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ID	Doc Type	Document Description	No of Pages	Doc Date	Restrictions
12746	REPORT	RE: INTERPOL ***D 3/5/2007 F99-008/2***	2	ND	B3
12747	REPORT	RE: TERRORISM	3	ND	B1
12748	REPORT	DUPLICATE OF #12574	2	ND	B1
12750	REPORT	RE: TERRORISM ***PAR 3/24/2008 F99-008/2*** DOCUMENT PENDING REVIEW IN ACCORDANCE WITH E.O. 13233	1	ND	B1 B3 open 11/18/09 KU
12752	REPORT	AUSTRALIAN COUNTERTERRORISM ***D 3/5/2007 F99-008/2***	1	ND	B3

Freedom of Information Act - [5 U.S.C. 552(b)]

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K

Kendall, Ray
SecGen of INTERPOL

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12746	REPORT RE: INTERPOL	2	ND	B1

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Kennedy, Morehead
Consultant

CONSULTATION/MEETING REPORT

1. Name/current position/phone number of subject(s) interviewed:
   Morehead Kennedy, Consultant, 393-0772

2. Working Staff Action Officer:
   Dave McMunn

3. Time/Place of interview:
   9/12/85, 0800, Grand Sheraton Hotel, Capital Hill

4. Participants:
   Dave McMunn

5. Experience/qualifications of subject(s):
   Retired FSO/Former Hostage/Author

6. Summary of subject(s) comments and recommendations.

   A. Main theme: Can only respond to terrorism by understanding terrorism. Incidents evoke primal emotions--hate, fear, ethnic animosity. Terrorists (in Mid East) like adolescents vs parents. Indulge them and give them sense of respect they crave.

   B. What should be done, that is not currently done in combatting terrorism?
   See terrorists as frustrated by circumstances they perceive and try to shift their immediate goals.

   C. What is being done that could be improved upon?
   Be flexible in dealing with the perpetrators of an incident and try to appear even-handed (i.e., not contemptuous).

   D. Areas to focus on to improve U.S. Government effectiveness in combatting terrorism:

   Terrorists have low self-esteem so build them up.

Kipper, Dr. Judith
Resident Fellow -
American Enterprise
Institute

CONSULTATION/MEETING REPORT

1. Name/current position/phone number of subject(s) interviewed:

   Dr. Judith Kipper/Mid-East Director - Resident Fellow/
   American Enterprise Institute/624-4000

2. Working Staff Action Officer:

   Dave McMunn

3. Time/Place of interview:

   10:30 16 September 1985, 730 Jackson Place

4. Participants:

   Amb. Peck, Lou Boink, Dave McMunn, Bob Earl, Pat Daly, ~~Burt Hutchings~~

5. Experience/qualifications of subject(s):

   Author - Mid-East Scholar

6. Summary of subject(s) comments and recommendations.

A. Main theme: Government should bring in outside experts to expand insights/access at times of crisis to discuss combatting terrorism. Terrorists reflect lack of self-esteem segment of of society or population has - (1) low cost/high payoff (2) 60% of population under 20 years old in Lebanon (3) few social props in Islamic culture. Must deal with people in power - not necessarily in office.

B. What should be done, that is not currently done in combatting terrorism?
Government should deal with forces for change vice focus on acts of terrorism - give radical elements incentatives to avoid violence/ terrorist acts - in Mid East, all roads lead to Damascus so get Syria aboard with combination of conciliatory gestures and "hard ball."

C. What is being done that could be improved upon?
Control public rhetoric so it doesn't exacerbate terrorist feelings of inadequacy. In crisis, make short, declarative demands . . . use secret diplomacy to get perpetrators - not USS New Jersey.

D. Areas to focus on to improve U.S. Government effectiveness in combatting terrorism:

Rhetoric - apply it to local situations/attitudes
Expertise outside of Government - call on it in time of crisis.

Kittrie, Dr. Nicholas
American University
Law School

CONSULTATION/MEETING REPORT

1. **Name/current position/phone number of subject(s) interviewed:**
   Dr. Nicholas Kittrie, American University Law School

2. **Working Staff Action Officer:**
   Bob Earl

3. **Time/Place of interview:**
   1500, 30 September, Townhouse

4. **Participants:**
   Ambassador Peck, Capt McMunn, Mr. Hutchings, COL Cole, LtCol Earl, Capt Boink

5. **Experience/qualifications of subject(s):**
   Teaching Law (but not much else...)

6. **Summary of subject(s) comments and recommendations.**

   A. Main theme: The definition of terrorism has to be consistently categorized as a political activity, as war, or as crime. (Kittrie recommends either of the latter two.) His own personal definition - "unlawful belligerency amounting to international crime"

   B. What should be done, that is not currently done in combatting terrorism? The categories of incidents called "terrorism" should be kept small -- e.g., 1) protection of international persons (i.e., Ambassadors); 2) protection of international instrumentalities (e.g., commercial airlines); 3) protection of foreign (third country) "innocents"; 4) Any exportation of violence to a third country.

   C. What is being done that could be improved upon?

   D. Areas to focus on to improve U.S. Government effectiveness in combatting terrorism:
   We should create a narrow category of "terrorism" such that most civilized nations will agree to abide by a "punish or expel" imperative. There would be no "safe haven" for terrorists.

TASK FORCE ROUTING SHEET

Date of Receipt	30 Sept	Router's Initials	RE

Remarks: Notes of Meeting With Bob Kupperman

Good Report

(Useful words/ideas for our report....)

Holloway	A	(I)	
Peck	A	(I)	
Coy	A	(I)	
Boink	A	(I)	
Cole	A	(I)	
Daly	A	(I)	Daly
Earl	A	(I)	RE
hings	A	(I)	BOLH
McMunn	A	(I)	M
~~Jamiese~~	A	I	
	A	I	
	A	I	
	A	I	

Deadline Date	
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Data Base Keyword(s)	Kupperman
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12747	REPORT RE: TERRORISM	3	ND	B1

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Leahy, Larry (SSA)
FBI Hqs FCI Liaison
officer

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ID	*Document Type* *Document Description*	*No of pages*	*Doc Date*	*Restrictions*
12748	REPORT DUPLICATE OF #12574	2	ND	B1

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Ledeen, Mike
Georgetown CSIS
Consultant to State

CONSULTATION/MEETING REPORT

1. **Name/current position/phone number of subject(s) interviewed:**

   Mike Ledeen, Georgetown CSIS, consultant to State, DOD, & Ollie North 654-0558

2. **Working Staff Action Officer:** Bob Earl

3. **Time/Place of interview:** 1100-1300, 12 Sept 1985

4. **Participants:** All of working group, less Admiral Holloway

5. **Experience/qualifications of subject(s):**
   Taught European history at University of Rome; archivist; journalist for the New Republic
   studied the Red Brigade; adivsor to Haig

6. **Summary of subject(s) comments and recommendations.**

   A. Main theme: We've got to get serious about terrorism:
   1. Countries that sponsor/support terrorism must be punished
   2. Terrorists must be tracked down & killed.

   Terrorism will eventually come to the U.S. whatever we do; therefore, it's riskier to do nothing than to do something.

   B. What should be done, that is not currently done in combatting terrorism?
   Ledeen recommends we change Presidential Executive Order 12333 so that selective assassination of known terrorists is legal. We must stop leaks--fire anyone in the Government who leaks stuff to the press.

   C. What is being done that could be improved upon?
   Our public education program--more sustained; stronger leadership believes the public is more sophisticated than we give them credit for.

   D. Areas to focus on to improve U.S. Government effectiveness in combatting terrorism:

   International approach = 1. Bilateral agreements only
   2. The more we do against terrorism (i.e., kill terrorists), the more we will get from the community of democracies.

CONSULTATION/MEETING REPORT

1. Name/current position/phone number of subject(s) interviewed:

MIKE LEDEEN / CSIS / (202) 654 0558

2. Working Staff Action Officer:

DAVE McMUNN

3. Time/Place of interview:

1100 - 12 SEP 85 / 730 JACKSON PL.

4. Participants: ADM HOLLOWAY, AMB PECK, MCMUNN, HUTCHINGS, EARL, DALY, BOINK, COY

5. Experience/qualifications of subject(s): EUROPEAN HISTORIAN - AUTHOR - EDUCATOR - LIVED/TAUGHT EXTENSIVELY IN ITALY - CLOSE (BIWEEKLY) CONSULTANT TO NSC ON TERRORISM - WAS SEC STATE HAIG'S SPECIAL ASSISTANT.

6. Summary of subject(s) comments and recommendations.

A. Main theme: US NEEDS TO DEVELOP COUNTER TERRORIST PROGRAM SERIOUSLY. IMPROVE INTELLIGENCE ACCORDINGLY (THIS WILL OCCUR SYNERGISTICALLY). NEED SPECIALISTS NOT JUST "GENERALISTS". NEED SOMEONE (NOT STATE DEPT BECAUSE THEY ARE ESSENTIALLY THE WRONG PLACE WITH A DIFFERENT MISSION) TO TAKE CHARGE (PROBABLY AT WHITE HOUSE, WITH DOD COMPONENT). ACT AGAINST TERRORIST. INACTION ONLY INVITES CRITICISM NOT SUPPORT.

B. What should be done, that is not currently done in combatting terrorism?

PUNISH COUNTRIES SUPPORTING TERRORISM. KILL THOSE IDENTIFIED AS HAVING KILLED OUR PEOPLE.

DEVELOP RELATIONSHIPS WITH OTHER COUNTRIES THAT HAVE CONTINUITY. BILATERAL ONLY. ACT ON THE INFO THEY GIVE US.

C. What is being done that could be improved upon?

CREATE A TERRORISM "FUSION" CENTER TO GATHER ALL SOURCE INTELLIGENCE AND PROCESS AND DISSEMINATE IT.

D. Areas to focus on to improve U.S. Government effectiveness in combatting terrorism:

DEVELOP A "MIDDLE RESPONSE" BETWEEN BOMBING ARAB/TOWN AND/OR DOING NOTHING.

CONDUCT A REAL CAMPAIGN TO INCREASE AWARENESS OF US. PUBLIC "SHARE OUR PROBLEM" WITH MEDIA / PUBLIC / CONGRESS AND ACTIVELY CALL THEM TO TASK WHEN THEY ACT IRRESPONSIBLY.

Livingston, Dr. Neil
Georgetown University
Professor

Book

CONSULTATION/MEETING REPORT

1. Name/current position/phone number of subject(s) interviewed:
   Dr. Neil Livingston/Georgetown University Professor/342-0309

2. Working Staff Action Officer:
   Dave McMunn

3. Time/Place of interview:
   1000/1 Oct/730 Jackson Place

4. Participants:
   Ambassador Peck, Lou Boink, Pat Daly, Burt Hutchings, Bob Earl, Dave McMunn

5. Experience/qualifications of subject(s):
   Author, The War Against Terrorism/Former Congressional Staffer

6. Summary of subject(s) comments and recommendations.

   A. Main theme: Need to recognize that terrorism is a state of war internationally and an active (as opposed to hunker down and take it) response is called for. Change mind set in Pentagon/CIA/State and organize Government to accommodate. Develop options for President to reprise, preempt, or retribute (to include assassination).

   B. What should be done, that is not currently done in combatting terrorism?
   Create "super entity" in U.S. Government to enact Presidential orders for active measures - special committee of ASC
   Get JSOC to have paramilitary options.

   C. What is being done that could be improved upon?
   Work on U.S. public (already frustrated with current approach) to support realignment of Government to confront type of war that will dominate the landscape and to adopt a more muscular diplomacy. Summit Seven is inappropriate multinational forum. Need to create a new one to focus exclusively on terrorism.

   D. Areas to focus on to improve U.S. Government effectiveness in combatting terrorism:
   Fund/support institutionally special ops in DOD.
   Task Force on Combatting Terrorism can/must lead - provide the rationale to rewrite ROE, Laws, International Agreements

Luttwak, Edward
Georgetown CSIS
Author:"The Pentagon &
The Art of War"

CONSULTATION/MEETING REPORT

1. Name/current position/phone number of subject(s) interviewed:
   MR Edward Luttwak, GEORGETOWN CSIS
   Author "The Pentagon and the Art of War"
2. Working Staff Action Officer:
   PAT DALY
3. Time/Place of interview:
   1430, 3 SEP, JACKSON PL
4. Participants:
   Working group
5. Experience/qualifications of subject(s):
   EXPERT ON the use of MILITARY FORCE (Special Ops) IN HOW INTENSITY conflict/terrorist SITUATIONS. EXTENSIVE CONTACTS IN Israel, GERMANY, FRANCE.
6. Summary of subject(s) comments and recommendations.
   A. Main theme:
      SEE ATTACHED

   B. What should be done, that is not currently done in combatting terrorism?

   C. What is being done that could be improved upon?

   D. Areas to focus on to improve U.S. Government effectiveness in combatting terrorism:

-- need to predeploy/preposition equipment and personnel

-- the "elegant Operation" will gain you public support

-- A successful operation will gain media support, using media reaction for non-action is a cop out.

- Other Points

-- Americans are soft Targets in the Middle East

-- Volume of terrorism in Israel is low when analyzing the potential that exists

-- CIA should create a jointly manned paramilitary force

-- International agency won't work

-- Soviet assistance - SURE
Soviet sponsor - probably not

-- low intensity conflict will continue to exist; no peace/no nuclear war

Luttwak
KEY POINTS:

- INTELIGENCE; Full intel usually not obtainable, if you wait for intel until you feel that you have enough the operation probably won't go down.

  -- Need more interagency intel sharing not just during an incident but full time.

  -- Need more international intel sharing

- SPECIAL OPERATIONS; Officers must be the elite, fully trusted/respected by the senior leadership.

  -- Military earns public support by the way they fight/need success

  -- Delta too close held

  -- During a rescue you can expect to loose hostages

  -- Military should not act as political scientists, offer the military position only, let State worry about the politics

  -- Strengthen special Ops forces, change image, gain trust of the rest of the military

  -- Develop a Career Path for Special Ops

M

Maharishi Int'l Univ.

TASK FORCE ROUTING SHEET

Date of Receipt	10/24/85	Router's Initials	M

Remarks: THE MANIFESTATION OF THE TASK FORCE EFFORT TO HEAR ALL THE OPINIONS ON COMBATTING TERRORISM

Holloway	A	I	
Peck	A	(I)	
Coy	A	(I)	
Boink	A	(I)	
Cole	A	(I)	
Daly	A	(I)	
Earl	A	(I)	Huh?!
Hutchings	A	(I)	
McMunn	(A)	I	
Doris	(A)	I	File.
	A	I	
	A	I	
	A	I	

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Filer	Out
Subject Working File	

22 October 1985

MEMORANDUM

To: CAPT Dave McMunn, USN, VP CTTF

Subj: Meeting with Reps from Maharishi Int'l University

Encl: (1) Results of Scientific Research on the Transcendental Meditation and TM-Sidhi Programme, 1984
(2) Sociological Research on the Maharishi Effect
(3) Transcendental Meditation Program and Crime Rate Change in a Sample of 48 Cities, 1981
(4) Intersubject EEG Coherence: Is Consciousness a Field?

1. BACKGROUND On 9 Oct. Dr. David Orme-Johnson (Chairman, Dept. of Psychology, Maharishi Int'l University - (MIU)) contacted CAPT McMunn of the VPCTTF regarding terrorism data bases and referenced some type of personal meeting with VP Bush. CAPT McMunn referred Dr. Orme-Johnson to CDR Vaurio, and requested CDR Vaurio to arrange a meeting and report back to CAPT McMunn.

2. SUMMARY On 22 Oct. CDR Vaurio met with two of Dr. Orme-Johnson's graduate students in psychology at the Maharishi Int'l. Univ. College of Natural Law in Washington, DC. Those two students are returning to the main campus of MIU on 24 Oct, and thus requested that continuity be maintained on this project by two other graduate students who are residents of Washington, DC. The personnel in the meeting were: Mr. Ted Nevels, Mr. Howard Chandler, Mr. Dennis French, and Mr. Rich Lamarita (Mr. Lamarita is the new POC; phone 783-8181). The meeting consisted of three parts: description of their TM research; evaluation of that research; and a proposal for the VPCTTF. Apparently, it was a Dr. Charles Alexander of MIU who had the personal meeting with VP Bush.

3. TM RESEARCH AT MIU TM is not a religion and has no political goals. MIU was founded in 1971 as a fully accredited institution with the apparent objective of bringing together TM practitioners from a variety of academic disciplines to establish a multi-discipline approach to furthering the application and validation of TM, TM-Sidhi, and the Maharishi Technology of the Unified Field. Their research (as it applies to terrorism) is related to the scientific validation of "intervention experiments" in which a number (the precise number required is the square root of one percent of a population - 1600 in the case of the U.S.) of "Unified Field" experts assemble as a group and employ TM which creates the "Unified Field" which influences a society or population at large. It has been done on a worldwide scale from MIU, and by deploying smaller coherence creating groups to selected countries. See enclosures (1) thru (4) for a more detailed description.

4. EVALUATION OF TM/UNIFIED FIELD RESEARCH The first component of evaluation is the scientific description of the "Unified Field". This research is being performed by Dr. John Hagelin (Phd. in

Physics from Harvard) who is the Chairman of the Physics Dept. at MIU. Dr. Hagelin's research describes the "Unified Field" in terms of the Lagrangian of N=8 supergravity theory of quantum physics. The second component relates to a direct measurement of "improved quality of life" which is the expected/desired result of the Maharishi Effect. They have tried to indirectly quantify quality of life by such measurements as crime rates, suicides, traffic fatalities, infectious disease rates, divorces, GNP per capita, stock market, and arson. Their objective is to use independent data (such as FBI crime reports, U.S. Vital Statistics, Morbidity and Mortality Weekly Report of the Center for Disease Control, and Conflict and Peace Data Bank of the Univ. of Maryland) and then use statistical analysis to evaluate the effectiveness of sending coherence creating groups to major conflict areas (in 1978 they sent teams to Nicaragua, Lebanon, Iran, Cambodia, and Rhodesia) or of a worldwide test, such as the 1983 assembly of 7000 experts at MIU. Their interest in terrorism was limited to identifying a terrorism data base for use in their research. MIU is searching for a terrorism incident data base, worldwide in scope, going back to 1966. I told them of several commercial and private data bases which might satisfy their requirements.

4. PROPOSAL FOR THE VPCTTF They requested I provide the VPCTTF with the following information: "We have a very simple, practical method that has been extensively documented by rigorous scientific research. We would like to have our experts (Dr. Orme-Johnson and Dr. Hagelin) give the task force a one hour formal presentation." They said they are also going to send the same proposal to the task force via the mail.

D. Vaurio

Sociological Research on the Maharishi Effect

David Orme-Johnson, Ph.D.
Department of Psychology
Maharishi International University

Maharishi Effect

Improved quality of life with 1% or more of a population practicing the Transcendental Meditation (TM) technique

Author/ Population/ Coherence Group	Dependent variables/ Experimental Design	Results/ Conclusions
1. Borland and Landrith (1976)/ 11 U.S. cities, 25,000 < pop. <50,000/ TM participants > 1% of population	FBI Total Crime Rate/ ANACOVA comparison with 11 control cities matched for pop., college pop., and geographic region from 1972 to 1973.	-8.2% decrease in 1% cities, 8.3% increase in controls ($p<.001$). 1% cities represented East, Midwest, South, and West. Controls were typical of nationwide trend./ Decreased crime in 1% cities that could not be attributed to year, population, region, or initial crime rate. Evidence supports phase transition model.
2. Hatchard (1977)/ 40 US municipalities in Cleveland area (360 < pop. < 100,000)/ % TM participants in the populations	Total crime rate from Criminal Justice Coordinating Council of Greater Cleveland and FBI/ Linear correlation between % meditators and crime rate change, controlling for family income and the ratio of police to population from 1973 through 1976.	Significant inverse correlations between crime rate change and TM program participants: 1973/74, $r=-.61$, $p < .001$; 1974/75, $r=-.42$, $p < .01$; 1975/76, $r=-.78$, $p < .001$./ Decreased crime in high-TM cities could not be attributed to year, income, or police protection. Suggests phase transition to greater orderliness with increasing proportion of meditators in the population.
3. Dillbeck (1978)/ 23 cities in Kansas City metropolitan area (pop. > 4000)/ TM participants > 1% of population.	Rate of total "Part 1" crimes from city police departments. Deviation of crimes from previous trend./ Probability model to predict crime trend, controlling for population, population density, percent unemployed, per capita income, percent below poverty level, percent in same residence after 5 years, percent over age 65, median years of education.	Percentage of TM participants was an effective overall predictor of crime rate and an accurate predictor of the exact point (1% TM participants) at which decreased crime rate began./ The effect of the TM program on crime rate was independent of demographic variables. Overall, the percent of TM participants was a more effective predictor of crime rate decrease than the probability model. The results support a threshold phase transition model.
4. Dillbeck, Landrith, and Orme-Johnson (1981)/ 24 US cities (10,000 < pop. < 50,000)/ TM participants > 1% of population.	Total crime rate trend from FBI./ Multivariate analysis of the change in crime rate trend, 1967-72 (control period) and 1972-77 (experimental) in 24 1% cities compared with 24 controls with less than .7% practicing TM, matched on population, college population, and geographic region, controlling for population, population density, median years education,	Univariate analysis of covariance of change in crime rate slope was significant ($p<.02$) and change of crime rate in 1973 was significant ($p<.002$)./ Phase transition to decreased crime rate after cities reached 1%, and decreased trend of crime in the subsequent five years, independent of variation in those demographic variables on which the experimental and control cities differed,

	percentage of persons in same residence after 5 years, per capita income, percent of persons aged 15-29, percentage unemployed, percentage of families with incomes below poverty level.	viz. median years education, stability of residency, and pre-intervention crime rate.
5. Landrith and Dillbeck (1983)/ 21 US cities (10,000 < pop. < 50,000)/ TM participants > 1% of population.	Suicides from Vital Statistics in the United States, 1967 to 1977; auto accidents from each city police department, 1968-1977./ Multivariate T, stepwise discriminant analysis to identify differences between the groups on demographic variables; bivariate analysis of covariance to assess the changes in in mean rates in suicides and auto accidents from baseline to intervention period.	Bivariate analysis of covariance revealed significant decrease in suicides and auto accidents in 1% cities relative to controls ($p<.001$). Univariate analysis of covariance indicated significant decreases both in suicides ($p<.001$) and in auto accidents ($p<.001$). Correlations between % TM participants in 1972 and change scores adjusted for the covariates was significant for both suicides and auto accidents ($r = -.530$, $p<.001$; $r = -.625$, $p<.001$)./ Phase transition to increased order in society with 1% of the population practicing TM is multi-dimensional.
6. Dillbeck, Landrith, Polanzi, and Baker (1982)/ Random sample of 160 U.S. cities, 40 in each of 4 population groups: pop. > 250,000; 100,000<pop.<250,000; 50,000<pop.<100,000; 25,000<pop.< 50,000/	Deviation of observed crime rate from that predicted by linear regression from the city's prior trend/ Cross-lagged panel analysis from 1972 to 1978, controlling for the four out of nine demographics found to be significantly associated with crime rate.	Cross-lagged differences indicated that the number of TM participants in 1972 predicted decreased crime in following years/ The experiment gives evidence for a causal influence on decreased crime associated with practice of the TM technique. The effect corresponds to approximately a 20% improvement in the crime trend produced by the TM program.
7. Dillbeck, Landrith, Polanzi, and Baker (1982)/ Random samples of 40 standard metropolitan statistical areas chosen from 2 population groups: pop. > 500,000 and 200,000<pop.<500,000. This sample included 47 percent of the total U.S. metropolitan population.	Deviation of observed crime rate from that predicted by linear regression from the city's prior trend/ Cross-lagged panel analysis from 1972 to1979, controlling for two out of 13 demographic variables found to be significantly associated with crime rate.	All of the cross-lagged differences of partial correlations (1973-1979) from 1972 were statistically significant (all p's< .01)/ The experiment gives evidence for a causal influence on decreased crime associated with practice of the TM technique. The effect size corresponds to approximately a 20% improvement in the crime trend produced by the TM program.
8. Abou Nader, Alexander, and Davies (1984)/ Lebanese community of Baskinta in area of ongoing armed conflict/ 1% of population practicing TM.	Amount of shelling, property damage, and casualties (casualties for Baskinta only)/ Comparison of 1% community with surrounding communities in the conflict for baseline period from October 1978 - June 1982, and experimental period from July 1982 - March 1984.	All three dependent variables showed highly significant decreases in conflict in Baskinta from the time 1% of its population had learned TM, both compared to its own baseline period ($p<.005$ for each of the three measures), and compared to each of the control villages (all p's < .0001 for amount of shelling, and <.01 for property damage)/ Evidence of protection of the population from disorderly influence in the environment.

EXTENDED MAHARISHI EFFECT

Improved quality of life with √1% or more of the population collectively practicing the TM and TM-Sidhi techniques

CITY

at the end of March.		Effect operates on a fundamental level which transcends racial differences and diverse social structure.
14. Dillbeck, Mittlefehldt, Lukenbach, Childress, Royer, Westsmith, and Orme-Johnson (1984)/ Puerto Rico/ The number of TM and TM-Sidhi participants in Fajardo, which rose steadily until April 1984, when the threshold of 185 (√1% of Puerto Rican population) was exceeded for two weeks.	Monthly data for violent crimes against people and property, January 1969 - September 1984, provided by the Puerto Rican Police Department/ Box-Jenkins ARIMA impact assessment analysis, comparison of baseline period (January 1969 - September 1984).	Decreased crime rate during experimental period, coupled with an increase when the number of participants decreased suddenly following the experimental period ($p<.025$). The effect was not attributable to any change in police practices./ Extended Maharishi Effect demonstrated by significant reduction of crime in Puerto Rico.
NATIONAL		
15. Burgmans, Burgt, Langekamp, and Verstegen (1983)/ Holland/ √1% of the Dutch population (376) exceeded by three different assemblies.	Monthly crime rate and traffic accidents with injury, from the Central Bureau of Statistics/ Difference of observed and predicted rates of crime and traffic accidents during the three separate one-month experimental periods were contrasted with comparable values for the same months in the prior ten years.	Significant decreases in crime rate during three intervention periods (all p's <.025). Only one period had a significant decrease in accidents ($p<.002$); the other two periods showed trends (p's < .10). Combined p values for the three periods were significant both for crime rate ($p=.004$) and auto accidents ($p=.001$).
16. Davies and Alexander (1983)/ Massachusetts and the United States (pop. 270,000,000)/ Group of approximately 2500 TM-Sidhi participants during a six-week period, July-August 1979, Amherst, Massachusetts.	Daily national and monthly statewide traffic fatalities; monthly violent crimes national and state; daily national and monthly statewide air traffic fatalities; monthly fatalities from other accidents (11 categories); nationwide suicides; and daily closing values of the Standard and Poor's Corporate 500 index of stock prices/ Comparison of social indicators during experimental period with the same time of year in previous six and subsequent two years/ ARIMA time series analysis of stock prices.	Traffic fatalities: 6.5% reduction in U.S. ($p<.0001$);18.9% reduction in Massachusetts ($p<.05$). Violent crimes: 3.4% reduction in U.S. ($p<.02$);10.1% reduction in Massachusetts ($p<.00001$). Air fatalities: 20.8% reduction in U.S. ($p<.05$); 83.3% reduction in New England ($p<.001$). Reduction in all categories of fatalities in the U.S., including suicides (mean=4%, $p=.005$). 5.2-point compared with an expected decrease of 0.2; increase of Corporate 500 Index during subsequent experimental period, points. Time series showed a significant effect of the experimental group on stock prices, with a nine-day lag ($p<.04$) ($p<.04$)/ The Extended Maharishi Effect works on the national level in a large country; the effects are multi-dimensional and there is evidence for stronger effects in the state in which the coherence creating group is located.
17. Orme-Johnson and Gelderloos (1984)/ United States (pop. 270,000,000)/ Percentage of TM participants the U.S. and national coherence creating group of TM-Sidhi participants at Maharishi International University in Fairfield, Iowa.	Quality of Life Index composed of 12 social indicators: crime rate, percent of civil cases reaching trial, infectious disease rate, infant mortality rate, suicide rate, cigarette consumption per capita, alcohol consumption per capita, GNP per capita, patent application rate, degrees conferred per capita,divorces,traffic fatality rate/ 25-year study, 1960-1984, using yearly data. Regression analysis and cross correlation.	A significant increase in quality of life in 1976 followed a sharp rise in the number of TM meditators in the country in 1975. A second marked increase in the quality of life in 1982-83, corresponding with √1% of the U.S. population practicing the TM and TM-Sidhi program at MIU (p's <.0001). Cross-correlation indicated that the number of meditators in the population led the improvement in the quality of life in the country. The effect of MIU on the quality of life was stronger in

		Iowa than in the U.S. as a whole. Infectious diseases: 12.1 decrease, U.S.; 20.4 decrease, Iowa. Traffic fatalities:-15.3%, U.S.; -18.1%, Iowa. Infant mortality: -6.8%, U.S.; -14.6%, Iowa. Divorce: -5.7%, U.S.,-11.9% Distilled spirits: -6.1%, U.S.; -6.8%, Iowa/ Both the number of meditators throughout the U.S. population and the coherence creating group at MIU had a significant impact on improving the quality of life in the United States. The effect was stronger nearer the coherence creating group.
18. Orme-Johnson, Cavanaugh, and Kreiger (1983)/ United States (pop. 270,000,000)/ National coherence creating group of TM-Sidhi participants at Maharishi International University in Fairfield, Iowa.	Stock market, Treasury bonds, strength of the dollar, and composite index of the above. Daily data, January 4, 1982 -April 28, 1983/ Multivariate state space time series analysis.	The 1600 threshold at MIU had a significant impact on T-bonds ($p<.001$), the stock market ($p<.01$), the stock market allowing for interest rates ($p<.001$), the stock market and T-bonds as a joint process ($p<.01$), strength of the dollar ($p<.001$), composite economic index of strength of the dollar and T-bonds ($p=.02$), and composite index of T-bonds, strength of the dollar, and stock market ($p=.01$). During the 42 days of the experimental period, the value of American equities increased by $353 billion (85% of the increase for that year)/ Whereas the stock market generally leads economic recoveries, the MIU Superradiance group led the stock market, and therefore was instrumental in catalyzing the dramatic economic recovery of 1982-83.
19. Lanford (1984)/ United States (pop. 270,000,000)/ 1400 at MIU: whether it was achieved at least 15 days out of the month.	Homicides from Vital Statistics of U.S.A. and from National Center for Health Statistics, January 1978 - December 1983 (monthly data)/ Interrupted time series - ARIMA.	From 1980-83 the homicide rate fell significantly during those months when the 1400 threshold was reached ($p<.05$). The actual number of homicides fell significantly as well ($p<.025$)/ A group of 1400 experts in the Maharishi Technology of the Unified Field is sufficient to reduce homicides in the U.S.
20. Reeks, Lanford, and Stryker (1985)/ United States (pop. 270,000,000)/ National coherence creating group of TM-Sidhi participants at Maharishi International University in Fairfield, Iowa.	Weekly data from *Morbidity and Mortality Weekly Report* (Center for Disease Control, Atlanta, Georgia): syphilis, gonorrhea, tuberculosis, encephalitis, hepatitis A, hepatitis B, index of 14 non-social diseases/ Interrupted ARIMA time series analysis.	With 7000 practitioners, incidences of all diseases decreased immediately, except for encephalitis, which had a lag of one week. With 1600, five diseases decreased, at their incubation periods, usually one or two weeks/ The Maharishi Technology of the Unified Field improves the health of the whole nation. The larger the size of the coherence creating group, the more immediate and pronounced the decrease in diseases.
21. Dillbeck, Larimore, and Wallace (1984)/ United States (pop. 270,000,000)/ National coherence creating group of TM-Sidhi participants at Maharishi International University in Fairfield, Iowa.	Traffic fatalities: daily data, 1975-1982, from U.S. Department of Transportation. Deviation scores for 1982 (1982 daily fatalities minus mean daily fatalities for 1975-81) were used in order to remove the yearly cycle component from the data/	For a threshold of 1520, the intervention parameter was significant at lags 3-5 days, with peak significance at lag four days ($p=.014$). For a threshold of 1600, the intervention parameter was significant at lags 2-7 days, with peak significance at lag five days ($p=.005$)/

Two thresholds were analyzed: 1520 (√1% of U.S. population) and 1600 (√1% of population of U.S. and Canada).	Box-Jenkins ARIMA time series analysis impact assessment.	These results indicate that the coherence creating group at MIU has a preventative effect on auto fatalities on a national scale.
23. Beresford and Clements (1983)/ Great Britain/ Several coherence creating groups in Britain. Combined effect of the groups was estimated by adding the effect of the individual groups.	*Financial Times'* Actuaries 'All Shares' Index of 750 largest companies in Great Britain from January 1982-May 1983/ Stock index for seven-day periods during and following peak strength of coherence creating groups was compared with the mean of the stock index during all other trading days.	Significant increase in British stock market index during experimental periods in comparison to the seven-day periods immediately before and after the experimental periods ($p<.05$), and also in comparison to all other trading days ($p<.01$)/ Extended Maharishi Effect on economic time series replicated in Britain.
24. Orme-Johnson, Alexander, Davies, Chandler, and Larimore (1984)/ Israel and Lebanon/ Group of TM-Sidhi participants fluctuating in size from 60 to over 240 (√1% Israeli population = 200), during July - August 1983 in Jerusalem.	Daily data on war intensity in Lebanon; war deaths in Lebanon; newspaper content analysis of Israeli national mood;Tel Aviv stock index; auto accident rate, number of fires, and maximum temperature in Jerusalem,and a composite index and a variability index of all the above variables/ State space time series analysis on each variable separately. The exogenous variable was the daily size of the coherence creating group in Jerusalem.	The exogenous variable had a significant, immediate impact in the predicted direction on all of the dependent variables/ The Extended Maharishi Effect is multi-dimensional, and its impact is immediate. Increasing coherence in one national consciousness--Israel--has an influence a neighboring national consciousness--Lebanon--with which it is interacting.
25. Alexander, Abou Nader, Cavanaugh, Davies, Dillbeck, Kfoury, and Orme-Johnson (1984)/ Lebanon/ Three separate coherence creating assemblies in MIU, Yugoslavia, and Lebanon.	War deaths, war injuries, progress towards peaceful resolution of the conflict. Foreign exchange rate/ ARIMA least squares regression.	For each of the three assemblies, significant decreases were found in war deaths and war injuries, along with significant increases in progress towards peace ($p=.038$, .000036, respectively). The foreign exchange rate of the Lebanese pound improved against the US dollar only during the assembly held in Lebanon ($p=.00012$)/ Two international superradiance groups, as well as a local superradiance group, were repeatedly shown to have a positive effect on the Lebanese conflict. The local group also increased the strength of the Lebanese currency in foreign exchange.
26. Dillbeck and Castillo (1985)/ Philippines/ Sidhaland of 400 TM-Sidhi participants (native Filipinos) beginning in December 1979.	Crime rate in Metro Manila/ ARIMA time series analysis.	Significant decrease in crime rate in Metro Manila following the establishment of the Sidhaland ($p<.001$)/

27. Dillbeck, Shabi, and Glenn (1985)/ Philippines/ Sidhaland of 400 TM-Sidhi participants (native Filipinos) beginning in December 1979.	Composite index of the most reliable measures available: crime, fetal deaths, and all other deaths/ Box-Jenkins ARIMA impact assessment analysis.	Significant improvement in the quality of life index ($p<.025$). As the size of the coherence creating group decreased, the effect decreased./ Cross-cultural replication of the Extended Maharishi Effect.
28. Cranson, Chandler, and Orme-Johnson (1985)/ U.S. and Mexico/ 1850 TM-Sidhi participants at Maharishi International University from December 3, 1984 - May 2,1985.	Absolute daily change in the foreign exchange rate of the Mexican peso per U.S. dollar/ ARIMA interrupted time series, using a threshold of 1850 at MIU as the first independent variable and the Swiss franc per dollar as a second independent variable to control for fluctuations of the dollar in world currency markets.	Absolute daily change in the peso decreased by approximately 25% after March 18, 1985, when the intervention period began/ When the threshold of 1850 is exceeded at MIU, the influence of the Extended Maharishi Effect is apparent in Mexico as well as the US, as indicated by increased stability in the interactions of the two nations' currencies.
WORLDWIDE		
29. Orme-Johnson, Dillbeck, Bousquet, and Alexander (1985)/ World population, and populations of five major trouble-spot areas in 1978 (Nicaragua, Lebanon, Iran, Cambodia, and Rhodesia)/ 1400 experienced experts in the Maharishi Technology of the Unified Field distributed in five groups in the world's five major trouble-spot areas.	Conflict and Peace Data Bank (COPDAB): International and Domestic Files, Conflict Scale Category, and Primary Issue Type (1968-78)/ Aggregate scores were compared by contingency table analysis with a baseline period for the same year for 1) trouble-spot countries and 2) worldwide. The experimental period was also compared both worldwide and for the trouble-spot countries with the prior ten years, both by means of contingency table analysis and ARIMA impact assessment and transfer function analysis using weekly time series.	ARIMA results: Worldwide decrease in Hostile Acts ($p<.002$), Verbal Hostilities ($p<.01$), and increase in Cooperative Events ($p<.007$) during the ten weeks of the World Peace Project in late 1978. Contingency table results were also highly significant (all p's $<.001$), for the trouble-spot areas combined./ This study verified the effectiveness of sending coherence creating groups to major conflict areas to alleviate international conflict for as long a period as the groups can be maintained.
30. Orme-Johnson,Cavanaugh, Alexander, Gelderloos, Dillbeck, Lanford, and Abou Nader (1984)/ World/ 7000 TM-Sidhi participants at the Taste of Utopia Assembly December 1983 - January 1984, at Maharishi International University in Fairfield, Iowa.	Statements and actions of heads of state worldwide, conflict in trouble-spot countries, conflict in Lebanon, World Index of stock prices, traffic fatalities worldwide, patent applications, infectious diseases, and crime/ Comparison of dependent variables during the Taste of Utopia Assembly with the prior and subsequent three-week periods,and with changes during the comparable periods in previous years. Various statistical techniques appropriate to each data set were used, including chi-square contingency table analysis, and ARIMA time series impact assessment analysis.	Increased progress by heads of state in reversing negative trends and accelerating positive trends ($p=.02$), increased positivity in trouble-spot areas ($p=.002$), increased progress towards peace in Lebanon ($p=.006$), increase in World Stock Index ($p=.00004$), decreased traffic fatalities ($p=.00001$), increased patent applications ($p=.04$), decreased notifiable infectious diseases ($p=.000002$).
31. Cavanaugh,Orme-Johnson, and Gelderloos (1984)/ World/ 7000 TM-Sidhi participants at the Taste of Utopia Assembly, December 1983 - January 1984, at Maharishi International University in Fairfield, Iowa.	World Index of international stock market prices in 19 countries, including the U.S., Europe, Canada, Mexico, Australia, and the Far East. Daily data for five months preceding and six weeks following the Assembly/ Box-Jenkins ARIMA impact assessment and transfer function fitting.	A rise in stock prices by 2.2. times during the Taste of Utopia Assembly ($p=.0047$), and a significant impact of the Assembly on stock prices, explicitly allowing for the impact of long-term interest rates ($p=.000033$)./ Rigorously demonstrates the impact of the Extended Maharishi Effect on a worldwide scale.

32. Orme-Johnson, Dillbeck, Alexander, Chandler, and Cranson (1985)/ World / World Assembly on Vedic Science, Washington, D.C., July 10-17, 1985 (5600 TM-Sidhi participants)	Dow Jones and World Index of international stock prices, international conflicts from content analysis of *New York Times,* infectious disease rate, patent applications, and fires in Washington, D.C. Effects were publicly predicted in advance, including specifics of data sources, times, and statistical procedures./ Box-Jenkins ARIMA impact assessment analysis.	All data available at this writing support predictions: 1) decreased international conflicts (p=.0181); 2) decreased infectious diseases (p=.00015) 3) increased Dow Jones average (p=.05) 4) increased World Stock Index (p=.025) 5) increased patent applications (p=.0024) 6) decreased fires in Washingon, D.C. (p=.002)/ Results replicate Taste of Utopia Assembly (see refs. 30 and 31).

Physiological Measurement of the Maharishi Effect

33. Orme-Johnson, Dillbeck, Wallace,and Landrith (1982)/ Three EEG subjects at MIU, over 1000 miles from the coherence creating group/ 2500 TM-Sidhi participants in Amherst, Massachusetts, in July - August 1979.	Inter-subject EEG coherence among frontal and central leads/ ANOVA of the diffence scores of EEG coherence between control and experimental periods on six experimental days and six control days. Experimental periods were the times when the coherence creating group at Amherst was practicing the TM and TM-Sidhi program; control periods were immediately preceding.	EEG coherence increased significantly between subjects from baseline to experimental periods on experimental days compared with control days (p=.02), particularly in the alpha and beta frequencies in frontal and central regions./ This result supports the inference from sociological data that the Extended Maharishi Effect has a direct influence on the brain physiology of individuals even at an extended distance.

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The Transcendental Meditation Program and Crime Rate Change in a Sample of 48 Cities

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Abstract

This study tested the hypothesis that the percentage of persons participating in the Transcendental Meditation program predicts decreased crime rate. In a sample of 24 cities with one percent TM program participation in 1972, there was both an immediate drop in crime rate in 1973 and reduced crime rate trend over the five year follow-up period, compared with a group of 24 control cities with low TM program participation matched for geographic region, population, and college population. These effects were significant after covarying for changes in demographic variables on which the groups of cities differed. The results are presented in the context of theoretical speculation of how participants in the TM program might contribute to more orderly functioning of the larger body of individuals within society.

The Transcendental Meditation Program and Crime Rate Change in a Sample of 48 Cities

A number of sociological or social psychological theories have been proposed in the past fifty years to explain the phenomenon of crime. Three dominant social theories of crime have been social disorganization theories, anomie theory, and the theory of differential association. However, none of the theories has offered a viable remedy to the pressing problem of the pervasiveness of crime (Wilson, 1975).

Social disorganization theorists propose that traditional social bonds control behavior, and crime results from the disruption of these bonds in industrialized society (Elliot & Merrill, 1961; Faris, 1955; Thomas & Znaniecki, 1927). Ecological studies of the spatial location of crime within a city have been viewed as a test of social disorganization theory (Shaw & McKay, 1942). The solution to the crime problem suggested by this theory is a major reorganization of urban areas or perhaps of the national economic structure.

Anomie theory proposes that deviance is generated in society when goals (such as material success) are universally approved, yet the acceptable means to reach these goals are not uniformly available (Merton, 1957). The concept of differential opportunity for success as a cause of crime was elaborated by Cloward and Ohlin (1960). A theory based on the concept of differential opportunity suggests that alteration of the opportunity structure through education and job training can reduce crime. This solution has already been attempted (e.g., the war against poverty); however, the lack of its success in reducing crime has been documented (Radzinowicz, 1977).

Sutherland's theory of differential association is a social learning theory of criminality which states that criminal behavior patterns result from an excess of association with those whose behavior follows these patterns (Sutherland & Cressey, 1978). Differential association theory implies that in order to reduce crime, the social history of individuals should be altered, perhaps through improved child-rearing practices (Cressey, 1978). This would again require a large-scale government intervention program, the practicality, effectiveness, and desirability of which is a matter of concern (Wilson, 1975).

This lack of success of current crime prevention programs seems to spring from the nature of crime as an expression of the whole social field. Each of the social theories of crime described above places the locus of crime in social conditions which are complex and not easily amenable to planned change. In addition, individual factors must interact with this social context; it may be the weaker "links" in the social group who fall victim to these conditions, with weakness being defined by such factors as biological limitations on learning (Ax & Bamford, 1968; Jeffery, 1978) or low intelligence (Hirschi & Hindeland, 1977; Mednick & Christiansen, 1977). Given this situation, it would appear that the only available options for crime prevention are either major changes in the social and economic structure, or massive programs directed at changing interpersonal, educational, and even perhaps physiological conditions at the individual level.

However, a third approach to crime prevention has arisen within the past few years, which has received preliminary support from the results of several sociological studies. This approach is based on a theory proposed by Maharishi Mahesh Yogi (1977), founder of the Transcendental Meditation (TM) program,

which outlines specific principles for criminal rehabilitation and for crime prevention. With regard to criminal rehabilitation, this theory suggests that the quality of individual behavior is based on the individual's level of consciousness, as reflected in overall psychological and psychophysiological integration. The evidence cited above for the relationship of intelligence and physiological correlates of learning ability to criminality suggests that this overall degree of integration may be valuable in predicting the ability to fulfill personal desires in a way which is consonant with the needs of society. Many experiments in the past nine years have indicated that the TM program, a mental technique practiced twice daily for 15-20 minutes, improves physiological, psychological, and social functioning (see Orme-Johnson & Farrow (1977) for a selection of 104 papers). Random-assignment studies have found reduced anxiety, hostility, and insomnia among prison inmates who begin the TM program, in contrast to controls (Abrams & Siegel, 1978; Ballou, 1973).

But the more far-reaching implications of Maharishi's theory bear upon the problem of crime prevention. Like the other theories described above, it suggests that crime is an expression of the whole complex social field. However, the uniqueness of this theory with respect to other social theories is that it suggests a redefinition of the social field; in addition to being a multi-factored network of behavioral interactions and economic conditions, the theory also posits that the social field exists as a more basic reality, which displays properties of physical fields described by quantum field theory. Quantum field theory has shown that separate objects are actually localized excitations of basic fields. In the case of the social field, its substance is postulated to be consciousness; this field is said to be directly experienced

by the individual during the TM technique as "pure consciousness," or consciousness without mental activity of thought or feeling (Maharishi Mahesh Yogi, 1977). Thus, pure consciousness is suggested as a unified field at the basis of everyone's thought and behavior. As a result, it is hypothesized that collective behavior can be affected by making use of the field property of consciousness itself.

The principles by which such an effect may be possible are evident from physical systems. In a physical system, macroscopic or large-scale changes occur which give rise to new types of collective behavior, characterized by orderliness or "coherence" of all the parts of the system. This results in the system as a whole displaying at a macroscopic level the unified characteristic of the underlying field. This coherence is brought about in a practical way. The field properties which govern the system allow a small number of individual elements of the system to stimulate increased coherence or orderliness in the entire system. Systems of many (N) elements displaying wave phenomena will exhibit large-scale coherent functioning if the coherent subpopulation exceeds $\sqrt{N}$, since the cumulative effect of n coherent elements is proportional to n^2, while that of independent or random elements is linearly additive. This principle is the basis of such coherent phenomena as laser light.

The relevance of such principles to crime prevention is evident when crime is conceptualized as lack of coherence or orderliness within the social system. A narrow definition of crime is action which is at odds with the laws of society. Such action can be said to reflect lack of coherence or integration between the social system as a whole and its individual elements

or some subsystems of it. The problem of crime prevention, from such an angle, is to maintain coherence within the whole social system. As described above, the two alternatives suggested by the theories reviewed were either to reorganize the social system as a whole, or to attempt to intervene with a large mass of individuals who may be most likely to violate the laws governing the whole system.

A more practical alternative is suggested by the principles governing physical systems. A macroscopic transition to coherence of the whole social system might be stimulated by a small percentage of the individuals who make up the system generating a very coherent influence. If social systems display field effects similar to those of physical systems governed by wave phenomena, then the critical subpopulation generating a very coherent influence in a community of 10,000 would be $\sqrt{10,000}$ or 100, i.e., one percent, for the entire community to display greater coherence or orderliness. The predicted result would be reduced crime rate.

If such macroscopic coherent field effects are possible in society, and are predicted as a practical means of crime prevention, then the following points require empirical support: (a) consciousness is a field phenomenon, related to or displaying behavior parallel to physical fields described by quantum field theory; and (b) by utilizing the field property of consciousness, a small subpopulation generating a very coherent influence could affect the social field, resulting in decreased crime rate.

The relationship of consciousness to physical fields is documented by quantum theory itself, which has discovered that a complete description of quantum mechanics must include an understanding of consciousness (Wigner, 1976). Moreover, brain functioning, in particular the EEG, is traditionally viewed

as the behavior most closely tied to consciousness, and it has been suggested that macroscopic ordering of the brain responsible for EEG phase coherence is itself a quantum field effect (Domash, 1977; Stuart, Takahashi, & Umezawa, 1979). In addition, the EEG and reaction time have been found to be directly sensitive to electromagnetic fields too weak to cause synaptic firing (Adey & Bawin, 1977). Given these findings, it is not at all implausible that individuals may be sensitive to underlying physical characteristics of the social field, should they exist, nor is it implausible that EEG coherence, if it is itself a physical field effect, could influence the surrounding physical field.

Our laboratory has begun to directly test the prediction that an individual could influence surrounding fields which themselves affect behavior. This requires a physical measure of such a social field, for which we are investigating EEG coherence. The relevance of this variable, in light of the evidence above, is that: (a) long-range ordering of brain activity (coherence) may itself be a field phenomenon; (b) the EEG is apparently sensitive to physical fields; (c) EEG coherence has been found to increase both during the TM technique (Levine, 1976) and longitudinally among advanced TM program participants; and (d) high EEG coherence, as a trait, has behavioral correlates relevant to social behavior, such as use of higher (principled) stages of moral reasoning (Orme-Johnson, Alexander, Wallace, Dillbeck & Bandy, 1980).

The second aspect of this approach which requires experimental support is the prediction that decreased crime rate could result from a small subpopulation making use of the field property of consciousness. Specifically, the theory described here predicts that as few as one percent of a city's population experiencing the field of pure consciousness

during the TM technique could generate a coherent influence sufficient for decreased crime rate to be evident in such cities. This prediction is clearly operationalized and has been tested in four studies.

In the initial study of this phenomenon, Borland and Landrith (1976) took the eleven cities larger than 25,000 which reached one percent participation in the TM program in 1972, and compared them to control cities matched for geographic region, resident population, and college population. The "one-percent" cities showed a significant decrease in crime rate from 1972 to 1973, while the crime rate of the control cities increased. From 1967 to 1972, the crime rate of all the cities had been increasing.

Weinless (1980) also found this effect among a sample of 54 cities with population larger than 250,000. Those 18 cities with the greatest influence of the TM program showed a significant decrease in crime rate relative to their prior trend during 1975 and the first half of 1976. The sample of cities with a high influence of the TM program did not differ from the other cities on the demographic variables of population, population growth and density, social composition, and baseline crime trend.

This decrease in crime rate associated with participation in the TM program has also been evident among different sections of single metropolitan areas. Within the suburban cities of metropolitan Cleveland, Hatchard (1980) found that those cities with a higher percentage of participants in the TM program decreased in crime for three consecutive years in contrast to the other suburban cities. This phenomenon began only when a number of those cities reached more than one-half of one

percent of their population participating in the program. This effect was independent of differences in police coverage and family income. Similar decreases in crime rate in 1975 and 1976 were found among cities of the Kansas City metropolitan area which had high participation in the TM program, beginning when these cities reached the one percent level (Dillbeck, Bauer, & Seferovich, 1980).

One possible alternative explanation of this finding is that there is a change in some third factor, such as an economic variable, which causes both TM program participation and decreased crime rate. The purpose of the present study is to provide a further rigorous test of the hypothesis that participation in the TM program is related to crime rate. This study is a follow-up study of the original "one-percent" cities reported by Borland and Landrith (1976), extending the sample to cities smaller than 25,000. Although random assignment procedures are obviously not practical in this type of study, the study is designed as a quasi-experiment in which reaching the one-percent level of TM program participation in 1972 is defined as an intervention which was predicted to have an influence upon crime rate trend during the subsequent years. The demographic variables found to predict crime rate which were chosen as covariates, if necessary, are city population (Spector, 1975); population density (Beasley & Antunes, 1974; Mladenka & Hill, 1976; Schmitt, 1967); unemployment rate (Spector, 1975); income (Mladenka & Hill, 1976); median years education, percentage change in residence (Quinney, 1966); and percentage of persons in the age range 15 to 29 (Sagi & Wellford, 1968).

METHOD

Sample

The experimental cities consisted of all cities in the United States with a population of larger than ten thousand in which one percent of the population had been instructed in the TM technique by the end of 1972. This study extended the sample of Borland and Landrith (1977) which took those cities in this category larger than twenty-five thousand population. Cities which were a small part of a larger metropolitan area were not included. A control city was selected to match each experimental city on resident population, college population, and geographic region, yet which had less than 0.70 percent participation in the TM program in 1972. If more than one city matched well on these three criteria, the city which best matched the experimental city on 1972 crime rate was chosen as the control. This selection of the sample was done in 1974 and was supervised by an independent investigator from another university.[1] The city of Fairbanks Alaska was omitted from the group of experimental cities for lack of a control city which met these matching criteria. There were 24 experimental cities and 24 control cities. The experimental cities had a mean percentage participation in the TM program of 1.21, while that of the control cities was 0.22 percent in 1972. Appendix A lists these cities.

Procedure

Crime totals were collected for each of the experimental and control cities for each year from 1967 to 1977. The years 1967 to 1972 served as the pre-intervention period, while the years from 1972 to 1977 formed the post-intervention period. The primary variable of interest was the change of the trend of crime rate over these two periods. The dependent variable chosen to represent crime rate trend over time for each period was the slope of the best-fitting straight line, computed by the least-squares method. Thus, for each city, the linear slope of crime rate trend was computed for the six years 1967 to 1972 and for the six years 1972 to 1977.

A second dependent variable computed for each city was the immediate change in the level of crime rate in 1973. A predicted 1973 value was computed from the least-squares regression line for the pre-intervention period (1967-1972). This was compared with the actual 1973 crime rate to test whether there was an immediate change in crime rate in 1973 after the experimental cities reached the one percent level of participation in the TM program.

The crime rate figure for each year was calulated as the number of FBI Crime Index crimes per 1000 population. The crime figures were obtained from the Uniform Crime Reports (U.S. Department of Justice, 1967 to 1977). For those cities or years for which crime data were unavailable from this source, the crime figures were requested directly from the city police department. Each city responded to this request. Where city crime figures were also not available locally, the estimated yearly crime total was obtained by linear interpolation. The yearly figures obtained from the city and by interpolation are denoted in Appendix A.

Yearly population figures were obtained from the Bureau of the Census for the years 1960, 1970, 1973 and 1975, and linearly interpolated or projected for the intervening or subsequent years, respectively. (U.S. Bureau of the Census, 1972, 1977). The number of participants in the Transcendental Meditation program for each city was obtained from the national organization which teaches the TM technique (World Plan Executive Council of the United States, 1974). The percentage of persons instructed in the TM technique in each city by the end of 1972 was computed from these figures and the population estimates cited above.

Additional demographic data on each of the experimental and control cities were also collected in order to assess the possibility of alternative causes of any of the predicted crime rate changes. The following eight variables were taken from census data: population (1973), population density (1970), median years education (1970), percentage of persons in the same residence after five years (1970), per capita income (1972), percentage of persons in the age range 15 to 29 years (1970), percentage unemployed (1970), and percentage of families with income below the poverty level (1970).

RESULTS

The first step was to compare the equivalence of the experimental and control groups on the eight demographic variables and the pre-intervention values of crime slope and predicted 1973 crime rate. A multivariate analysis was run to compare the two groups on these ten variables. The groups were found to be significantly different (Pillai-Bartlett trace, $V=0.499$, $F\ (9, 37) = 3.70$, $p = .004$).

Univariate comparisons indicated that the groups differed

significantly on the following three variables at the .05 level: median years education (1970), percentage of persons in the same residence after five years (1970), and pre-intervention slope of crime. Table 1 lists the group means for these three variables; it indicates that the experimental cities had a higher education level and less stable population in 1970, and more rapidly increasing crime rate during the pre-intervention period.

These ten variables were then entered in order of significance into Roy-Bargmann stepdown F tests in order to see if any of the other nonsignificant variables made an independent contribution to the multivariate difference between the groups. The F test values for education, population stability, and pre-intervention crime slope were, respectively: $F(1,46) = 29.53$, $p < .001$; $F(1,45) < 1$, n.s.; $F(1,44) = 5.56$, $p < .025$. None of the other variables had F values larger than unity. This indicates that the difference between the cities was primarily in terms of education and pre-intervention crime slope; the difference in stability of population was not independent of the difference in education.

Because the purpose of the study was to predict a specific post-intervention change in crime rate, it is the changing value of demographic variables which should be an alternative predictor of such changes in crime rate; existing levels of these variables would not predict time-specific changes. Thus, change from 1960 to 1970 in the variables of median education and stability of residency were covariates in the major analysis. These census years were the only recent years for which data were available on these two variables.[2] In addition, the pre-intervention slope of crime and the pre-intervention estimate of the 1973 crime rate were also used as covariates in the analyses of the change of crime rate

slope and immediate change of crime rate level.

The bivariate analysis of covariance for the change in both crime rate slope and immediate 1973 crime rate decrease was significant (Pillai-Bartlett trace, $V = 0.276$, $F\ (2,41) = 7.81$, $p = .001$).

The univariate analysis of covariance for the change in crime rate slope was significant ($F\ (1,42) = 6.18$, $p < .02$). As indicated by Table 2 and illustrated by Figure 1, there was significant decrease in the slope of crime rate among the experimental cities in contrast to the control cities. In addition, the univariate analysis of covariance for the change of crime rate from its predicted to actual level in 1973 was significant ($F\ (1,42) = 11.28$, $p < .002$). Again as listed in Table 2, there was significant immediate decrease in crime rate in the experimental cities, while not in the control cities.

Table 2 also cites the values of the comparable change, for the United States as a whole, in the two dependent variables of the study. These values indicate that the change in crime rate in the control cities was consistent with the country as a whole for the two variables of change in predicted 1973 crime and change in crime trend (Pillai-Bartlett trace, $V = 0.07$, $F\ (2,22) = 0.83$, $p = 0.45$, n.s.).

DISCUSSION

A decrease in crime rate was found in this sample of cities with one percent of their population participating in the TM program. This decrease was evident both immediately after the cities reached the one-percent level of TM program participation, and in the trend of crime rate during the subsequent five years. In addition, this change was independent of variations in those demographic variables on which the experimental and control cities differed, viz., median years education, stability of residency and

pre-intervention trend of crime rate.

The major empirical concern is whether these crime rate changes might be attributable to some alternative social phenomenon. This seems unlikely, since the crime rate change was independent of change in the demographic variables on which the cities differed, and since this crime rate decrease began suddenly at the predicted time in the experimental and not the control cities. It might be speculated that a complex interaction of unmeasured social parameters resulted in these crime rate changes at this specific time; however, this explanation seems to lack the parsimony of the major hypothesis of the study, particularly given the evidence of other studies which document a decrease in crime rate with increased participation in the TM program.

The major theoretical implication of this study, assuming that it is not those most prone to crime who seek participation in the TM program, is that the results support the hypothesis that there exists some type of social field through which a coherent effect is transmitted through the social system. If this field is defined behaviorally, such as by simple interpersonal interaction, then each TM program participant would have to interact socially with scores of others, influencing them in a positive direction. Such behavioral effects seem unlikely. In contrast, the theory described in this paper posits that the field of pure consciousness is the common source of the thought and behavior of everyone. Any effect produced from this field is thus predicted to be reflected in the behavior of the whole community.

It is clear that the findings of this study, if valid, have implications of major importance both for the practical alleviation of the problem of crime and for a fuller understanding of the relationship of individual and

collective life. For this reason, we believe that these findings should be replicated and alternative explanations investigated. In addition, truly experimental studies should be conducted in which a percentage of persons in randomly selected areas are instructed in this program.

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Footnotes

[1]At the time that the sample was selected in 1974, the control city for Carbondale, Illinois was chosen as De Kalb, Illinois rather than Marshalltown, Iowa, which was its control city in the study of Borland and Landrith (1976). De Kalb was chosen as the control city because it was a much better match for college population (Carbondale, 19,000 students; De Kalb, 24,812 students; Marshalltown, 1,000 students). The assistance of Dr. Mohan Shrestha of Bowling Green State University is gratefully achknowledged in the selection of the control cities.

[2]For four cities in the control group and two cities in the experimental group 1960 census data were not available on the variables of population stability and median years education. These cities were assigned the mean value of the respective group on each variable.

Table 1

DEMOGRAPHIC DESCRIPTION OF EXPERIMENTAL AND CONTROL CITIES

Demographic Variable	Experimental Cities		Control Cities	
	Mean	S. D.	Mean	S. D.
Median years education[a] (1970)	14.07	1.27	12.50	1.29
Stability of residency[a] (1970)	30.50	13.39	42.85	15.03
Pre-intervention slope of crime[a] (1967-1972)	4.07	2.55	2.35	1.86
Estimated 1973 crime rate	62.19	28.16	54.36	25.61
Percent unemployed (1970)	4.69	1.83	5.68	2.18
Percent in age range 15-29 (1970)	39.44	16.61	32.32	12.22
Percent below poverty level (1970)	7.05	2.85	7.47	3.24
Population (1973)	32,987	17,670	30,793	18,297
Per capita income (1972)	4236.5	1282	4094.2	1085
Population density (1970)	3637.3	1542	3854.0	2186

[a] $p < .05$

Table 2

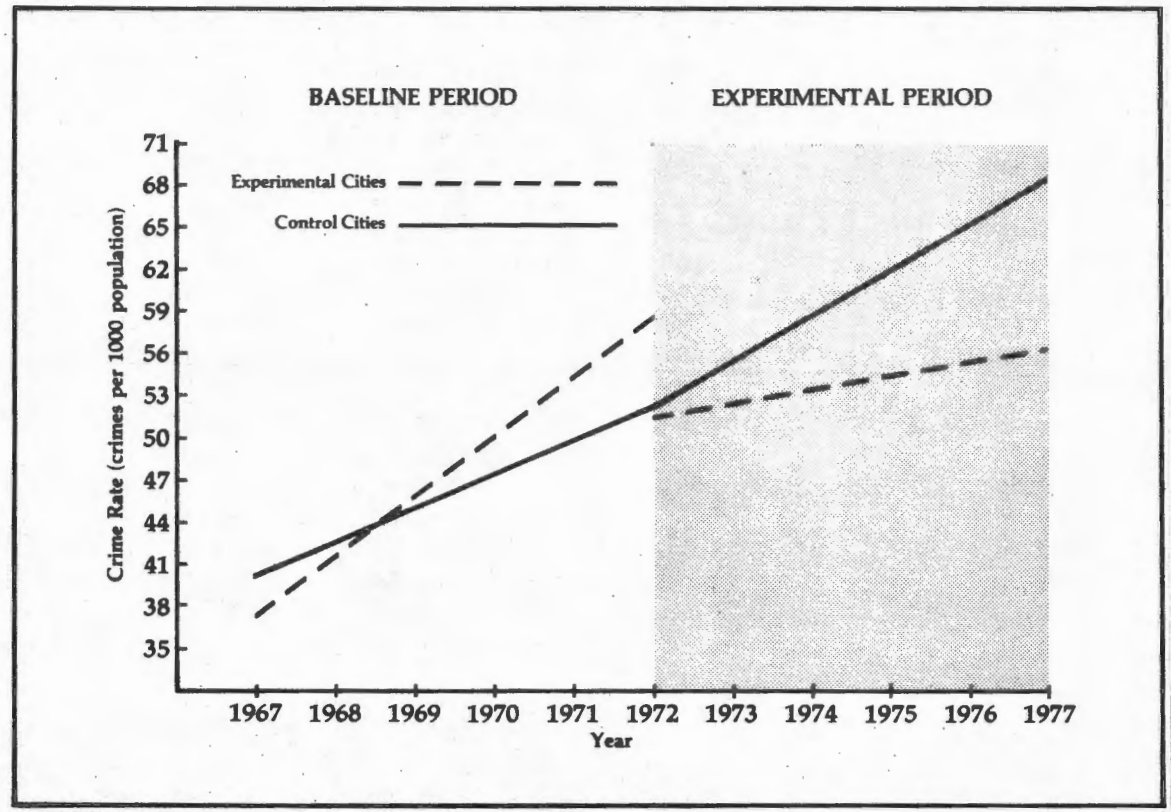
CRIME RATE CHANGES IN EXPERIMENTAL AND CONTROL CITIES

Crime Rate Variable	Experimental Cities		Control Cities		Entire U.S.
	Mean	S. D.	Mean	S. D.	Mean
Change in crime rate trend[a]	-3.12	4.41	1.60	4.45	0.48
Change in 1973 crime rate from predicted level[b]	-14.08	13.39	0.44	9.28	0.23

[a] $p < .02$ [b] $p < .002$

Figure Caption

Figure 1. Change in crime rate trend in experimental and control cities.


BASELINE PERIOD
EXPERIMENTAL PERIOD
Experimental Cities
Control Cities
Crime Rate (crimes per 1000 population)
71
68
65
62
59
56
53
50
47
44
41
38
35
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
Year

APPENDIX A:
Description of Sample
Experimental Cities

Name	Pre-Intervention Slope	Post-Intervention Slope	Predicted 1973 Crime Rate	Actual 1973 Crime Rate	Years with City Crime Estimates	Years with Interpolated Crime Estimates
1. Davis, Ca.	6.58	2.76	63.92	56.71	1976	
2. Los Altos, Ca.	3.11	-1.82	51.02	38.51		
3. Mill Valley, Ca.	3.10	1.43	76.95	66.01		
4. San Anselmo, Ca.	4.16	2.65	63.89	43.22		
5. Santa Barbara, Ca.	3.44	3.55	72.68	57.81		
6. Boulder, Co.	9.19	-1.91	102.28	61.56		1969, 1971
7. Ames, Ia.	3.09	0.94	42.30	36.78		
8. Iowa City, Ia.	3.37	3.90	40.44	33.09		
9. Chico, Ca.	7.38	-4.28	121.76	78.67		
10. Moscow, Id.	3.15	-0.74	38.34	34.57		
11. Carbondale, Il.	4.25	7.33	70.92	53.74		
12. Bloomington, In.	-0.27	5.36	18.45	18.69		
13. Lawrence, Ks.	2.11	2.84	57.57	44.48	1975	
14. Amherst, Ma.	1.44	-0.29	24.75	28.74		1968-1970
15. Concord, Ma.	4.97	-1.36	45.44	35.26		
16. Princeton, N.J.	-0.36	0.94	38.30	35.30		
17. Ithaca, N.Y.	5.50	1.82	65.02	44.00		
18. Pullman, Wa.	0.58	1.19	19.91	18.48		
19. Falls Church, Va.	3.34	-5.46	106.70	89.29		
20. Burlington, Vt.	5.90	1.40	60.93	57.89	1976	
21. Bellingham, Wa.	4.52	2.74	72.64	60.89		
22. Chapel Hill, N.C.	9.66	-0.51	99.03	50.21		1968, 1969
23. E. Lansing, Mi.	3.98	-2.97	41.71	29.85		
24. Santa Cruz, Ca.	5.38	3.32	97.68	80.89		

Co[illegible]l Cities

Name	Pre-Intervention Slope	Post-Intervention Slope	Predicted 1973 Crime Rate	Actual 1973 Crime Rate	Years with City Crime Estimates	Years with Interpolated Crime Estimates
1. Pleasant Hill, Ca.	3.45	0.43	85.34	74.55	1970, 1971	
2. El Cerrito, Ca.	3.10	4.05	69.87	64.24		
3. Martinez, Ca.	3.98	-0.48	70.07	60.61		
4. Ukiah, Ca.	-0.53	5.78	68.52	68.97		
5. Costa Mesa, Ca.	3.18	1.16	78.63	73.31		
6. Ft. Collins, Co.	1.73	2.64	49.44	41.41		
7. Norman, Ok.	3.44	1.12	47.20	52.28		
8. Oshkosh, Wi.	4.60	2.46	57.08	53.80		
9. Redding, Ca.	1.96	7.68	97.77	107.94		
10. Centralia, Wa.	-1.26	14.09	46.60	58.79	1973, 1975, 1977	1974
11. De Kalb, Il.	2.37	1.24	24.78	39.86		
12. Columbia, Mo.	2.88	4.80	43.00	41.38		
13. Lafayette, In.	1.71	2.21	49.52	48.64		
14. Oneonta, N.Y.	0.64	2.40	15.68	19.52		
15. Bedford, Ma.	1.61	5.19	22.11	14.17		1974, 1975
16. South Orange, N.J.	-0.09	6.69	12.75	34.53		
17. Oswego, N.Y.	1.11	7.60	17.98	13.64	1975	
18. Walla Walla, Wa.	4.88	2.55	78.55	80.92		
19. Radford, Va.	0.88	0.58	22.38	22.22		
20. Poughkeepsie, N.Y.	2.51	5.71	53.72	49.21		1971
21. Vancouver, Wa.	3.11	2.60	45.71	40.92		
22. Rocky Mount, N.C.	3.81	4.96	75.42	91.48		
23. Ypsilanti, Mi.	6.80	0.03	90.79	75.65		1968
24. Monterey, Ca.	0.52	1.40	81.63	87.04		

TM Program

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INTERSUBJECT EEG COHERENCE: IS CONSCIOUSNESS A FIELD?

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EEG coherence was measured *between* pairs of three different subjects during a one-hour period practice of the Transcendental Meditation (TM) program. Coherence between subjects was evaluated for two sequential fifteen minute periods. On six experimental days, these periods preceded and then coincided with a fifteen minute period during which 2500 students participated in the TM-Sidhi program at a course over 1000 miles away. After the course had ended coherence was evaluated on six control days.

It was found that intersubject coherence was generally low, between 0.35 and 0.4, with coherence in the alpha (8–12 Hz) and beta (16–20 Hz) frequencies significantly higher than at other frequencies. On the experimental days, intersubject EEG coherence increased during the experimental period relative to the fifteen minute baseline period immediately preceding the experimental period. Coherence increased significantly from baseline to experimental periods on experimental days compared with control days ($p = 0.02$). This effect was particularly evident in the alpha and beta frequencies. The results reinforce previous sociological studies showing decreased social disorder in the vicinity of TM and TM-Sidhi participants and are discussed in terms of a field theoretic view of consciousness.

In the last twenty years the Transcendental Meditation (TM) program has been taught to over two million people interested in personal development and has stimulated considerable scientific research (e.g., Wallace, 1970; Wallace & Benson, 1972; Wallace, Benson, & Wilson, 1971; see Orme-Johnson & Farrow, 1976 for 104 collected papers on the TM program). In recent years, the founder of the technique, Maharishi Mahesh Yogi, has introduced advanced techniques, the TM-Sidhi program, formulated both to accelerate personal development and to create order in what he calls the field of collective consciousness (e.g., Maharishi Mahesh Yogi, 1978).

There is now considerable experimental evidence that when a relatively small number of individuals is participating in the TM and TM-Sidhi program, there is a reduction in social disorder in the surrounding population (Aron & Aron, 1981; Dillbeck, 1981; Dillbeck, Orme-Johnson, & Landrith, 1981; Orme-Johnson, 1981a, 1981b; Borland & Landrith, 1976). The most ambitious research of this type studied a random sample ($N = 160$) of all U.S. cities over a 15 year period from (1964–1978 Dillbeck, 1981) and showed significant ($p < 0.05$ and $p < 0.01$) correlations between decreasing crime tend and percentage of TM participants in a city, controlling through partial correlations for the effects of 10 demographic variables, rate of police per population plus population, population density, median years education, percentage of persons in the same residence after five years, per capita income, percentage of persons in the age range 15 to 29 years, percentage unemployed, and percentage of familes with income below the poverty level.

In addition, Dillbeck (1981) conducted a cross-lagged panel analysis which quite consistently supported the interpretation of a causal influence of the TM program on crime rate reduction.

The issue of causality was directly studied by experimental intervention studies (e.g., Aron &

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Aron, 1981, Orme-Johnson, 1981a, 1981b). In three separate replications, Aron and Aron found that when they moved 28–40 individuals participating in the TM-Sidhi program from their usual low crime area of residence in Atlanta to do their evening TM-Sidhi program in the high crime area for one-week periods, the crime rate decreased during that period in the high crime area and increased in the low crime area they had left. The effect reversed when they moved back to their original site ($p < 0.005$). Orme-Johnson (1981a, 1981b) found that extreme social violence decreased in five trouble-spot countries (in Central America, South east Asia, Southern Africa, and the Mid East) during the approximately one-month period in which groups of 100 or more were flown into the various countries to participate collectively in the TM-Sidhi program. In both of these studies (Aron & Aron, 1981; Orme-Johnson, 1981a, 1981b) the TM participants did not directly interact with the local population. They simply did their TM-Sidhi program collectively in the area.

These remarkable results are interpreted as supporting a field theory of consciousness. The originator of the techniques, Maharishi Mahesh Yogi, proposes that the larger the group practicing the TM-Sidhi program together, the greater the effect it will have on this field. On the occasion of a group of over 2500 TM-Sidhi participants attending a course in Amherst, Massachusetts, and thus practicing the TM-Sidhi program together, it was decided to investigate any possible field effects. If consciousness is a pervasive field, and if a large group of individuals influencing that field would intensify field effects, it seems possible that we could detect such effects even at some distance from that group. This we attempted to do in our EEG laboratory in Fairfield, Iowa, some 1170 miles from the site of the course.

For the last six years we have been studying the effects of the Transcendental Meditation program on EEG spectra and coherence in the individual (Dillbeck & Bronson, 1981; Dillbeck, Orme-Johnson, & Wallace, 1981; Hebert & Lehmann, 1977; Levine, 1976; Orme-Johnson, 1977; Orme-Johnson & Haynes, 1981). Since the EEG is sensitive to changes in consciousness, we hypothesized that field fluctuations might be detected by analyzing the EEG coherence between subjects. Their EEGs might be expected to rise and fall in synchrony, much as corks riding on a wave rise and fall together. The experimental question was whether the group participation in the TM-Sidhi course by 2500 people in Amherst would increase the EEG coherence *between* three subjects at the Fairfield EEG laboratory.

METHOD

Subjects

The subjects at MIU in Fairfield were two females, 23 and 25 years old, and one male, 28 years, all in good health.

Apparatus and Data Reduction

Primary amplification of the EEG signals was by a 17-channel EEG and Polygraph with amplifiers set at 0.3 Hz, 0.1 Hz and 5μV/mm for EEG with a 60 Hz notch filter in. The output of the J6 of each EEG amplifier was digitized on line to 12 bits at 60 Hz on a 32 K word Nova 3 minicomputer system. Records of 4 sec (240 samples per channel) were recorded on a nine-track, 75 inch/sec 800 bytes per inch magnetic tape subsystem.

All 12 channels of EEG data were Fourier transformed. Coherence was computed for the EEG *between* each pair of the three subjects (S1–S2, S2–S3, S3–S1) between the corresponding leads of each pair of subjects (F3 to F3, F4 to F4, C3 to C3, C4 to C4). Coherence was then averaged into 12-sec epochs for each of five frequency bands: delta = 1.17 to 4.45 Hz, theta = 4.45 to 8.20 Hz, alpha = 8.20 to 11.95 Hz, beta 1 = 11.95 to 15.7 Hz and beta 2 = 15.7 to 19.92 Hz.

The individual data from the three pairs of subjects were then averaged together for each 12-sec epoch (the average of three successive 4-sec epochs). This provided five data points of average between subject coherence per minute or 75 data points for the 15-min baseline period before the TM-Sidhi participation in Amherst and 75 for the 15-min experimental period during the TM-Sidhi participation in Amherst. This analysis was done for each of the five EEG frequency bands for F3, F4, C3, and C4 leads (i.e., 20 variables, see Levine, 1976 for further details on how coherence was computed).

Procedure

At MIU in Fairfield, on six experimental days (August 7, 8, 9, 10, 11 and 13, 1979) the three subjects were assigned to three separate sound-attenua-

ting adjoining rooms to practice their usual TM program for one hour during which their EEG was measured. The period of the TM program is known to be one of mental and physiological quiescence (e.g., Wallace, 1970) and therefore was considered to be a low-noise preparation for detecting possible field effects.

Each experimental day for a 15 min period beginning at 3:55 p.m. (the experimental period), the course members at Amherst participated in a particular TM-Sidhi technique purported to create coherence in collective consciousness (Maharishi Mahesh Yogi, 1978). There is no direct intention to reduce crime or to influence the surrounding population in any way during the TM or TM-Sidhi program. The predicted effects on collective consciousness are a "by-product" of the practice itself, in which attention is inwardly directed. (See Appendix for a description and examples of the experience of the TM-Sidhi technique.)

Each of the three EEG subjects at MIU began the session 15, 20, or 25 min before the experimental period; no two subjects began at the same time and the starting times were randomized with the constraint that each starting time period was used twice by each subject. The 15 min period immediately preceding the 15 min experimental period was the baseline against which changes in the experimental period were compared. As a control procedure, the same subjects were measured at the same time of day under identical laboratory conditions for six additional control days (September 6, 7, 8, 10, 11, 12, 1979) after the Amherst course was over and the group had dispersed. Intersubject coherence during the experimental period was compared with intersubject coherence during the preceding 15 min period, the baseline. The change in coherence from baseline to the experimental period on experimental days was compared with changes during equivalent periods of time on control days.

RESULTS

Time series analysis (Glass, Willson, & Gottman, 1975) showed that the occurrence of autocorrelations in the data was less than one fourth the level expected by chance. This indicated that the successive 75 data points in each 15 min period were independent. Furthermore, experimental and control days were uncorrelated on any of the 20 coherence variables. Therefore, analysis of variance was appropriate to analyze the data for the differences between the two periods of each session and the two groups of days (Note 1).

Figure 1 shows that the mean intersubject coherence tended to be low, ranging from 0.35 to 0.4, but that there were reliable differences between the levels of coherence in different frequency bands. For example, alpha and beta 2 coherence were approximately five standard errors of the mean higher than delta coherence on both experimental and control days. It can also be seen in Figure 1 that coherence tended to increase by approximately two standard errors during the experimental period compared with the baseline on experimental days and that there was generally less of an increase on control days. This effect was particularly evident for the alpha and beta 2 frequency.

Figure 2 shows the overall pattern of change from baseline to the experimental period for experimental and control days for the 20 variables. Multivariate analysis of variance showed a significant interaction of periods (baseline and experimental) and days (experimental and control), Pallais $V = 0.113$, $F(20, 277) = 1.76$, $p = 0.02$. This interaction indicated that intersubject coherence over all frequencies and derivations increased significantly

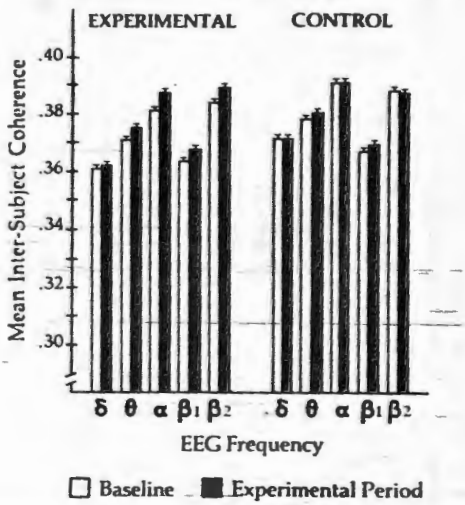

FIGURE 1 The mean intersubject EEG coherence of the four derivations (F3, F4, C3, C4) for each frequency band for experimental days (left) and control days (right). Open bars represent the 15-min pre-experimental baseline period immediately before the 15-min experimental period, which is represented by the dark bars. The error bars are one standard error of the mean. Alpha and beta 2 coherence were approximately 5 standard errors of the mean higher than delta coherence. Coherence increased more during the experimental period on experimental days than on control days, especially in alpha and beta.

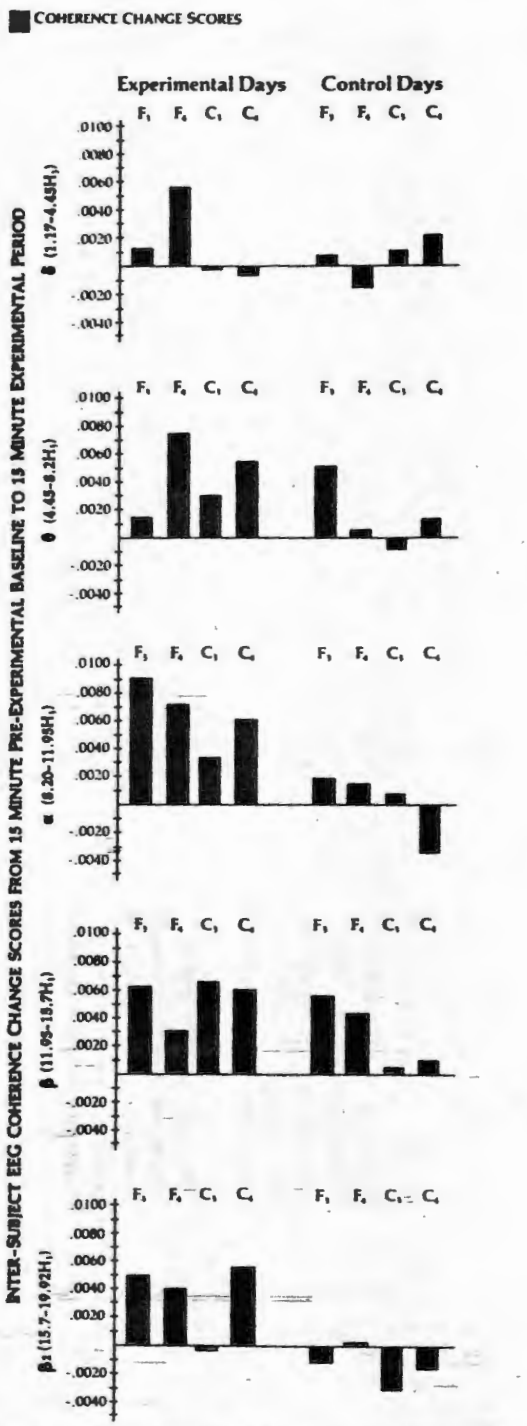

FIGURE 2 Change scores of intersubject coherence (15-min experimental period minus 15-min baseline) shown for all EEG frequencies and derivations for experimental days (left) and control days (right). Multivariate analysis of variance showed that coherence increased significantly more on experimental days compared to control days ($p = 0.02$).

more during the experimental period relative to the baseline period on experimental days than on control days, consistent with the hypothesis of the experiment.

Whereas alpha coherence increased, alpha power over all derivations decreased significantly ($p < 0.001$) during the experimental period relative to the baseline on experimental days in contrast to change on the control days (see Fig. 3). Since coherence reflects both stability of phase and power, combination of increased coherence together with decreased power indicates a significant increase in phase stability of alpha EEG between subjects during the experimental period on experimental days.

Figure 4 shows the day by day results on experimental days for alpha coherence in F3 and F4 derivations. Coherence tended to increase on each experimental day. It can be seen that in Figure 4 there were no systematic effects of repeated measurement, such as a progressive decrease in coherence over successive sessions which might account for the difference between experimental days and control days.

Figure 5 shows the individual data points for F3 during the baseline and experimental period on experimental and control days. There was a clear transition in the intersubject coherence to increased values, particularly in the lower ranges during the experimental period on experimental days.

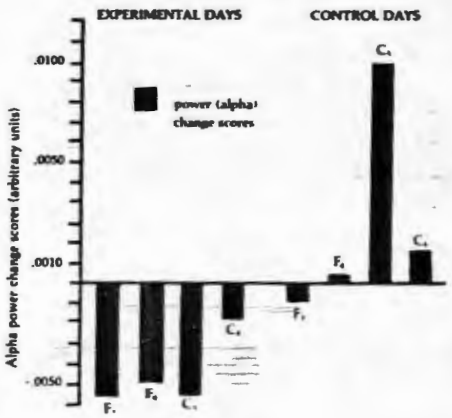

FIGURE 3 Change scores (15-min experimental period minus 15-min baseline) for alpha frequency power shown for experimental days (left) and control days (right). Multivariate analysis of variance showed that power decreased on experimental days relative to control days ($p = 0.001$).

p. 658). A possible explanation of the present results is that, like other quantum mechanical systems the brain may have a ground state of functioning, reached during the TM and TM-Sidhi program, which is sensitive to and can modulate an underlying extended field of consciousness.

Regardless of what the conclusive theoretical explanation of the present experimental results may be, this experiment points to a novel neurophysiological approach to studying the sociological effects reported to be produced by the TM and TM-Sidhi techniques, and perhaps other social phenomena as well. They indicate that this remarkable new technology for creating coherence in collective consciouness could potentially lead not only to the improvement of the quality of life in cities, as the crime studies cited above suggest, but also to the resolution of international conflicts and the establishment of world peace.

APPENDIX

1. The Transcendental Meditation technique is an effortless process of allowing awareness to settle to subtler stages of the development of thought until the mind reaches the state of pure consciousness which is said to be conscious awareness without thought activity, the "state of least activity of consciousness" (see *Maharishi Mahesh Yogi on the Bhagavad-Gita*, Baltimore: Penguin, 1969, p. 144). The TM-Sidhi techniques are mental procedures practiced during the period of the TM program. The purpose of the TM-Sidhi techniques is to develop specific channels of psychophysiological functioning, such as sensory abilities, developed emotional virtues, etc.

The particular TM-Sidhi technique practiced by the 2500 students at Amherst during the experimental period was the TM-Sidhi "flying" technique. According to an ancient text of several thousand years antiquity the results of the flying sidhi develop in stages: shaking of the body, then hopping, then "walking on air" (Vasu, 1975, Orme-Johnson & Farrow, 1976, pp. 705–712). Quite independently of knowledge of these predicted states, the TM-Sidhi participants practicing this technique have experienced the first two stages.

The following are four independent subjective experiences of the TM-Sidhi flying technique.

"The first time it was totally unexpected and I had the sensation that I only had time to grab ahold of my knees before I took off. The first time that I hopped I wasn't aware of my surroundings or anything else. I had the sensation that I was hopping through black outer space and nothing else was there but me."

"I feel a very fine generating of energy within myself just before I bounce. And then very easily without any heaving or effort I take off. The body is becoming lighter and ligher, turning more into an ethereal substance."

"It's the greatest feeling of freedom I ever had. I'm free from today and I'm free from myself and yet I'm completely full in my individual self and it's very, very blissful."

"When flying in a group of 1600, the luminous energy which is usually experienced inwardly and privately when meditating alone was external and permeating the atmosphere. Superradiance was so strong that wave after wave of joyful energy swept through the room and each time everyone was simultaneously in the air, it was as if the whole cosmos were laughing."

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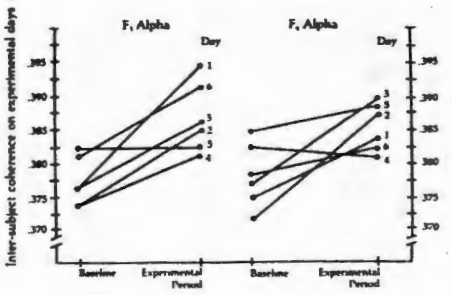

FIGURE 4 Mean intersubject EEG alpha coherence for three pairs of three subjects for 15-min pre-experimental baseline and the 15-min experimental period shown for the six experimental days for the F3 and F4 derivations

The numbers next to the curves indicate the sequence of experimental days. It can be seen that there were no systematic effects of repeated measurement. Analysis of variance showed that on experimental days the increases were statistically significant for F3 alpha and F4 alpha ($p = 0.0005$ in both cases).

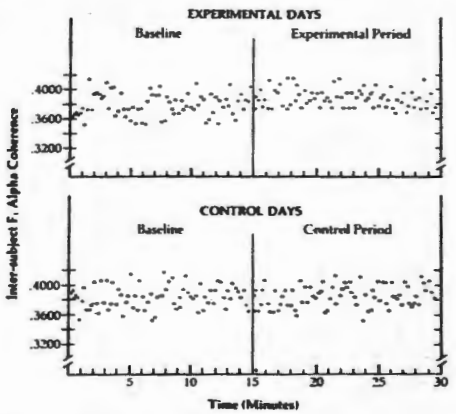

FIGURE 5 Individual data points for intersubject coherence in the F3 lead plotted for experimental and control days. Coherence increased during the experimental period relative to the baseline on experimental days but did not change during the equivalent control period on control days. The increase in coherence during the experimental period is particularly evident for lower coherence values.

DISCUSSION

The data suggest that baseline levels of intersubject EEG coherence are greater than chance. This is evidenced by the finding shown in Figure 1 that coherence in the alpha and beta frequencies is approximately five standard errors of the mean higher than delta frequency coherence. If the delta coherence was taken as random level, then the significantly higher levels of alpha and beta are evidence of intersubject coherence above chance. However, statistically significant intersubject coherence does not necessarily mean that the three different brains (in the three different rooms) were directly interacting. The result could be modeled by three independent generators outputting waves of somewhat similar spectral compositions. In this interpretation, significant EEG coherence between different brains may merely reflect the fact that everyone has more or less similar EEG, e.g., a strong, somewhat stationary 8–10 Hz alpha wave, with a beta frequency harmonic.

On the other hand, the observed increased intersubject coherence and decreased alpha power during the experimental period could suggest a common influence operating on the three oscillators. Increased coherence indicates increased phase stability, that is, the brain waves of the three subjects had become more similar in frequency. Presumably the three oscillators were affected by a common influence, possibly due to the predicted rise in the order in collective consciousness produced by the collective practice of the TM-Sidhi technique by the group in Amherst. This interpretation is consistent with the previous sociological research discussed above showing decreased crime rate in populations containing a sufficient number of TM and TM-Sidhi participants.

Many species are sensitive to stimuli not previously known to be within the receptive domain (e.g., Baker, 1978; Schmidt-Koenig & Keeton, 1978). Humans for example have been shown to be responsive to weak electromagnetic fields on the order of 10 Hz with brain tissue gradients of 10^{-5} — 10^{-7} Vcm^{-1} which are many orders of magnitude less than the gradient needed to fire neuronal action potentials (Adey & Bawin, 1974). Such eivdence has led Domash (1976) and others (Stuart, Takahashi & Umezawa, 1979) to suggest that in addition to its classical action potentials, the brain has quantum mechanical modes of functioning. Indeed, the remarkable fact that the human eye can respond to one or two photons of green light (Bouman, 1961) or that the olfactory sense is sensitive to a single molecule of stimulant (DeVries & Stuiver, 1961) indicates that "sensory awareness regularly functions at the ultimate limit of a single quantum sensitivity . . . . It seems difficult to escape the conclusion that consciousness in itself (which persists even beyond the lower limit of sensory detection) depends essentially on single quantum processes and therefore is essentially and manifestly wave mechanical in nature" (Domash, 1976,

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Mazzocco, Bill
Washington Forum

CONSULTATION/MEETING REPORT

1. Name/current position/phone number of subject(s) interviewed:

   Bill Mazzocco//Washington Forum/337-0110

2. Working Staff Action Officer:

   Dave McMunn

3. Time/Place of interview:

   1500 on 9/20/85 at 730 Jackson Place

4. Participants:

   Ambassador Peck, Boink, Earl, McMunn

5. Experience/qualifications of subject(s):

   Active life in Government Service from Marshall Plan implementation through SE Asia Counter-in-surgency Program to Iranian Crisis. Presently consultant to State/USIA.

6. Summary of subject(s) comments and recommendations.

   A. Main theme: U.S. Government not organized in optimum way to deal with problem of terrorism today and the problem will only get bigger in future. Terrorism is a "weapons system" being deployed for a strategic purpose to erode influence of capitalist society.

   B. What should be done, that is not currently done in combatting terrorism?

   Need a strategy to combat terrorism. Do long-range projections and develop long-term relationships (MOU's, Bilateral agreements, multi-lateral forums) with foreign governments and academics.

   C. What is being done that could be improved upon?

   International framework (legal and formal) is inadequate. Need to get informal FBI/CIA working level contacts with counterparts.

   D. Areas to focus on to improve U.S. Government effectiveness in combatting terrorism:

   Set up small group for overview/coordinate/direct U.S. Government agencies comprised of full-time professionals functioning from White House. They should oversee planning, training, public information, press relations, congressional relations, international cooperation.

Montgomery, Hugh
DCI, Senior Review
Panel

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CONSULTATION/MEETING REPORT

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FOIA(b)(3)

1. Name/current position/phone number of subject(s) interviewed:

   Mr. Hugh Montgomery/DCI, Senior Review Panel/[redacted]

2. Working Staff Action Officer:

   Dave McMunn

3. Time/place of interview:

   1100, 15 August 1985, CIA HQ, Room [redacted]

4. Participants:

   Dave McMunn, Burt Hutchings, Mr. Montgomery

5. Experience/qualifications of subject(s):

   Retired career CIA (DDO, Europe and Near East)
   Former Director, Intelligence and Research (NR),
   Dept of State (Oct 81-Jan 85)

6. A. Main theme:

   No one "is in charge" of USG effort to combat terrorism. Need to devise a mechanism that makes tough decisions on short notice that can mobilize the total resources of the U.S. Government.

   B. What should be done, that is not currently done in combatting terrorism?

   Establish an organization "close to the White House" (i.e. within the NSC), consisting of a small core group that can call in others as required to decisively act on behalf of the President.

   C. What is being done that could be improved upon?

   Lead agencies (eg. State, DOD, DOJ, etc.) do not have the authority to decide issues of war and peace. The TIWG falls short of what is required (see B above).

   D. Areas to focus on to improve U.S. Government effectiveness in combatting terrorism:

   Establish a central control to effectively coordinate operational and organizational issues, [redacted]

Mooney,(Rickey) T.
Mr. Harry Telfer
Australian Protective Service

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