly significant.

EIGHT MAJOR STOCK MARKETS—Figure 7 shows that the eight major national stock markets reported daily in *The Wall Street Journal* increased during the Taste of Utopia Assembly, whereas in the three weeks before the assembly three of the markets were increasing and five were decreasing. After the assembly, these stock markets reverted to a pattern similar to that seen prior to the assembly, with some increasing and some decreasing. A one-way ANOVA using the before, during, and after periods as repeated measures and the eight markets as "subjects" was significant, $F(2,14) = 7.99$, $p = .01$. (The Greenhouse-Geisser probability was used which reduces the degrees of freedom to adjust for repeated measures over time (20)).

TWENTY MAJOR STOCK MARKETS—Weekly data for 19 stock markets reported in *Barron's National Business and Financial Weekly* and data on the Johannesburg Stock Exchange showed that 19 out of 20 markets increased by more than 1% during the Taste of Utopia Assembly. (Spain was the only exception and it decreased less than its mean change in the

previous five years during this period.) During the same time of year in other years, only 14, 6, 10, 8, and 11 of the markets increased by more than 1% for 82/83, 81/82, 80/81, 79/80, and 78/79, respectively.

During the Taste of Utopia Assembly the number of world stock markets which increased was nearly double the mean (9.8) for the comparable time of year in the previous five years. A chi-square test was performed to determine if the observed proportion of markets which increased during the assembly was significantly different from the hypothesized proportion, where the hypothesized proportion of markets was taken to be the average proportion of markets which increased over the comparable period in the previous five years. The difference was highly significant (chi-square = 16.94, $df = 1$, $p = .00004$). Equivalently, this test, based on a 2 by 2 table, may be viewed as a test of whether there was a significant shift of the distribution of changes in the stock market indices during the assembly toward a distribution with a higher number of rising markets as compared with the average for the same period in the previous five years.
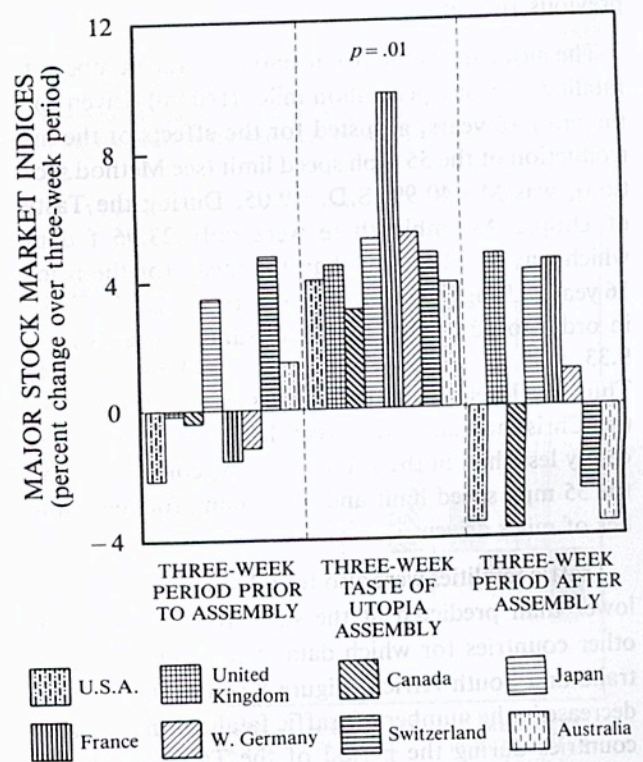

FIG. 7. MAJOR STOCK MARKET INDICES. During the Taste of Utopia Assembly the major stock markets of the world increased simultaneously. After the assembly these stock markets reverted to a pattern similar to that seen prior to the assembly, with some indices increasing and some decreasing.

It is clear even on a simple descriptive level that the simultaneous rise in almost all of the world's stock markets seen during the Taste of Utopia Assembly was different from the pattern seen at this time of year during the past five years. In addition, such a simultaneous increase was not seen either before or after the Taste of Utopia Assembly. In the three weeks prior to the assembly, 12 markets increased by 1% or more and 8 stayed the same or decreased. In the three weeks after the assembly, only 11 markets increased and 9 stayed the same or decreased. This indicates that the simultaneous rise of the stock markets seen during the Taste of Utopia Assembly was quite specific to the dates of the assembly.

5. Highway Traffic Fatalities

It was found that for the Christmas and New Year's holiday weekends during the Taste of Utopia Assembly the number of highway fatalities in the United States dropped to an all-time low (238 during the three-day Christmas weekend and 270 during the three-day New Year's weekend) whereas the number of miles driven reached an all-time high (10.4 and 10.8 billion miles, respectively), compared with the previous 16 years.

The mean and standard deviation of the number of fatalities per day per billion miles (f/d/m) driven for the prior 16 years, adjusted for the effects of the introduction of the 55 mph speed limit (see Method section), was M = 40.99, S.D. = 9.05. During the Taste of Utopia Assembly there were only 23.96 f/d/m which was 41.6% fewer than the mean for the prior 16 years. Using a standard error S.E. = S.D. $\sqrt{(1+1/N)}$ in order to adjust for the small sample size, S.E. = 9.33 and the t-statistic was $t(15) = 1.83$, $p = .04$. Thus, the level of traffic fatalities in the U.S. during the Christmas and New Year holidays was significantly less than in the prior 16 years, controlling for the 55 mph speed limit and controlling for the number of miles driven.

Traffic fatalities were also found to be substantially lower than predicted at the same time of year for other countries for which data were available, Australia and South Africa. Figure 8 shows the percent decrease in the number of traffic fatalities in the three countries during the period of the Taste of Utopia Assembly compared with the predicted number of fatalities based on linear regression on the previous five years (previous 16 years for the U.S.). The predicted vs. actual numbers of traffic fatalities were, for the

U.S., 742.1 and 508; for Australia, 131.1 and 117; and for South Africa, 577.3 and 463. Chi-square of goodness of fit was chi-square = 98.0, $df = 2$, $p = .0001$.

An additional analysis was conducted which took into account the standard error of prediction of the expected value from the regression analysis. The number of standard deviations below the predicted value for the U.S., Australia, and South Africa were 1.38, 0.44, and 2.38 respectively, with associated p values of .08, .33, and .008. Fisher (19) has shown that the combined probability of k independent tests of a hypothesis which have shown a consistent direction can be calculated by the expression

$$-2 \sum_{i=1}^{k} \ln (p_i),$$

that is, minus two times the sum of the natural logarithm (ln) of the probability values (p_i). The results of this expression have a chi-square distribution with $2k$ degrees of freedom. Applying this formula to the highway fatality results for the three countries gives chi-square = 16.71, $df = 6$, $p = .01$.

This result suggests a global reduction in traffic fatalities during the Taste of Utopia Assembly. It also provides an additional control for weather factors in
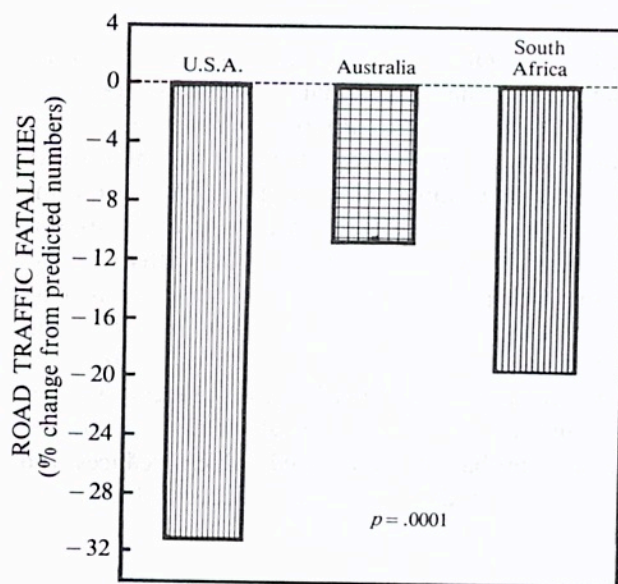

FIG. 8. ROAD TRAFFIC FATALITIES. During the Taste of Utopia Assembly traffic fatalities decreased significantly from the number of fatalities expected from prior years for the same weeks of the year in the countries studied. In the U.S.A., traffic fatalities over the Christmas and New Year's weekends were at an all-time low, even though miles driven per day were at an all-time high, eliminating the possibility that the decrease was a consequence of fewer miles driven due to cold weather.

the U.S., since both Australia and South Africa are in the southern hemisphere.

Linear regression on previous years showed that South Africa had a significant trend of increasing fatalities during this time of year; the correlation of number of fatalities with year was $r = .92$, $p = .01$, the increase was approximately 7% per year. There was no significant linear trend for the U.S. or Australia.

6. Air Traffic Fatalities

There were only 62 air traffic fatalities worldwide (U.S. and non-U.S. combined) during the Taste of Utopia Assembly, compared with a mean of 133.8 during the equivalent three-week period for the prior five years. The least number of fatalities at this time of year in any of the prior five years was 87.

For the purpose of statistical analysis, the worldwide air traffic fatality data were cast into a 2 by 6 contingency table representing the during period and the mean of the before and after periods by the six years (the current year and the previous five years). The observed value of 62 in the cell representing the Taste of Utopia Assembly was approximately one half of the expected value of 121.9; the Freeman-Tukey deviate for this cell was -6.3, $p = .0001$, indicating a highly statistically significant decrease in air traffic fatalities during the Taste of Utopia Assembly relative to the prior five years and to the mean of the three-week periods before and after the assembly (fig. 9).

The number of fatal air accidents outside the U.S. during the assembly was 11 compared with a median of 13 (range 9−20) in the five previous years. The number of accidents within the U.S. in which at least one fatality occurred was 30, tied for the lowest level in five years (range 30−41). These results show that whereas decrease in the number of accidents was small, the number of fatalities declined markedly, indicating a marked reduction in fatalities per accident. This is in strong contrast with before and after the assembly. For outside the U.S., for example, there were 19.42 fatalities per serious accident during the before and after periods whereas during the assembly there were only 0.45 fatalities per serious accident.

7. Patents

Figure 10 shows the percent difference between the actual number of patents and the predicted number for before, during, and after the Taste of Utopia As-

sembly for four countries. It can be seen that, as with the stock markets, during the assembly there was a simultaneous rise in patent applications in all countries relative to the predicted number and relative to the percent difference between actual and predicted
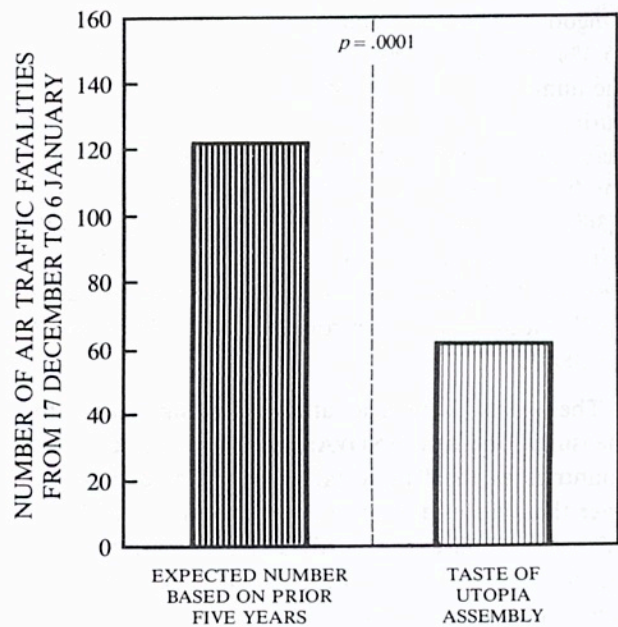

FIG. 9. AIR TRAFFIC FATALITIES. During the Taste of Utopia Assembly the number of air traffic fatalities in the world was 49% lower than the expected number based on the prior five years for the same time of year. It was also 29% lower than the lowest number during the equivalent three-week periods in the prior five years.
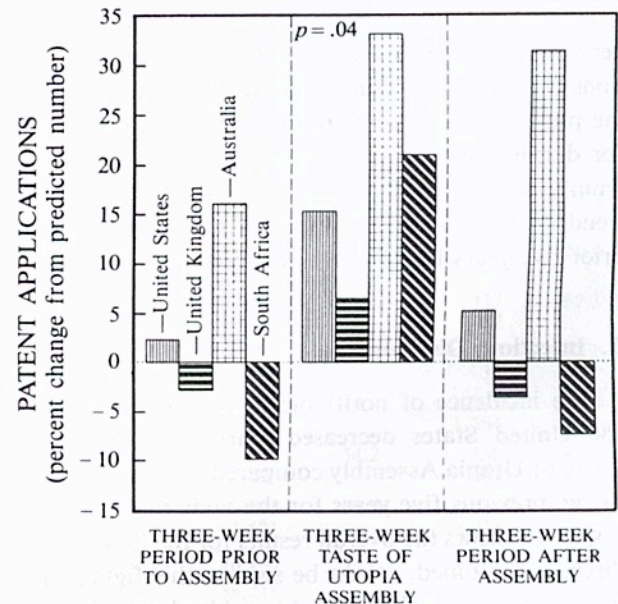

FIG. 10. PATENT APPLICATIONS. During the Taste of Utopia Assembly the number of patent applications in the countries studied increased significantly over the number predicted to occur at that time of year based on data for prior years.

applications in the three-week periods before and after the assembly. After the assembly, the pattern was similar to before the assembly, with more than the predicted number of applications for two countries and less than predicted for the other two.

Patent applications in the United States, the United Kingdom, Australia, and South Africa increased by 15.3%, 6.5%, 33.2%, and 21%, respectively, over the number of applications predicted for the period during the assembly. The predicted and actual numbers of patent applications during the assembly were, for the U.S., 3,543 and 4,085; for the U.K., 1,286 and 1,369; for Australia, 483.6 and 644; and for South Africa, 414.2 and 501. A 2 by 4 chi-square of goodness of fit of predicted and actual number of patent applications by the four countries was 156.5, $df = 3$, $p = .0001$.

These data were also analyzed using a repeated measures one-way ANOVA, with the four different countries as the "subjects" with repeated measures over the before, during, and after periods; $F(2,6) = 7.70$, $p = .04$ (Greenhouse-Geisser probability). Thus, patent applications in the four countries increased significantly during the Taste of Utopia Assembly over the number predicted from prior years and relative to the periods before and after the assembly.

Patent applications in the U.K. showed a significant decreasing linear trend during this time of year (7 December to 6 January) over the prior five years ($r = -.91$) with a decrease of approximately 2.7% per year. Even though the number of patent applications for the U.K. during the assembly was less than the previous year, it was 6.5% more than predicted for during the assembly based on linear regression from prior years. There was no significant linear trend in the number of patent applications over the prior five years for the other countries.

8. Infectious Diseases

The incidence of notifiable infectious diseases in the United States decreased markedly during the Taste of Utopia Assembly compared with the median of the previous five years for the same time of year. Figure 11 shows the overall results for the U.S. for all diseases combined. It can be seen in this figure that during the Taste of Utopia Assembly the total number of cases of infectious diseases decreased by 32% compared to the median number of cases in the previous five years for the same weeks of the year. During

the three one-week periods before the assembly the incidence of disease was 10% to 20% less in 1983 relative to the prior five-year median. After the assembly, the number of cases relative to previous years increased to levels comparable to those prior to the assembly.

The statistical significance of the overall result was assessed by the randomization test (41) on the percent decrease from the prior five-year median during the Taste of Utopia Assembly compared with the mean percent decrease of the three-week before and after periods combined. All 13 diseases decreased more compared with the five-year median during the assembly than during the pre/post period ($p = .0001$). This result shows that the decrease in reported infectious diseases during the Taste of Utopia Assembly cannot be explained by either the usual reduction over the holidays (17 December to 6 January) or by lower levels in the before and after periods compared with the same-week five-year median.

The median number of cases of infectious diseases for the prior five years during the same time of year as the assembly was 58,218, compared with 39,598 during the assembly, a decrease of 18,620 cases (-32%).
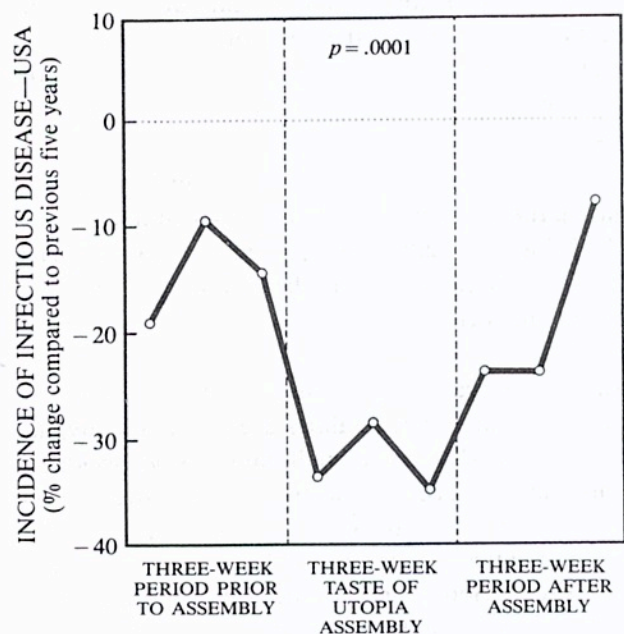

FIG. 11. NOTIFIABLE INFECTIOUS DISEASES: U.S.A. During the Taste of Utopia Assembly the incidence of all categories of notifiable infectious diseases per week in the U.S.A. decreased significantly compared with the median of the previous five years for the same weeks of the year. After the assembly the incidence of infectious diseases began to rise again towards levels comparable to previous years.

Table 4 shows the dramatic reduction in notifiable infectious diseases in the U.S. during the Taste of Utopia Assembly compared with immediately before and after the assembly or compared with the prior five-year median. It can be seen in table 4 that there were decreases during the assembly not only in diseases with short incubation periods of approximately one week (aseptic meningitis, encephalitis, gonorrhea, meningococcal infections, and pertussis) but also decreases in diseases with longer incubation periods (hepatitis, measles, mumps, rubella, syphilis, rabies, and tuberculosis). In addition, the effect of the assembly seemed to be immediate. This can be seen in fig. 11 by the sharp reduction in the incidence of infectious diseases in the first week of the assembly. These facts raise questions about the mechanism

of the effect, which are addressed in the Discussion section of this paper.

Figure 12 also shows essentially the same result for Australia as for the U.S. During the Taste of Utopia Assembly, the incidence of major infectious diseases decreased to 17.2% below the median of the same weeks for the previous four years of available data. Using Fisher's formula, the combined probability of decreased infectious diseases in the U.S. and Australia is $p = .0001$. In the three weeks before the assembly, the frequency of infectious diseases was 16.3% above the median of the same weeks for the previous four years. After the assembly, the incidence rose again to 22.7% above the four-year median for that time of year. Table 5 shows the consistency of the results for different major diseases for Australia.

TABLE 4

NUMBER OF CASES OF MAJOR NOTIFIABLE INFECTIOUS DISEASES IN THE U.S.
BEFORE, DURING, AND AFTER THE TASTE OF UTOPIA ASSEMBLY IN 1983/84
COMPARED WITH THE MEDIAN OF THE FIVE PREVIOUS YEARS FOR THE SAME PERIODS[1]

DISEASE (INCUBATION PERIOD)		PERIOD					
		Before (Nov. 27 – Dec. 17)		During (Dec. 18 – Jan. 7)		After (Jan. 8 – Jan. 28)	
		N	%	N	%	N	%
1. Aseptic Meningitis (1–6 days)	1983/84 Median	584 452	29.2	272 351	−22.5	233 205	13.7
2. Encephalitis (4–21 days)	1983/84 Median	77 64	20.3	40 54	−26.0	31 48	−35.4
3. Gonorrhea Civilian (1–8 days)	1983/84 Median	51,609 59,671	−13.5	35,438 50,898	−30.4	45,916 55,946	−17.9
4. Gonorrhea Military (1–8 days)	1983/84 Median	1,104 1,710	35.4	665 1,252	−46.9	1,250 1,710	−26.9
5. Meningococcal Infections (2–10 days)	1983/84 Median	136 148	− 8.0	97 180	−46.1	137 186	−26.3
6. Pertussis (usually 5–10 days)	1983/84 Median	94 107	−12.1	77 75	2.7	60 48	25.0
7. Hepatitis (15–35 days)	1983/84 Median	1,246 1,773	−29.7	701 1,524	−54.0	1,115 1,436	−22.4
8. Measles[2] (10–15 days)	1983/84 1982/83	15 68	−77.9	15 98	−84.7	39 26	50.0
9. Mumps (usually 18–21 days)	1983/84 Median	228 486	−53.1	131 450	−70.9	117 337	−65.3
10. Rubella[2] (10–15 days)	1983/84 1982/83	27 79	−65.8	20 67	−70.1	15 35	−57.1
11. Syphilis (1–6 weeks)	1983/84 Median	1,720 1,756	− 2.1	1,218 1,423	−14.4	1,505 1,764	−14.7
12. Rabies (10 days to 6 months)	1983/84 Median	194 243	−20.2	103 225	−54.2	136 260	−47.7
13. Tuberculosis (variable)	1983/84 Median	1,608 1,743	− 7.8	821 1,621	−49.4	916 1,274	−28.1
Total	1983/84 Median	58,642 68,300	−14.1	39,598 58,218	−32.0	51,470 63,275	−18.7

$p = .0001$, randomization test.

1. Percentages refer to the percent change in 1983/84 compared with the median of the prior five years.
2. Measles and rubella were compared with the previous year because the number of cases had been decreasing dramatically in recent years due to inoculation programs.

TABLE 5

AVERAGE NUMBER OF CASES PER WEEK OF MAJOR NOTIFIABLE INFECTIOUS DISEASES IN AUSTRALIA
BEFORE, DURING, AND AFTER THE TASTE OF UTOPIA ASSEMBLY IN 1983/84
COMPARED WITH THE MEDIAN OF THE FOUR PREVIOUS YEARS FOR THE SAME PERIODS[1]

DISEASE		Before (Nov. 26 – Dec. 16)		During (Dec. 17 – Jan. 7)		After (Jan. 8 – Jan. 28)	
		N	%	N	%	N	%
1. Hepatitis	1983/84	20.0	− 4.8	9.0	− 58.1	22.3	3.7
	Median	21.0		21.5		21.5	
2. Tuberculosis	1983/84	35.3	41.2	17.7	− 21.3	25.0	28.2
	Median	25.0		22.5		19.5	
3. Gonorrhea	1983/84	207.0	1.0	109.7	− 26.1	264.0	18.9
	Median	205.0		148.5		222.0	
4. Salmonella	1983/84	44.7	54.1	43.0	38.7	70.0	53.8
	Median	29.0		31.0		45.5	
5. Syphilis	1983/84	56.3	39.0	23.7	− 23.5	56.0	− 2.6
	Median	40.5		31.0		57.5	
6. Meningococcal Infections, Malaria, and Pertussis	1983/84	22.7	97.4	16.0	60.0	22.3	53.8
	Median	11.5		10.0		14.5	
Total	1983/84	386.0	16.3	219.1	− 17.2	459.6	20.8
	Median	332.0		264.5		380.5	

$p = .008$, randomization test.

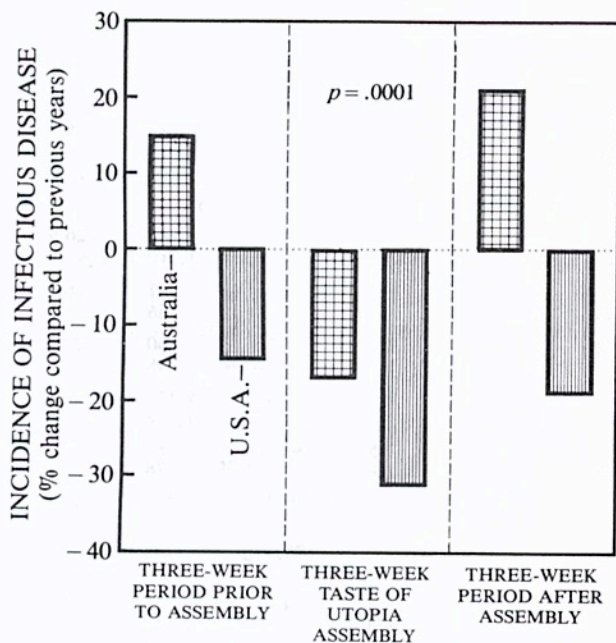1. Percentages refer to the percent change in 1983/84 compared with the median of the prior four years.

FIG. 12. NOTIFIABLE INFECTIOUS DISEASES: U.S.A. AND AUSTRALIA. During the Taste of Utopia Assembly the incidence in all categories of notifiable infectious diseases decreased significantly compared to the median for the same weeks of prior years in Australia as well as in the U.S.A., indicating that the decrease was not due to local conditions on the North American continent. (Number of previous years considered—four years for Australia, five years for U.S.A.)

9. Crime

The incidence of crime decreased significantly during the Taste of Utopia Assembly in Washington, D.C., U.S.A., in Karachi, Pakistan, and in the state of Victoria, Australia. (At the time of writing these were the only data available. See Method section.)

Time series analysis of the crime data from July 1983 to January 1984 was performed on weekly totals in two of the three locations (Karachi and Victoria), while for the Washington, D.C. area daily figures were analyzed. While daily figures were preferred, weekly totals were used for Victoria and Karachi to improve the stability of the series. In the case of Victoria, the daily totals represented the day on which the statistics office recorded the reported offense rather than the day of occurrence. The office was closed on weekends, causing a very large number of recorded offenses on Monday, and in general a several-day lag was common. In this case it was felt that weekly totals represented a more stable figure. For Karachi, the daily figures were quite small and weekly totals were used to increase reliability.

The model tested is the zero-order transfer function model

$$Y_t = \omega_0 I_t + N_t,$$

where Y_t is the observed time series, I_t is an intervention step function which is "0" prior to the assembly and "1" during the assembly, ω_0 is the assembly parameter showing the effect of the assembly, and N_t is a stochastic noise component to be modeled by autoregressive integrated moving average (ARIMA) models.

The daily data for Washington, D.C. had a somewhat complex stochastic structure. Differencing of the data at a seven-day lag was required to make the series stationary. In addition, moving average parameters at lags one, four, and seven days were required to prewhiten the time series, as well as a constant trend component indicating a trend of increasing crime over time. This model was able to successfully transform the series into a random disturbance around a zero value, removing any predictable ARIMA structure within the series prior to testing the intervention effect. The joint estimation of the intervention component and noise model yielded a highly significant intervention parameter $t(202) = -3.60$, $p = .0002$, indicating a decrease in crime during the assembly. Table 6 lists each of the parameter estimates and their significance level. The Ljung-Box diagnostic statistic (chi-square $= 28$, $df = 31$, $p > .50$) indicated a lack of residual autocorrelation structure and adequate fit of the ARIMA model.

The two time series for Karachi, Pakistan and the state of Victoria, Australia consisted of 30 and 31 weekly data points, respectively. Both series were already random noise series, lacking any significant autocorrelations to lag 29. In both cases, a constant

value and the assembly parameter were estimated, as listed in table 6. For Karachi, the assembly parameter of -41.8 indicated a significant decrease of 42 crimes per week during the assembly, $t(28) = -2.40$, $p = .03$. For the state of Victoria, there was a highly significant decrease of 538 crimes per week, $t(29) = -3.36$, $p = .002$. In both analyses, the Ljung-Box test for the joint significance of residual autocorrelations was nonsignificant, indicating the appropriateness of the model (for each, chi-square $= 25$, $df = 26$, $p > .50$).

Figure 13 displays the results for all three locations in terms of percentage change of daily (Washington, D.C.) or weekly (Karachi and Victoria) crime totals during the assembly period from the average crime totals during all other periods from July 1983 through January 1984. Combining the results of the independent tests of the effects of the assembly at all three locations by Fisher's formula yields chi-square $= 36.84$, $df = 6$, $p = 2 \times 10^{-6}$ (19).

In order to assess whether similar decreases in crime occurred during the same season in prior years, weekly crime totals for the months of December and January for the 11 years 1972/1973 to 1982/1983 were analyzed. For Karachi and Victoria, the independence of the weekly figures was already established by the time series analysis previously described. Therefore, t-tests were used to compare the three weeks equivalent to the assembly period (the last two weeks in December and the first week in January) to

TABLE 6

PARAMETER ESTIMATES AND SIGNIFICANCE TESTS
FOR TIME SERIES ANALYSIS OF CRIME DATA

LOCATION	PARAMETER	PARAMETER ESTIMATE	t	p
Washington,	MA 1	-0.11	-1.62*	.06
D.C., U.S.A.[a]	MA 4	0.16	2.32*	.03
	MA 7	0.85	22.46*	.0001
	Trend	1.06	3.96*	.0001
	Assembly	-5.74	-3.60*	.0002
Karachi,	Mean	270.40	49.07†	.0001
Pakistan[b]	Assembly	-41.80	-2.40†	.03
Victoria,	Mean	4,159.00	83.63‡	.0001
Australia[b]	Assembly	-537.70	-3.36‡	.002

* 202 degrees of freedom   a) Daily data
† 28 degrees of freedom   b) Weekly data
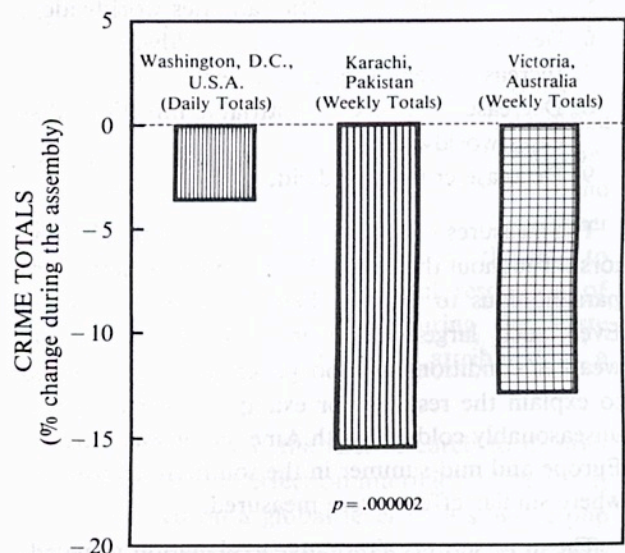‡ 29 degrees of freedom

FIG. 13. CRIME TOTALS. Using time series analysis it was found that during the Taste of Utopia Assembly significant decreases occurred in daily or weekly crime totals, in locations on three continents, in comparison with the average daily or weekly totals for the twenty-four weeks prior to and three weeks after the assembly.

the weeks falling either before or after the assembly (the first two weeks of December and the last three weeks of January). Neither of the t-tests for Karachi or Victoria approached statistical significance (for Karachi, $t(86) = .76$; for Victoria, $t(86) = -1.22$).

The daily data for Washington, D.C. from July 1983 to January 1984 were also aggregated into weekly totals and found to have no significant autocorrelations to lag 28. This indicated that the same procedure was appropriate to test for yearly seasonality in Washington as for the other two locations. Weekly data were only available for Washington from December 1980 to January 1983 (the three prior years). The t-test for this data did not approach significance ($t(22) = .88$), indicating that the crime results could not be attributed to yearly seasonal changes.

DISCUSSION

The results support the hypotheses of the experiment that the Taste of Utopia Assembly would:

1. Facilitate the progress of heads of state in solving problems
2. Create a calming influence in the world's trouble-spot areas
3. Ease the conflict in Lebanon
4. Cause a rise in the World index and a simultaneous rise in different stock indices around the world
5. Decrease highway traffic fatalities worldwide
6. Decrease air traffic fatalities worldwide
7. Increase patent applications worldwide
8. Decrease incidence of notifiable infectious diseases worldwide
9. Decrease crime worldwide

The measures sampled such widely different behaviors throughout the world that it would be highly unparsimonious to explain them by local influences. Even such large-scale phenomena as continental weather conditions are too geographically localized to explain the results. For example, whereas it was unseasonably cold in North America, it was warm in Europe and mid-summer in the southern hemisphere where similar effects were measured.

The most serious alternative explanation to be addressed was seasonality. Seasonality was controlled for by showing that the changes during the assembly were statistically significant compared to the same weeks of the year in prior years. This comparison showed that the results cannot be attributed to December 1983 and January 1984 being generally better than previous years.

Comparison of change during the assembly with before and after the assembly showed that the improvement in quality of life in the world was greater during the specific three-week period of the Taste of Utopia Assembly compared to the three weeks before and after the assembly. The rapid onset of positive effects coincident with the beginning of the assembly and the immediate reversion to prior levels after the assembly is compelling experimental evidence of a unified coordinating influence throughout the world that was enlivened by the group of 7,000 experts in the Maharishi Technology of the Unified Field at MIU.

The support of the specific research hypotheses by the present experiment lends credence to the general theoretical perspective presented by Maharishi's theory of collective consciousness that:

1. There is a collective consciousness that is generated by the individuals in society and which reciprocally affects the thought and behavior of each individual in society.

2. Collective practice of the Maharishi Technology of the Unified Field by the square root of one percent of the world's population enlivens the evolutionary qualities of the unified field throughout world consciousness.

Heads of State

The beneficial effect of the Taste of Utopia Assembly on statements and actions of heads of state supports an important aspect of Maharishi's theory of collective consciousness which states that the feeling and behavior of the head of state innocently mirror national consciousness and therefore provide the best assessment of how much positive effect from the Taste of Utopia Assembly reached his or her country (28). In this view, a change in the feeling and behavior of the head of state is not an isolated phenomenon; it reflects a change in the entire population. Thus the improvements in the statements and actions of heads of state during the Taste of Utopia Assembly indicate that the world population began to function at a higher level of maturity, reflecting greater coherence and positivity in national and world consciousness at that time.

Control data from the previous year indicated that events pertaining to heads of state did not become more positive in the prior year at the same time of year in which the Taste of Utopia Assembly was held. This suggests that the rise in positivity during the assembly was not merely due to a "holiday spirit."

Inspection of the data suggests that not only was there a statistically significant quantitative shift in the behavior of heads of state during the assembly but there also appeared to be a qualitative change. Before and after the assembly, the dominant tendency of heads of state appeared to be to direct public attention towards negative stereotyping of antagonists within or outside their countries and to perceive the antagonist as the source of the countries' problems. By contrast, during the assembly heads of state showed a greater tendency to accept responsibility for the national condition and an increased emphasis on strengthening the nation from within as the solution to problems.

Some examples are:

— U.S. President Reagan's acceptance of responsibility for the "bad as well as the good," with regards to the events in the Middle East (*The New York Times,* 28 December 1983, p. 1)
— U.S.S.R. Premier Yuri V. Andropov's strong admonishment to Soviet society to solve the nation's economic ailments (*The New York Times,* 28 December 1983, p. 1)
— Poland's Chairman Jablonski's appeal for national reconciliation as amnesty expired for political dissidents and underground Solidarity activists (*The New York Times,* 1 January 1984, p. 4)
— President Reagan's feeling that the time was right to establish a constructive working relationship with the U.S.S.R. after an extremely cold period in U.S.-Soviet relations (*The New York Times,* 7 January 1984, p. 3)

In the months prior to the Taste of Utopia Assembly, U.S.-Soviet relations had seriously deteriorated; following the Korean airline incident, the deployment of American missiles in Europe, and the Soviet walk-out from the arms talks, there had been no top-level diplomatic communication between the two superpowers. During the assembly relations began to thaw, as evidenced by an agreement that U.S.S.R. Foreign Secretary Gromyko and U.S. Secretary of State Schultz would meet in Stockholm.

These changes are parallel to stage changes in level of consciousness that occur in individuals as their physiology matures to support broader comprehension in resolving moral dilemmas (40). Since these changes in heads of state reflect changes in the population they represent, it would seem that nations and even the world have "collective physiologies" with corresponding levels of consciousness. The reduction of infectious diseases during the Taste of Utopia Assembly suggests an improvement in the functioning of the collective physiology. Broader comprehension in solving conflicts is not only demonstrated by the effect of the Taste of Utopia Assembly on heads of state, but also by reduced crime and international conflicts in the world. These results demonstrate that the level of moral behavior of collective consciousness can be immediately raised by coherence creating groups of the requisite size practicing the Maharishi Technology of the Unified Field.

International Conflicts

The reduced conflict in the world observed in the present experiment was not due to a "holiday spirit." Control data from the previous year for international conflicts worldwide and for the civil war in Lebanon and control data from the Conflict and Peace Data Bank file (4) for worldwide events and for trouble-spot areas all indicated that there is not a tendency towards reduced armed conflicts during the Christmas and New Year season. In addition, analysis of ten years of data from the COPDAB file showed that conflicts do not typically decrease during the Christmas and New Year season relative to the three weeks before and after the season. Furthermore, other research using the Maharishi Technology of the Unified Field has demonstrated reduced international conflicts during other times of year than Christmas and New Year: November (34, 36), August and September (32), and April and July (2). Therefore, *the shift to increased progress towards peaceful resolution of international conflicts observed during the Taste of Utopia Assembly could not be attributed to a seasonal effect.*

The present study is the first research to demonstrate that a calming effect on international conflicts can be achieved on a global level by a single group situated in one place. Previous research has demonstrated this phenomenon on the city, provincial, and national levels. These experiments used the same or similar measures of international conflict that were used in the present research. In 1983, international

conflicts were found to decrease in Lebanon when the size of a coherence creating group in Jerusalem rose towards one percent of the square root of Israel's population (32). This suggests that, when there is intense interaction between two systems of collective consciousness, creating coherence in one strongly and beneficially influences the other. The Lebanese conflict also subsided during a World Peace Assembly when 2,300 experts in the Maharishi Technology of the Unified Field gathered in Yugoslavia in April 1984 (2).

Previous research has also demonstrated that international conflicts decreased in the autumn of 1978 when teams of experts in the Maharishi Technology of the Unified Field went to the five major trouble-spot areas of the world (34, 36). In another experiment during the civil war in Lebanon, introduction of this technology directly into a Lebanese village resulted in a dramatic attenuation of fighting in the village, in contrast to continued fighting in surrounding villages (1).

The strategy in these previous experiments was to send "fire fighting brigades" to an area proximate to the vicinity of the conflict. The present research demonstrated an easier method of producing the influence. Whereas the World Peace Project of 1978 and the study in Lebanese villages showed that a coherent influence could be created in conflict areas by a group of experts in the Maharishi Technology of the Unified Field being in the area, and whereas the Israel Project (32) showed that placing such a group in an adjoining country could calm the area, the present research has demonstrated that coherence in collective consciousness can be produced on one side of the globe and influence the other, e.g., from Fairfield, Iowa, U.S.A. to Beirut, Lebanon.

These coherence creating groups can be viewed as neutralizing the accumulation of stress in collective consciousness by raising life to be more in accordance with natural law. In Maharishi's analysis, violation of natural law by individuals is the source of stress in society (28). Violation of natural law means behavior that is damaging to the well-being and evolution of the individual himself as well as to others in society. The atmosphere or collective consciousness has a great deal of flexibility in sustaining the buildup of stress, but when its elastic limits are exceeded accumulated collective stress erupts in the outbreak of collective disasters, such as war. The process of neutralizing stress through such violent phase transi-

tions is not a lasting solution because it sows the seeds for the future accumulation of stress which will become the next generation's war. Wars and other collective disasters can only be prevented by enlivening the unified field, the source of natural law, in collective consciousness so that life in society grows in accordance with all the laws of nature.

Stock Markets

The effects of the Taste of Utopia Assembly on stock markets replicate on a world level what previous research had shown on national and local levels in the United States (11, 26, 33), the United Kingdom (5), and Israel (32). Stock market data is unique in being an easily obtainable, accurate daily index of collective behavior that can be studied by sophisticated time series analytical techniques. In another paper we report the use of Box-Jenkins models to analyze the impact of the assembly on the World index of international stock prices (8). This study shows that the changes during the Taste of Utopia Assembly could not be accounted for by trends or cycles characterizing the series' own dynamics. Indeed, the ARIMA model of the World index forecast virtually no change during the assembly, whereas the assembly actually produced a large increase above the forecast level. After the assembly, the World index declined over the period of a month back to its forecast level.

The stock market is highly sensitive to the situation in the world since large investors closely monitor international events and modulate their investment strategies accordingly. The simultaneous rise in stock markets around the world can thus be interpreted as indicating a wave of optimism within the business sector of the nations of the world. Although the stock markets are a measure of activity within the capitalist economic system, we believe that the influence of increased coherence in collective consciousness is equally beneficial to all economic and governmental systems, and will provide the ultimate means to bring together all socioeconomic systems into a mutually beneficial relationship.

Traffic Fatalities

The reduction of road and air traffic fatalities during the Taste of Utopia Assembly replicates the results of previous research in Holland (7) and the U.S. (11, 17), and extends these results to a global scale.

Patent Applications

In order to explain the increased number of patent applications during the Taste of Utopia Assembly over the expected number for that time of year, we first consider that at any time there must be thousands of inventors in the final stages of the process of preparing an application. The present theory of collective consciousness predicts that, if the coherence in collective consciousness increases, the process of evolution would be enlivened on all levels of life. This would naturally be reflected in increased creativity, confidence, liveliness, and efficiency in those working on patents, resulting in more applications completed and mailed.

Infectious Diseases

The reduction in the incidence of notifiable infectious diseases needs consideration. Firstly, the reduction was apparently not just due to a seasonal consideration of people putting off going to the doctor or because of lower availability of doctors during the holidays, because during the Taste of Utopia Assembly the number of reported cases fell to more than 30% below the median level for the same time of year of previous years.

Nor was the reduction due to people putting off going to the doctor because of the cold weather that occurred in North America; the reduction was also seen in Australia which was in its summer season. In addition, if people were delaying going to the doctor for whatever reason during the period of the assembly, one would expect a compensatory increase in the number of cases in the weeks following the assembly. This was not observed. Furthermore, some of the diseases that decreased, such as aseptic meningitis, have acute, severe symptoms which do not warrant delaying treatment. The data, therefore, lead to the conclusion that the incidence of virtually all infectious diseases substantially decreased during the assembly.

There are two mechanisms that may explain this result. The first is decreased contact with the etiologic agent and the second is increased resistance of the host. Decreased contact with the etiologic agent could explain the observed decrease in rapidly incubating diseases. This explanation would posit that when coherence increases in collective consciousness, life styles in the population become more health promoting and therefore less contact would be made with etiologic agents. The result would be a decrease in the incidence of disease which would be observed after a

lag period equal to the incubation time. Since the different varieties of infectious diseases studied have different means of transmission, that is, contact with objects, insects, animals, other humans, etc., the reduction during the assembly points to an increase in a broad spectrum of health-promoting behaviors in the population.

The second explanation, strengthening the host, could explain the reduction of diseases with long as well as short incubation periods. This view suggests that under usual conditions (not during epidemics) some proportion of the population contacts various etiologic agents and those who cannot resist the agent fall ill. If increased coherence in collective consciousness increases the efficiency of the immune system by producing greater overall balance in physiological systems, then a proportion of those individuals who had contracted a disorder but who had not yet manifested symptoms by the time of the assembly would, owing to increased host resistance, successfully resist the disease before manifestation. As a result, a reduction of the incidence even of long-incubation disorders would occur shortly after the assembly began.

It is well known that stress affects the immune system (27). And it has been established that the Transcendental Meditation and TM-Sidhi program, which is a technology of consciousness, can profoundly reduce stress and improve physiological health (9, 38). Similarly, the present results indicate that physiological functioning of individuals in a population is affected by the collective consciousness of the population as well as by the individual's own consciousness. Thus, increased coherence in collective consciousness produces profound and immediate improvements in the physiological functioning of individuals throughout society, resulting in the better health of the entire population.

Crime

The reduction of crime totals during the Taste of Utopia Assembly replicates the results of previous research on the collective effects of the Maharishi Technology of the Unified Field on the city, provincial, and national levels (6, 7, 13, 14, 15, 16, 25). The results of the present time series analysis indicate that the effects found here are not attributable to seasonal variation or to the prior history of the crime trends, and extend the prior findings of crime reduction to locations on several continents simultaneously through the collective practice of the Maharishi Technology of the Unified Field by the square root of one

percent of the world's population from one place on earth.

CONCLUSION

Virtually all previous attempts to improve the quality of life in any country have operated on a superficial level of behavior and therefore have not substantially altered the underlying collective consciousness of the nation. This explains why efforts to create world peace through diplomatic means and through institutions created for this purpose, such as the United Nations, have not succeeded. The requisite technology for fundamentally improving the individual's neurophysiology and consciousness and, through the individual, improving the nation's collective consciousness has been lacking.

Through the Maharishi Technology of the Unified Field, the individual directly taps the unified field of all the laws of nature which, being self-referral, is a field of consciousness, the Cosmic Psyche (35). This enlivens the evolutionary qualities of the unified field in individual and collective life, as has been demonstrated by over 340 physiological, psychological, and sociological experiments (9, 38). As the individual becomes more in tune with natural law, so does the larger society in which he or she lives; individual consciousness, collective consciousness, and thus government and education all grow in accordance with natural law.

The scientific reality of the Maharishi Effect is substantiated by strong and convincing evidence on the city, provincial, national, and now world level. Based on this evidence, Maharishi International University is dedicated to establishing a permanent coherence creating group of 7,000 experts in the Maharishi Technology of the Unified Field to ensure world peace and to serve as the foundation of a unified field based civilization. Having seen the worldwide beneficial effects of the Taste of Utopia Assembly, now it is the responsibility of the people and governments of all nations to create utopia in their countries.

APPENDIX A

Criteria and Examples Used To Guide Categorization of Events in Content Analysis of Newspaper Reports of the Speech and Actions of Heads of State

1. POSITIVE TREND, POSITIVE EVENT—This category contains events in which the prior trend was positive and the event pertaining to the head of state was a continuation or increase of the positive trend. Judgement of whether or not a prior trend was positive was based on knowledge of the world events and background information either given in the articles or gained from other media sources.

Examples:

a. It may be generally known that the head of state has been healthy and vital in office. This would qualify as a positive prior trend. If the event was indicative of support of his or her continuation in office, it would be a continuation of the positive trend, and rated positive trend, positive event.

b. Relations between two countries have been warming up for a number of years. The head of state of one country visits the other and the outcome is positive.

c. The head of state has been popular and the news event reports a national celebration honoring him.

2. NEGATIVE TREND, POSITIVE EVENT—This category contains events which show progress towards reversal of a prior negative trend.

Examples:

a. Head of state known to be sick is a prior negative trend. If he recovers, or if there is evidence of his vitality seen as an ability to lead and direct government effectively, then this is a positive event on the background of a negative trend.

b. Head of state takes the lead in correcting problems facing the country. For example, corruption in government (prior negative trend) has been exposed and head of state does something to purify situation (positive event).

3. POSITIVE TREND, NEGATIVE EVENT—This category contains prior positive trends that become negative or negative events on the background of positive trends. Any trend that goes from good to bad fits into this category.

Example:

a. Head of state visits second nation with which his

nation has had prior friendly relations. Head of state makes disparaging remarks about the future of the two nations.

4. NEGATIVE TREND, NEGATIVE EVENT—This category contains prior negative trends continuing to be negative or becoming worse.

Examples:

a. On the background of the existence of a prior negative trend, the head of state's action promotes a continuation of the trend.

b. The head of state, for political or other purposes, ignores and does not act to correct a problem facing the country.

APPENDIX B

International Conflict Scale

+ 3 STRONG POSITIVITY—Major progress towards voluntary resolution of conflict and creation of a stable peace with all parties involved apparently attaining objectives; dignity maintained by all.

+ 2 MODERATE POSITIVITY—Concluding agreements on disarmament; arbitration; forced resolution.

+ 1 SLIGHT POSITIVITY—Mediation; negotiations with cease-fire in force.

 0 UNCHANGED NEGATIVE CONDITIONS—Neutral or nonsignificant acts; rhetorical policy statements; indifference or no comment statements; temporary cease-fire.

− 1 MILD NEGATIVITY—Hostile verbal attack; giving sanctuary to terrorists; guerrilla activities on limited basis; only minor isolated incidents reported such as sniper fire.

− 2 MODERATE NEGATIVITY—Limited air, sea, or border skirmishes; annexation of occupied territory; imposition of blockades; assassination attempt on leaders; major material support for subversive activities; terrorist acts; intermittent shelling or clashes; sporadic bombing of military and/or industrial areas; small-scale interception or shelling of ships; mining territorial waters.

− 3 STRONG NEGATIVITY—Full-scale air, naval, or land battles; major bombing of military and civilian targets; occupation or invasion of territory; assassination of national leader or key political figure.

APPENDIX C

Data Sources for Stock Indices, Traffic Fatalities, Air Traffic Fatalities, Patents, and Infectious Diseases

STOCK INDICES—Daily closing prices of the World index of Capital International S.A., Geneva, the Dow Jones Industrial Average, and major stock indices were obtained from *The Wall Street Journal*. Weekly data on 19 markets were obtained from *Barron's National Business and Financial Weekly*. Data for the Johannesburg Stock Exchange were obtained from the *Rand Daily Mail* 100.

TRAFFIC FATALITIES—U.S. traffic fatality data were provided by telephone from the statistics department of the National Safety Council in Chicago.

For Australia, data on traffic fatalities for the period 17 December to 6 January or the nearest equivalent for 1978/79 to 1983/84 were provided for Western Australia by the Police Department, Traffic Licensing and Services Centre in Perth. Data for 17 December to 6 January for the years 1978/79 to 1983/84 were provided for New South Wales, Australia by the Traffic Accident Research Unit of the State Police Department in Sydney. Traffic fatalities data for Victoria for 17 December to 6 January for 1978/79 to 1983/84 were provided by the Road Traffic Authority, Hawthorn, Victoria. The figures for Western Australia, New South Wales, and Victoria were added together to provide an estimate for all of Australia.

Traffic fatality data for South Africa for 17 December to 6 January for the years 1978/79 to 1983/84 were provided by the National Road Safety Council of the Republic of South Africa.

AIR TRAFFIC FATALITIES—The International Civil Aviation Organization data on the number of serious air traffic accidents involving planes over 2,250 kg and the number of fatalities for non-U.S. countries

were provided by the National Transportation and Safety Board in Washington, D.C., U.S.A. The ICAO statistics are based on voluntary reports from cooperating countries.

Air traffic fatalities for the U.S. were provided by the National Transportation Safety Board. The U.S. statistics include all air traffic fatalities, most of which are for aircraft under 2,250 kg.

PATENTS—Data on the actual as well as expected patent applications filed in the U.S. were provided by the U.S. Patent Office in Arlington, Virginia. Patent application figures for the United Kingdom were pro-

vided by the U.K. Patent Office. The number of standard patent applications lodged in Australia was provided by the information officer, Australian Patent Information Service, Patent, Trade Marks and Designs Office, Woden. The number of patent applications in South Africa was provided by the Government Patent Office in Pretoria.

INFECTIOUS DISEASES—For the U.S., data were provided by the Center for Disease Control in Atlanta, table 1 of *Morbidity and Mortality Weekly Report*. For Australia, data were provided by the Department of Health, Commonwealth of Australia.

APPENDIX D

The Australian 1983 World Peace Assembly

In the context of using the prior five years as a control period for the Taste of Utopia Assembly, it was discussed above that Australia held a World Peace Assembly in January 1983. Approximately 400 expert participants in the group practice of the Maharishi Technology of the Unified Field gathered in Australia. This number exceeds the square root of one percent of the national population. Since the time of the course overlapped with the data available from 7–27 January 1983 for traffic fatalities, patents, infectious diseases, and the stock market, the effects of this World Peace Assembly on Australia were also assessed.

To control for the time of the year, the predicted value for January 1983 was computed from linear regression on same-week data for prior years. For traffic fatalities, ten years of data were available for the whole month for all of Australia. The slope of the linear regression coefficient for the ten years was virtually 0, thus the mean was used as the best estimate of the expected value for January 1983.

It was found that the World Peace Assembly influenced all measures in the predicted direction. The following is a summary of results:

1. Traffic fatalities, Western Australia and New

South Wales:
predicted = 99
actual = 63 (−36.4%, lowest in five years)
2. Traffic fatalities, whole country, all of January:
nine-year mean for January = 272 (S.D. = 19.64)
January 1983 = 204 (−23.9%, lowest in ten years)
3. Patent applications:
predicted = 580
actual = 742 (+28.9%, highest in five years)
4. Stock market:
prior four-year mean = −2.46% (median = −.91%)
actual = 6.35% (2nd highest in five years)
5. Infectious diseases (per week):
prior three-year mean = 414.2 (median = 441.7)
actual = 318 (−28% from prior three-year mean)

By considering each measure as a separate replication, the combined probability of the pattern of results seen during the Australian World Peace Assembly can be conservatively estimated as $\frac{1}{10} \times \frac{1}{5} \times \frac{2}{5} \times \frac{1}{4} = .002$ (for traffic fatalities, patents, stocks, and infectious diseases, respectively; e.g., lowest traffic fatalities in ten years = $\frac{1}{10}$, etc.). This shows that the Australian World Peace Assembly produced a significant improvement in the quality of life in the nation.

---

and Robert Warren for providing the data from Australia. In addition, we would like to thank Garance Gelderloos and Kristine Wood for their excellent help in preparing the manuscript, and Rhoda Orme-Johnson for her editorial assistance.

REFERENCES

1. ABOU NADER, T. M.; ALEXANDER, C. N.; and DAVIES, J. L. In press. The Maharishi Technology of the Unified Field and reduction of armed conflict: A comparative, longitudinal study of Lebanese villages. In *Scientific research on the Transcendental Meditation and TM-Sidhi programme: Collected papers,* vol. 4, ed. R. A. Chalmers, G. Clements, H. Schenkluhn, and M. Weinless. Rheinweiler, W. Germany: MERU Press. (Hereafter cited as *Collected papers.*)

2. ALEXANDER, C. N.; ABOU NADER, T. M.; CAVANAUGH, K.; DAVIES, J. L.; DILLBECK, M. C.; KFOURY, R. J.; and ORME-JOHNSON, D. W. In press. 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. In *Collected papers,* vol. 4.

3. ALEXANDER, C. N., and DAVIES, J. L. 1983. International peace research project: Proposal for Israel. July.

4. AZAR, E., and HAVENER, T. 1976. Discontinuity in the symbolic environment: A problem in scaling events. *International Interactions* 2: 231–246.

5. BERESFORD, M. S., and CLEMENTS, G. In press. The group dynamics of consciousness and the U.K. stock market. In *Collected papers,* vol. 4.

6. BORLAND, C., and LANDRITH III, G. S. 1977. Improved quality of city life through the Transcendental Meditation program: Decreased crime rate. In *Scientific research on the Transcendental Meditation program: Collected papers,* vol. 1, ed. D. W. Orme-Johnson and J. T. Farrow, pp. 639–648. Rheinweiler, W. Germany: MERU Press. (Hereafter cited as *Collected papers.*)

7. BURGMANS, W. H. P. M.; BURGT, A. T. VAN DER; LANGENKAMP, F. P. TH.; and VERSTEGEN, J. H. In press. Sociological effects of the group dynamics of consciousness: Decrease of crime and traffic accidents in Holland. In *Collected papers,* vol. 4.

8. CAVANAUGH, K. L.; ORME-JOHNSON, D. W.; and GELDERLOOS, P. In press. The effect of the Taste of Utopia Assembly on the World index of international stock prices. In *Collected papers,* vol. 4.

9. CHALMERS, R. A.; CLEMENTS, G.; SCHENKLUHN, H.; and WEINLESS, M., eds. In press. *Scientific research on the Transcendental Meditation and TM-Sidhi programme: Collected papers,* vols. 2, 3, and 4. Rheinweiler, W. Germany: MERU Press. (Hereafter cited as *Collected papers.*)

10. CLEMENTS, G.; HAGELIN, J. S.; WEINLESS, M.; SARMA, P. K.; and BADAWI, K. In press. Vedic Science and modern science: Physics. In *Scientific research on the Transcendental Meditation and TM-Sidhi programme: Collected papers,* vol. 5, ed. R. A. Chalmers, G. Clements, H. Schenkluhn, and M. Weinless. Rheinweiler, W. Germany: MERU Press.

11. DAVIES, J. L., and ALEXANDER, C. N. In press. 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. In *Collected papers,* vol. 4.

12. DE WIT, B., and NICOLAI, H. 1982. $N = 8$ supergravity. CERN, preprint no. CERN-TH-3291.

13. DILLBECK, M. C.; CAVANAUGH, K. L; and BERG, W. P. VAN DEN. In press. The effect of the group dynamics of consciousness on society: Reduced crime in the Union Territory of Delhi, India. In *Collected papers,* vol. 4.

14. DILLBECK, M. C.; FOSS, A. P. O.; and ZIMMERMANN, W. J. In press. Maharishi's Global Ideal Society Campaign: Improved quality of life in Rhode Island through the Transcendental Meditation and TM-Sidhi program. In *Collected papers,* vol. 4.

15. DILLBECK, M. C.; LANDRITH III, G.; and ORME-JOHNSON, D. W. 1981. The Transcendental Meditation program and crime rate change in a sample of forty-eight cities. *Journal of Crime and Justice* 4: 25–45. (Also in *Collected papers,* vol. 4.)

16. DILLBECK, M. C.; LANDRITH III, G. S.; POLANZI, C.; and BAKER, S. R. In press. The Transcendental Meditation program and crime rate change: A causal analysis. In *Collected papers,* vol. 4.

17. DILLBECK, M. C.; LARIMORE, W. E.; and WALLACE, R. K. In press. A causal analysis of the role of the Maharishi Technology of the Unified Field in the 1982 reduction of traffic fatalities in the United States. In *Collected papers,* vol. 4.

18. DIXON, W. J., ed. 1983. *BMDP statistical software.* Rev. ed. Berkeley, Los Angeles, and London: University of California Press.

19. FISHER, R. A. 1932. *Statistical methods for research workers,* 4th ed. Edinburgh: Oliver & Boyd.

20. FRANE, J. W. 1980. *The univariate approach to repeated measures: Foundation, advantages, and caveats.* BMDP Technical Report No. 69, BMDP Statistical Software.

21. HAGELIN, J. S. 1984. Is consciousness the unified quantum field? Maharishi International University, Fairfield, Iowa, U.S.A., preprint no. MIU-THP-012.

22. HAGELIN, J. S.; CLEMENTS, G.; and SARMA, P. K. In press. The contribution of the Maharishi Technology of the Unified Field to physics: A new integrated approach. In *Collected papers,* vol. 5.

23. KING, K. D. 1983. *Institute of World Leadership, Maharishi International University.* Livingston Manor, New York: MIU Press.

24. LANDRITH III, G. S., and DILLBECK, M. C. In press. The growth of coherence in society through the Maharishi Effect: Reduced rates of suicides and auto accidents. In *Collected papers,* vol. 4.

25. LANFORD, A. G. In press. Reduction in homicide in Washington, D.C. through the Maharishi Technology of the Unified Field, 1980–83: A time series analysis. In *Collected papers,* vol. 4.

26. LANFORD, A. G. In press. 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. In *Collected papers,* vol. 4.

27. LOCKE, S. E. 1982. Stress adaptation and immunity: Studies in humans. *General Hospital Psychiatry* 4: 49–53.

28. MAHARISHI MAHESH YOGI. 1977. *Creating an ideal society.* Rheinweiler, W. Germany: MERU Press.

29. MCNEMAR, Q. 1969. *Psychological statistics,* 4th ed. New York: Wiley.

30. ORME-JOHNSON, D. W. 1982. Prison rehabilitation and crime prevention through the Transcendental Meditation and TM-Sidhi program. In *Holistic approaches to offender rehabilitation,* ed. L. J. Hippchen, pp. 346–386. Springfield, Illinois: Charles C Thompson.

31. ORME-JOHNSON, D. W. 1982. Scientific research on the World Peace Project. Paper presented at the United Nations, New York, Dag Hammarskjold Auditorium, 29 June.

32. ORME-JOHNSON, D.; ALEXANDER, C. N.; DAVIES, J. L.; CHANDLER, H. M.; and LARIMORE, W. E. In press. International peace project in the Middle East: The effect of the Maharishi Technology of the Unified Field. In *Collected papers,* vol. 4.

33. ORME-JOHNSON, D. W.; CAVANAUGH, K. L.; and KRIEGER, D. In preparation. The effects of the Maharishi Technology of the Unified Field on economic time series.

34. ORME-JOHNSON, D., and DILLBECK, M. C. 1982. 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, Ninety-Seventh 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.

35. ORME-JOHNSON, D. W.; DILLBECK, M. C.; ALEXANDER, C. N.; BERG, W. P. VAN DEN; and DILLBECK, S. L. In press. Unified field based psychology: The Vedic Psychology of Maharishi Mahesh Yogi. In *Collected papers,* vol. 5.

36. ORME-JOHNSON, D. W.; DILLBECK, M. C.; BOUSQUET, J. G.; and ALEXANDER, C. N. In press. An experimental analysis of the application of the Maharishi Technology of the Unified Field in major world trouble-spots: Increased harmony in international affairs. In *Collected papers,* vol. 4.

37. ORME-JOHNSON, D. W.; DILLBECK, M. C.; WALLACE, R. K.; and LANDRITH III, G. S. 1982. Intersubject EEG coherence: Is consciousness a field? *International Journal of Neuroscience* 16: 203–209. (Also in *Collected papers,* vol. 3.)

38. 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.

39. ORME-JOHNSON, D. W., and GELDERLOOS, P. In press. The long-term effects of the Maharishi Technology of the Unified Field on the quality of life in the United States (1960 to 1983). In *Collected papers,* vol. 4.

40. ORME-JOHNSON, D. W.; WALLACE, R. K.; DILLBECK, M. C.; ALEXANDER, C. N.; and BALL, O. E. In press. 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. In *Collected papers,* vol. 4.

41. SIEGEL, S. 1956. *Nonparametric statistics for the behavioral sciences.* New York: McGraw-Hill.

42. WALLACE, R. K. 1970. Physiological effects of Transcendental Meditation. *Science* 167: 1751–1754. (Also in *Collected papers,* vol. 1, pp. 38–42.)

43. WALLACE, R. K., et al. 1971. A wakeful hypometabolic physiologic state. *American Journal of Physiology* 221: 795–799. (Also in *Collected papers,* vol. 1, pp. 79–85.)

44. WALLACE, R. K., et al. 1972. The physiology of meditation. *Scientific American* 226: 84–90. (Also in *Collected papers,* vol. 1, pp. 86–91.)

45. WALLACE, R. K.; DILLBECK, M.; JACOBE, E.; and HARRINGTON, B. 1982. The effects of the Transcendental Meditation and TM-Sidhi program on the aging process. *International Journal of Neuroscience* 16: 53–58. (Also in *Collected papers,* vol. 3.)