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Cover Art created by Chicago area musician and artist, Tim Butcher, who uses digital technology to illustrate psychedelic visions.

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MAPS

BULLETIN OF THE MULTIDISCIPLINARY ASSOCIATION FOR PSYCHEDELIC STUDIES

Budding Research

SPRING IS A TIME OF NEW BEGINNINGS. Though it's true that I'm constitutionally prone to optimism, even people with a more pessimistic frame of mind may agree that some promising seeds have been planted in the field of psychedelic and marijuana research. • In Washington State, the inspired efforts of Ms. Joanna McKee, medical marijuana patient and advocate, have begun to sprout (p. 68). Ms. McKee coordinated the successful campaign that persuaded the Washington State Legislature to pass a bill that Governor Mike Lowry signed on March 30, 1996 allocating $130,000 to study the medical use of marijuana. Research funded by MAPS into the attitudes of the people of the State of Washington concerning the medical use of marijuana played a role in this victory. • Another reason for hope involves the proposed scientific study to be conducted by Dr. Donald Abrams, UC San Francisco, to research the medical use of marijuana in people suffering from the AIDS wasting syndrome. With support from MAPS and the Drug Policy Foundation, Dr. Abrams has submitted a grant revised application to the National Institutes of Health (NIH) for peer review in the grant cycle beginning May 1, 1996 (p. 67). The NIH grant application represents the persistent continuation of a four year collaboration between MAPS and Dr. Abrams to obtain federal permission to conduct medical marijuana research. • Also promising is a show of government support for the use of a psychedelic to treat alcoholism. The National Institute on Alcoholism and Alcohol Abuse (NIAAA) has awarded a one-year grant to Dr. Evgeny Krupitsky of St. Petersburg, Russia to conduct studies into the use of ketamine in alcoholics at the West Haven Veterans Administration, affiliated with Yale Medical School, (p. 19). On April 23, 1996, Dr. Krupitsky and his family arrived in the US. MAPS funded Dr. Krupitsky's 1995 visit to the US which enabled him to make the contacts necessary to obtain the NIAAA grant. • The French government and European Community have funded research into the use of ayahuasca to treat cocaine addiction. The research is taking place at Takiwasi in Peru (p. 24). • In an inspiring example of optimism in action, two grant applications for psychedelic research have been submitted to the National Institute on Drug Abuse (NIDA). Deborah Mash, Ph.D. and Dr. Juan Sanchez-Ramos, both of U. of Miami Medical School, requested funds to complete their Phase 1 ibogaine safety study (p. 18). To strengthen their proposal, they used pilot data funded in large part by a $25,000 grant from MAPS. • Dr. Charles Grob and Russell Poland, Ph.D., both of Harbor-UCLA Medical Center, requested funds to expand their Phase 1 MDMA safety studies to which MAPS has contributed $21,000. The outcome of these two grant applications will be known sometime during the summer. Dr. Grob is now preparing to apply to the FDA to conduct a study to be funded by MAPS into the use of MDMA in the treatment of pain and distress in cancer patients (p. 6). • The European College for the Study of Consciousness conference in Heidelberg generated even more reasons for optimism, as did the speech given there by Dr. Albert Hofmann who had just turned 90 (p. 46) . In response to a need for some outside support for ground-breaking studies, MAPS has made a commitment to donate $15,000 to a pilot study in Switzerland into the therapeutic use of MDMA, $10,000 to a pilot study in Germany into the therapeutic use of a psychedelic yet to be determined, and up to $8,500 for d-fenfluramine challenge tests and functional MRI studies of MDMA users in England (p. 7). These studies are expected to start in late 1996 or early 1997. European studies currently underway include research in Switzerland (p. 8) and in Germany (p. 10). • Amidst all these new beginnings in research, my wife and I await this spring the most miraculous beginning of all, another child. As I think of the world she will enter, I feel deep gratitude for the over 1,000 MAPS members who have joined in MAPS' struggle to heal the world that we inhabit and that our children will inherit. I hope we all find that this Spring bears fruit in the fields of love and work. Rick Doblin, MAPS President, May 1996. •

WHO

psychedelic drugs and the work of the **world health organization** program on substance abuse

Maristela G. **Monteiro**, M.D., Ph.D.

THE WORLD HEALTH ORGANIZATION (WHO) is a specialized agency of the United Nations with primary responsibility for international health matters and public health. Its main objective is the attainment by all peoples of the highest possible level of health. Health is defined as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Reduction of the health and socially adverse consequences of psychoactive substance use is an essential part of that objective.

The Program on Substance Abuse (PSA) was established to intensify the WHO's response to alcohol and other drug-related problems worldwide.

Over the years WHO has regularly issued information and recommendations on research, training and the provision of health services to deal with alcohol and other drug-related problems.

The Program on Substance Abuse (PSA) was established in 1990 to intensify the response to these worldwide problems, in the areas of Regulatory Control, Prevention, Advocacy and Promotion, and Treatment and Care. In the area of public health, PSA has responded by designing a global strategy modeled on methodologies proven successful with other health and social problems, stressing the relevance of primary health care, and the need to promote healthy lifestyles.

WHO recognizes that people who take such substances do so for a wide variety of reasons, and these may vary from time to time for the same individual. Some of the reasons given for drug taking include the need to alleviate stress and pain, to foster a sense of easy relaxation, to facilitate relationships, to escape from something, to reduce hunger or fatigue, to seek euphoria or increased vigor, energy or courage, to search for new realities, to gain access to mystical and religious experiences, to achieve better insight or creativity, or to satisfy curiosity about drug effects.

Such motives are not necessarily associated with individual pathology or with adverse social influences. They can be functional for normal as well as abnormal persons, whether or not such persons are satisfied with the social structure and situation in which they find themselves. In addition, these motives do not necessarily lead to drug-taking.

The availability of psychoactive substances is a necessary but not sufficient condition for their use. As the efforts to control the supply of drugs have not been successful, the problem is to learn how to reduce the negative effects of the use of drugs to the lowest possible level without undue detriment to society. Although no use would be ideal, the reality is that communities must learn to live with drugs, that is, by helping people, particularly the young, to live with the presence of psychoactive substances without being negatively affected by them.

To increase the understanding of health and social consequences of substance use and be able to recommend appropriate and effective strategies to Member States, the Program on Substance

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Abuse has a variety of projects in the areas of prevention, health promotion, service development, community empowerment, action-oriented research, biomedical research, treatment, and regulatory control. Below, two projects related to psychedelic substances are detailed.

Use of indigenous plants

Herbal medicine is one important resource which had contributed to man's struggle against diseases and has been an important component of health care systems for thousands of years. Especially in developing countries, people recognize the value of medicinal plants in the treatment and prevention of several diseases. Among the hundreds of species which have been used in traditional medicine and by indigenous populations, the use of psychoactive plants has long been recognized. These plants have been used for a variety of purposes, ranging from sleep problems, to increase a sense of well being, to calm, to alter mood and levels of consciousness, in rites of passage or initiation, and to induce transitory visionary states which would indicate solutions for the community's or individual problems.

Apparently, the traditional uses within a culture of psychoactive substances have not been associated with major health problems, including dependence or harmful consequences. However, relatively little have been investigated and it is likely that for some of them, therapeutic applications could be proven effective in clinical practice.

Recent advances in the neurosciences in the last 20 years have also created opportunities for using psychoactive plants, including hallucinogens, as tools to understanding the brain and the neurobiological basis for some psychic functions, and hopefully to develop more effective treatment for mental disorders.

As a result, WHO has a project aimed at documenting the botanical, pharmacological, toxicological and therapeutic properties of selected psychoactive plants. It is proposed to collect current information on the extent, nature and consequences of use of these plants in different regions of the world with a particular focus on traditional patterns of use. Selected psychoactive plants would then be further investigated, including khat, ayahuasca, kava, betel nut and San Pedro cactus.

The information collected from different regions of the world will be compiled in a publication, which would also indicate gaps in knowledge and recommend strategies for action for Member States and interested individuals and institutions.

Drug Substitution & Treatment

The AIDS epidemic has called attention to the need for alternative treatment for dependent users of psychoactive substances, especially those who inject drugs. While reduction in consumption would be ideal, many of these dependents are not willing or ready to do so; however, the risk of HIV infection and spread to others cannot be ignored as it has become a public health problem of great importance. Harm reduction approaches, including syringe exchange programs have flourished and have been effective in controlling the transmission of HIV through i.v. drug use.

HEROIN IS THE MOST COMMON injected drug and heroin dependence is a problem in several parts of the world. The most widely used treatment is methadone maintenance, an opioid substitute which can be given orally as well. However, some heroin dependents, usually chronic patients with severe health problems, do not accept such treatment, diverging the methadone to illegal sale in order to obtain heroin. For these patients, other treatment approaches are needed.

Substitution treatments have been tried for other drugs as well: coca tea for cocaine dependents or anxyolitics for alcohol dependence. The definition of substitution which has been adopted is: "for people dependent on a psychoactive substance, the administration of a prescribed drug, pharmacologically related to that substance, to achieve defined treatment aims, usually improved health and well-being."

There are some criteria for a drug to be appropriate for substitution:

- cross-tolerance and cross-dependence with the psychoactive substance causing dependence
- reduce craving and supervision of withdrawal
- clients can be stabilized on the drug (stabilize consumption within a therapeutic range)
- facilitates psychosocial functioning and improves health
- acceptable to clients
- no long-term toxic effects
- affordability and availability

It is also desirable that the substance:

- does not grossly impair psychomotor functioning
- is less attractive for diversion than the psychoactive substance causing dependence
- does not have gross short-term toxic effects

Oral use of cocaine for chewing or infusions is a common practice in Andean countries such as Peru and Bolivia; it taken by more than 5 million

Among the hundreds of species of medicinal plants which have been used in traditional medicine and by indigenous populations, the use of psychoactive plants has long been recognized.

people. There are, however, no comparative studies on physiological and psychological effects after ingested cocaine by oral route with other routes. People who use oral cocaine for traditional uses and in hot or cold infusions, do not report mental, physical or behavioral troubles. Cocaine is well absorbed from the gastrointestinal tract, and can be detected in plasma and urine with toxicological tests after chewing or drinking. There are no described toxic or ill effects resulting from normal consumption in this way. Coca tea has also been used with apparent success for cocaine dependence in well-controlled studies.

In Thailand, herbal medicines are used for opium dependence but have not been well evaluated to date.

In Switzerland, a longitudinal study is being carried out to analyze the long term effects of the medical prescription of different narcotics (i.v. heroin, i.v. morphine, i.v. methadone) in long term heroin dependents with signs of severe social disintegration. Several variables are being analyzed: health status, risk behavior, multi-drug use, psychological well-being, social disintegration, delinquent behavior, and work capacity. The trials are taking place in eight Swiss cities. It seems that prescription heroin could be a feasible substitution treatment for heroin dependents who do not accept other forms of treatment.

MOST OF THESE TREATMENTS, however, have been weakly evaluated and much research is still needed. Therefore, WHO designed another project to gather data on national practices of drug substitution and to provide information on the feasibility and efficacy of such programs. It is also aimed at identifying substances which may potentially be used in drug substitution programs.

A review of the literature on the pharmacological aspects of drug substitution, cross-cultural comparisons, and program acceptability and cultural sensitivity will be prepared. An expert consultation meeting will be organized to evaluate the literature review and to prepare a report on the findings of the literature review to make recommendations for further action.

Psychedelics as a Pharmacological Treatment Approach

Although the data regarding psychedelics for the treatment of psychiatric patients are not very strong, the discussion should be widened to include the problems we now have with all psychoactive substances. Systematic research and careful attention to selection, screening, preparation, supervision and follow-up of subjects are absolutely necessary.

More research is needed in the area of hallucinogens, including the use of plants by indigenous people which may indeed lead to new therapeutic developments. At the same time, one must take into consideration that the problems researchers and clinicians will face when carrying out such research are not exclusive to hallucinogens but reflect international trends in drug-related policies in many countries. For example:

1. The criteria used to control psychoactive substances are not applied "equally" to all of them. Alcohol and tobacco are by far the most toxic substances, clearly causing dependence and a wide range of health problems, but are not controlled as LSD or heroin (I am not saying they should be). Therefore, to compare, for example, one psychedelic: psilocybin to another: LSD, and to demonstrate its safety would not be enough to make these substances available by prescription or legalized.

2. Changes in drug policies are outside the scope of WHO. The International Narcotics Control Board (INCB) is the highest authority in

Given the preliminary nature of recent studies and the fact that basic questions have not been

this area. The INCB can officially request WHO to evaluate substances from the liability of new products, but it is up to them to decide how to regulate them. WHO can have projects on the implications of policy on health, or how policies address public health problems, for example.

3. Psychedelics are hallucinogenic and individuals under their influence can engage in risky behaviors, can have impaired judgment, or can engage in dangerous acts with risks of physical harm. One could not assure that their use would be restricted to medical purposes, and it must be shown that their therapeutic benefits outweigh their potential harm if used outside a controlled environment. As Strassman said in his article "hallucinogens are powerful drugs, with the potential to elicit or exacerbate psychiatric symptoms" (Strassman, 1995). The same which was said about LSD could happen with psilocybin: "...once hallucinogens escaped from the laboratory, however, emergency rooms and clinics were quickly impacted by adverse effects in unprepared, unsupervised and psychiatrically ill individuals taking LSD..."

4. With cannabis, for example, a physical dependence syndrome with clear withdrawal signs is still questioned as a diagnosable entity, the acute effects are mild, and there are several proven medical uses for the substance. Nonetheless, it is still a controlled substance. With psychedelics, there is only evidence for potential psychiatric use, but this research is still quite limited.

5. Regarding the studies on the therapeutic efficacy of psychedelics, it must be recognized that most of them were carried out more than 30 years ago and were with a limited number of participants. Studies with LSD included numerous patients and still "these studies were hampered by lack of adequate control groups and impartial raters, small sample size and primarily anecdotal data" (Strassman 1995). This situation and interpretation of results may differ nowadays.

6. Studies on LSD for substance abuse treatment "were numerous, and while initial reports were enthusiastic, studies using control groups and longer follow-up demonstrated less impressive results..." "...with alcoholics meaningful generalizations could not be reached..." (Strassman 1995).

I THINK RESEARCH SHOULDN'T STOP but it must be as scientific as possible. Faith should not replace reason in such an important area, because we may take the risk of going back to the Middle Ages. We need to advance forward by opening our minds to new tools and paradigms of investigation while keeping track of the scientific method and need for accuracy.

Given the preliminary nature of recent studies and the fact that basic questions have not yet been answered yet, what can be done at the international level? What type of activity or project could one suggest which could be taken on by WHO or any other international agency? Who can be the potential donors/funders for such projects? Who should participate? Would the randomized controlled trials (RCT) be the only alternative for research design? •

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answered yet, what can be done at the international level?

Harbor-UCLA **mdma** research update

Charles S. **Grob**, M.D.
Harbor-UCLA Medical Center

OVER AN 18 MONTH PERIOD, 18 subjects entered into our Phase 1 MDMA research study have received extensive evaluation of the effects of MDMA administration. Eight additional subjects with prior MDMA experience, but who were not enrolled in the Phase 1 administration arm of the investigation, received brain scans. Our preliminary findings, although very intriguing, nevertheless represent evaluation of only a relatively small number of subjects. Further study will be necessary to corroborate our preliminary findings and to determine whether the interesting associations we have found between MDMA use and short and long term physiological and psychological effects hold up.

We are particularly interested in examining the effects of MDMA on patient populations with conditions that do not respond well to conventional treatments

WE ARE CURRENTLY in the process of obtaining approval and necessary funding for an extension of our Phase 1 research which will investigate the use of serotonin receptor and uptake modulators as a method to better elucidate the mechanism by which MDMA exerts its unique central nervous system effects. Initially, we intend to examine to what degree the serotonin re-uptake blocker fluoxetine will block or alter the effects of MDMA, as measured by subjective psychological rating scale instruments, physiological vital signs (eg. temperature, blood pressure, etc.), pharmacokinetics, neuroendocrine hormonal assays and magnetic resonance spectroscopy scans of the brain. Subsequent to studying the effects of fluoxetine, we will be interested in examining how specific serotonin receptor antagonists alter the effects of MDMA.

Once all necessary approvals for our Phase 1 extension have been secured, we are then planning to approach the relevant regulatory agencies to request permission to initiate a research study designed to examine the effects of MDMA as treatment in a small number of subjects carefully selected from specific patient populations. We are particularly interested in examining the effects of MDMA on patient populations with conditions that do not respond well to conventional treatments, including substance abuse, chronic post-traumatic stress disorder and the psychological distress and physiological pain of individuals with certain end-stage medical illnesses.

We would again like to express our appreciation to MAPS and to those individuals who have generously donated the necessary funding which has allowed us to conduct our Phase 1 MDMA research investigations.•

mdma (ecstasy) studies at the maudsley hospital and london institute of psychiatry

Karl L.R. **Jansen**, M.D., Ph.D.

THIS RESEARCH FOCUSES UPON THE OUTcome in humans of self-administering very high doses of MDMA over prolonged periods. While this avenue has been previously explored, the present study generally has subjects who have taken considerably higher doses than in most previous studies. For example, the Maudsley project includes a person who injected an average of 250 mg of pure MDMA powder four times per day for six months, sometimes taking up to four grams in 24 hours (by injection) which is a level of use approaching some of the animal administration paradigms.

D-fenfluramine challenge tests

Central serotonergic functioning has been assessed using a d-fenfluramine challenge test. The d-fenfluramine is swallowed by the subject. It causes a release of serotonin which binds to the appropriate receptors and in turn triggers a release of the hormones cortisol and prolactin. The release is monitored throughout a morning and generally increases on a known curve. The hypothesis is that this curve will be blunted if there is serotonergic hypofunction. Such blunting is seen in some forms of depression. This test was pioneered at the Maudsley, and the lab thus has considerable experience with the method and its interpretation. Neuroendocrine tests have already been used to investigate MDMA users, but the results were generally inconclusive. While the present study certainly has its weaknesses, the overall design is such that if the results indicate normal function amongst the relevant portion of the serotonergic system which is tested, this could be accepted as reasonably conclusive. However, if the results show that there is an underactive response to d-fenfluramine, then further studies will be required. The correct interpretation of the results will then be less clear due to several confounding factors which it has been difficult to eliminate from neuroendocrine tests in this area.

These studies also involve questionnaires and rating scales. Some of these are focused upon key issues such as long-term effects on sleep, sex drive, appetite, weight, dreams, mood (with a particular focus on depression, mania and anxiety), aggression and also positive changes in psychological state. It must be stressed that the study is wholly focused upon long-term effects of very high use patterns — acute effects, of either a positive or a negative nature, are not dealt with at all. MAPS has contributed $1,960 to this study to cover payment of volunteers' travel expenses and a small stipend.

Functional MRI study

The Maudsley Hospital Ethical Committee approved a protocol in which subjects are given 1.4 mg/kg MDMA and assessed using functional magnetic resonance imaging (fMRI) of the brain, before taking the drug and during the period of peak effect. Brain scans which assess function of particular areas are leading to huge and exciting advances in psychiatry. In this paradigm, the brain is activated by wearing goggles which flash colored lights, and wearing headphones through which an emotional book passage is read to activate the emotional brain by auditory means. This is thus called a 'vis-aud' study.

Application has yet to be made to the Home Office for a licence to carry out this study, but we are hopeful that the study will be supported as it has local ethical approval, and the public pressure (principally from concerned parents) for research in this area has become intense. MDMA use is regarded as a major public health issue in the UK. All of the subjects will already have self-administered MDMA without undue consequence. The study involves comparing persons who have taken MDMA less than 5 times with persons who have taken MDMA more than 1,500 times. •

Consideration is also being given to possible studies involving ketamine. Karl Jansen is currently writing a book about ketamine and would be interested in hearing from any person who has a view or knowledge concerning ketamine.

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mdma research in switzerland

IN THE AUTUMN 1995 ISSUE of the MAPS newsletter, Dr. Franz Vollenweider gave a brief outline of an upcoming MDMA study to be carried out at the Psychiatric University Hospital in Zürich. As this project forms the body of my thesis in neurobiology, I would like to use the opportunity to give a more detailed account of the study design and the goals we are pursuing with this investigation.

Alex **Gamma**

Background

Roughly a decade has passed since MDMA (Ecstasy), coming from the United States, made its first appearance in Europe. From the outset, Ecstasy has been closely tied to the nascent rave scene emerging from the Manchester area in England where the first house parties were held. Subsequently, this scene swept all over the continent and took Ecstasy along with it. In recent years, MDMA consumption has dramatically increased (with the number of doses consumed world-wide since the mid-eighties probably approaching or even exceeding one billion) and Ecstasy receives much media attention, particularly with regard to fatalities related to MDMA use at parties.

From animal studies it is known that high or repeated doses of MDMA can cause neurotoxic damage to serotonergic nerve cells. The serotonergic system is thought to be involved in processes of learning, memory and vigilance but also in mood and sleep regulation. Areas affected include the frontal cortex, hippocampus, striatum and hypothalamus. In spite of such damage, possible behavioral or functional consequences of neurotoxicity have hardly been found in animals. The important question remains whether Ecstasy use in humans leads to comparable neurotoxic damage and whether there is danger of lasting functional deficits in long-term users. The few existing studies in this field have yielded only few and dispersed results. In view of these scant findings, our project is designed to shed some more light on the acute and potential long-term effects of MDMA in humans.

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Study Design

The study centers upon two basic questions. first: What are the acute physiological and psychological effects of MDMA? And second: Are there any detectable functional alterations in chronic Ecstasy users indicative of potential neurotoxicity? In order to get answers to these questions we will examine two groups of subjects: drug-naive volunteers (n=15) and chronic Ecstasy users recruited from the rave scene (n=15). Drug-naive subjects will be examined both under resting conditions and under the influence of a single dose of MDMA (1.75mg/kg). This group (prior to MDMA administration) will function as the control. The chronic users will only be tested drug-free, because the question of most interest to us is whether heavy users have any deficits in their "normal" life (i.e. drug-free, everyday life).

All subjects will receive [15-O]-PET scans (PET= "positron emission tomography") for the measurement of cerebral metabolic activity while performing a neuropsychological task of sustained attention ("Continuous Performance Test" or CPT). 32-channel EEG and ERP ("event-related potentials") will be co-registered during the scan. In addition, standard psychometric

...it will be very interesting to see how MDMA affects metabolic activation in

the frontal cortex

rating scales will be used to assess MDMA-induced changes in mood, perception and ego-structure. Our main foci of interest are attentional processes based on frontal lobe circuitry. The CPT has been shown to activate particular areas in the prefrontal cortex. Since MDMA acts upon serotonergic projections, which abundantly innervate the frontal lobe, it will be very interesting to see how MDMA affects metabolic activation in the prefrontal cortex and whether it will impair or even enhance attentional processing. In chronic consumers, we hope to clarify the important question whether heavy Ecstasy use can alter brain metabolism and maybe lead to attentional deficits. We are, however, aware that potential cognitive deficits in chronic users might be very small, since studies investigating this question have not found anything consistent up to now. We believe that maybe ERP brainwave recording will be subtle enough to detect possible MDMA-induced changes in attentional processing since its temporal resolution in the millisecond range is far superior to that of PET. Moreover, in co-registering EEG brainwaves and PET metabolic activity we attempt to correlate data from these two complementary techniques. The study design is placebo-controlled and blind. Experiments are due to begin this summer and the project is planned for three years. Funding is secured for one and a half years but additional funding might be needed afterwards.

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processing.

(Collaborations: Dr. A. Buck, PET department of the University Hospital, Zürich. Prof. D. Lehman, KEY Institute, Zürich, for the EEG recordings. Dr. D. Brandeis, Child and Adolescent Psychiatry Department, Zürich, for the ERP recordings.)

MDMA effects on PPI

In addition, we have a smaller project destined to start earlier. MDMA effects on pre-pulse inhibition (PPI) and selective attention (Stroop test) will be examined in 15 drug-naive subjects. PPI is based on the observation that a sharp acoustic stimulus elicits a startle reflex in a variety of species, including humans. Giving a weak pre-pulse before the actual stimulus leads to an attenuation of startle reflex amplitude. This effect can be disrupted in patients with psychiatric illness or by pharmacological stimulation in healthy subjects.

Although there is a theory of what disruption of PPI could mean, it is not well known what the PPI effect itself actually means. It could simply be a low-level property of sufficiently complex nervous systems which perhaps should not be interpreted too much in terms of higher functions. However, disruption of PPI is associated with the failure to filter irrelevant stimuli and to adequately focus on relevant information. Such an inability has been speculated in schizophrenia, too, since certain groups of schizophrenics show PPI disruption. Generally speaking, disruption of PPI suggests the disruption of "normal" attentional processing.

(Collaborations: Prof. M. Geyer, UCSD.) •

ongoing human studies with **mde** and other psychoactive drugs in germany

Euphrosyne **Gouzoulis-Mayfrank**, M.D.

MDMA (Ecstasy) and related compounds like MDE (Eve), MMDA and MBDB are thought to exert unique psychological effects in humans, differentiating them from the chemically related stimulant amphetamines and phenethylamine psychedelics. Nichols (1986) proposed that the hypothetical new pharmacological class be designated "entactogens." However, it is still controversial whether the entactogens really do constitute a distinct pharmacological entity.

Currently, we are conducting a study which will enable us to directly compare the actions of MDE with the actions of a stimulant amphetamine, a psychedelic and a placebo.

Previous Studies

In order to contribute to the clarification of this question, we performed the first series of placebo-controlled human experiments with MDE in 1990/1991. The study design included assessments of the subjective, neuroendocrine and sleep-EEG effects of MDE in healthy volunteers. We already reported about those studies in a former issue of the MAPS newsletter in 1993. In conclusion, it was impossible to securely position the entactogens within the range of the chemically related stimulants and psychedelics. The entactogenic effects appeared to be only one part of the spectrum of actions of MDE in humans.

Current Study

Currently, we are conducting a second experimental study, which will enable us to directly compare the actions of MDE with the actions of a stimulant amphetamine, a psychedelic and a placebo. It took us about two years to get all approvals needed for this project. We finally started with the experiments in June 1995.

The design of the study is double-blind. Every volunteer participates in two experimental sessions with the same substance, which may be MDE, methamphetamine, psilocybin, or a placebo. We have planned the study (and have obtained permission) for a total of 32 healthy subjects, i.e. eight subjects per substance.

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Assessments made during the experiments include:

- detailed psychopathological assessments
- neuropsychological studies (assessments of aspects of memory and attention)
- electrophysiological studies (startle reflex)
- studies of cerebral metabolism with positron emission tomography (PET)
- studies of the effects of drugs on neuroendocrine secretion
- and studies of pharmacokinetics and drug metabolism.

For the realization of the study we are collaborating with other departments including the Department of Nuclear Medicine in Aachen, the Department of Psychiatry of the University of Heidelberg (M. Spitzer), the Pharmaceutical Department of the University of Tübingen (K.-A. Kovar) and the Department of Psychiatry of UC San Diego (M. Geyer).

We hope that we will be able to complete the experiments by the end of 1996 or Spring 1997 at the latest. •

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maps **mdma** analysis project

Rick **Doblin**

IN FEBRUARY AND MARCH OF 1996, people from around the United States and England sent MDMA for analysis to a licensed testing facility. The purpose of the study was to gather information about the quality of the MDMA being sold on the underground market in the United States and England. Information about the quality of MDMA is necessary in order to estimate the dangers faced by users of illicitly manufactured and distributed MDMA and to place reports of adverse effects in some context.

A total of 33 samples were tested, 22 from the United States, 10 from England and 1 from South Africa. Quantitative and qualitative analyses were conducted on all the samples. The total cost of the study was $3,520. Nicholas Saunders, author of *E for Ecstasy, Ecstasy* and the *Dance Culture* and the forthcoming *Dance,Trance and Transformation,* donated $1,650 to MAPS for the study. An additional $1,100 was donated to MAPS for the study from High Times Magazine. A total of $660 came from MAPS' general fund and the remaining $110 was paid directly by a private individual.

Technological Limitations

The testing was conducted with a gas chromatograph-mass spectrometer (GC/MS). The gas chromatograph separates the different components of the sample. The mass spectrometer identifies the atomic composition of each of the components. This data is then compared by a computer to a database of hundreds of known drugs and other compounds to see if there are any matches. In this way, many of the ingredients in the samples can be identified.

There are some limitations to the GC/MS technology. Certain inorganic and some organic compounds may not volatilize and/or chromatograph and therefore would not be detected. These compounds include baking soda, baby powder and certain sugars that are sometimes used to dilute cocaine and other drugs in powder form such as MDMA. There also may be many compounds that can be detected by the GC/MS technology but are not contained in the computer data base and therefore cannot be identified.

United States Samples

We were fortunate to obtain a rather good geographic distribution of the 22 samples from the United States. Five samples came from New York State, of those 4 came from New York City and 1 from other parts of the state. Three samples came from near Chicago, Illinois. One sample was from Minneapolis, 1 from Eunice, Louisiana (near Baton Rouge), 1 from Charlotte, North Carolina and 1 from Sarasota, Florida. Ten samples came from California, of those 3 were from San Francisco and 7 were from the Santa Barbara/Los Angeles area. Despite the fact that the samples were from around the country, there is no way to determine if they comprise a representative sample of the MDMA being sold in the United States. Therefore, the results from this study can be used only to draw inferences and not conclusions about the content of the pills and capsules being sold as MDMA in the United States. Furthermore, according to Nicholas Saunders, "you cannot be sure that any pill that looks similar to the ones illustrated will have

The claims that MDMA is frequently mixed with crushed glass, rat poison, heroin and other dangerous substances has not been substantiated.

similar contents. When a pill earns a good reputation, it is frequently exploited by dud lookalikes after a few weeks, and the same press may be used for completely different ingredients."

Of the 22 samples from the United States, 17 were tablets and 5 were capsules. Eight out of the 22 samples had no MDMA at all. Interestingly, all the capsules contained MDMA while only about half of the tablets did. Of those samples that did contain MDMA, the highest dose was 119 mg. The lowest was 45 mg. Of the 14 samples that contained MDMA, the average dose was 79 mg. This average is significantly lower than the standard dose sold before the criminalization of MDMA which was in the range of 100-125 mg. Doses lower than 100 mg. are generally considered to be below the level at which many people will feel the full effects of MDMA.

Of the 14 samples that contained MDMA, only 1 also contained another psychoactive compound identified by the GC/MS. That sample was a tablet from New York State that contained MDMA and caffeine. In the remaining 13 samples, MDMA was 100% of only three of those samples, all capsules from San Francisco. The other samples contained a range of percentages of other ingredients that were not measured by the GC/MS technology. For example, the capsule of MDMA from Santa Barbara was only 59% MDMA, the capsule from Sarasota was 85% MDMA and the tablet from New York City was 25% MDMA. While these unidentified ingredients could have been another psychoactive ingredient or a byproduct of manufacturing, they were not cocaine, heroin, barbiturates, benzodiazapines, tranquilizers, hypnotics, ketamine, methamphetamine, amphetamine or any of several hundred other compounds. Some of these unidentified ingredients were fillers or binding agents used in the manufacture of the tablets. Whether these unidentified ingredients are toxic cannot be determined. The common rumor that MDMA is frequently cut with heroin was not substantiated.

Tablets from England

Of the 8 samples that contained no MDMA, 2 contained the psychoactive drug MDE (3,4-methylenedioxyethylamphetamine), a chemical cousin of MDMA that generates an emotional reaction that is not quite as profound as that of MDMA, and 1 contained an unidentified compound. The remaining 5 contained various combinations of ingredients found in over-the-counter preparations including dextromethorphan (an ingredient found in cough suppressants that has a ketamine-like psychoactive effect especially in higher doses), ephedrine/pseudoephedrine (a stimulant found in many plants, over-the-counter medicines and Herbal Ecstacy and other similar pseudo-MDMA products), phenylpropanolamine (a decongestant and mild stimulant found in cold medicines as well as diet aids), and glyceryl guaiacolate (a compound that dries sinuses and is an expectorant).

The ingredients in the samples that did not contain MDMA raise some degree of concern since the interaction of genuine MDMA and ephedrine/pseudoephedrine could provoke a significant elevation in blood pressure. Such interactions could occur if someone were to take two different samples at a time, one containing genuine MDMA and the other containing ephedrine/pseudoephedrine. In one case, a person who had taken 20 mg. of pseudoephedrine in the morning and MDMA later in the day reported having transitory severe anginal chest pain.

England and South Africa Samples

Just like the samples from the United States, the 10 samples from England and the 1 sample from South Africa are not necessarily representative of the MDMA being sold in those countries.

Of the 10 samples from England, five contained MDMA. Three of these 5 samples contained only MDMA, 1 contained a small amount of caffeine in addition to the MDMA and 1 contained some MDE in addition to the MDMA. The average dose of MDMA in these five samples was 128 mg., substantially larger than the average dose of the samples from the United States. The only psychoactive compound detected in 3 samples was MDE. In 2 samples the only psychoactive compound detected was caffeine. Thus, 8 out of 10 samples contained some MDMA or MDE, two drugs with a somewhat similar subjective effect. The 1 sample from South Africa contained only one psychoactive ingredient, MDMA, and a very substantial dose of 138 mg.

Conclusion

All the capsules from the United States contained MDMA while only about half the tablets did so. The samples with MDMA were likely to be weak, averaging only 79 mg., well below the standard dose generally considered to

be in the range of 100-125 mg. The one capsule from England contained caffeine and only half the tablets contained MDMA, averaging 128 mg. per tablet. It seems that the doses of MDMA in the United States are lower than those in England, perhaps a contributing factor in the virtual absence of MDMA-related deaths in the United States.

Four out of 10 samples from England contained MDE while only 2 samples out of 22 in the United States contained MDE. Perhaps there are differential penalties between MDMA and MDE in some countries in Europe, in the United States both MDMA and MDE carry the same penalty.

While there were no toxic additives found in any of the samples, there were unidentified ingredients in virtually all the samples. It is possible that all of these compounds were benign fillers or binders of some sort used in the manufacturing of the tablets or benign "cuts" used to expand the amounts of the powder. However, the safety of MDMA tablets and capsules cannot be determined with certainty. Nevertheless, the claims that MDMA is frequently mixed with crushed glass, rat poison, heroin and other dangerous substances has not been substantiated. •

NOTE: If any MAPS readers are interested in obtaining anonymous, qualitative-only analyses of samples of illicitly manufactured drugs, Drug Detection Laboratories will conduct such analyses for $100. Samples should be sent in a crush-proof manner to DDL, 3117 Fite Circle, Suite 104, Sacramento, CA 95827, (916) 366-3113. Include a note that indicates what you think the drug is supposed to be and assign a six-digit code number to your sample so that you can call DDL about two weeks after your sample would have been received to learn the results anonymously. Please indicate that you read about DDL in MAPS.

Location	Form	Markings	MDMA	How much?	% MDMA	What else?
Chicago	Tab	white	Yes	est. 45 mg	19%	unidentified
Chicago	Tab	white, scored, .7 cm	Yes	67 mg	59%	unidentified
Chicago	Tab	bluish, 1 cm	Yes	73 mg	21%	unidentified
New York	Tab	yellow, .8 cm	Yes	46 mg	16%	caf & unidentified
New York City	Cap	blue & clear	Yes	72 mg	79%	unidentified
New York City	Tab	white, scored, .8 cm	No	0 mg	0%	MDE & unidentified
New York City	Tab	white, scored, .8 cm	No	0 mg	0%	MDE & unidentified
New York City	Tab	Rolex crown, .6 cm	Yes	65 mg	25%	unidentified
Sarasota	Cap	clear	Yes	92mg	85%	unidentified
Eunice, LA	Tab	white, scored, 1 cm	No	0 mg	0%	dex and phenyl
Minneapolis	Tab	white, scored, .9 cm	No	0 mg	0%	phenyl, eph, glyc
Charlotte	Tab	white, no markings, 1 cm	No	0 mg	0%	unidentified
San Francisco	Cap	clear	Yes	est. 72 mg	100%	nothing else
San Francisco	Cap	clear	Yes	112 mg	100%	nothing else
San Francisco	Cap	clear	Yes	119 mg	100%	nothing else
Santa Barbara	Cap	clear	Yes	73 mg	59%	unidentified
Santa Barbara	Tab	green, 1cm	Yes	102 mg	29%	unidentified
Santa Barbara	Tab	white, scored, 1 cm	No	0 mg	0%	phenyl, eph, dex, glyc
Santa Barbara	Tab	yellow, speckled, scored, 1.3 cm	No	0 mg	0%	dex, eph,unidentified
Santa Barbara	Tab	solid yellow, 1.3 cm	No	0 mg	0%	dex, eph,unidentified
Santa Barbara	Tab	white, scored, .7 cm	Yes	92 mg	71%	unidentified
Santa Barbara	Tab	yellow, speckled, 1cm	Yes	72 mg	18%	unidentified
England	Tab	pink, scored, .9 cm	No	0 mg	0%	caf, unidentified
England	Tab	white, Dove, 9. cm	Yes	111 mg	38%	unidentified
England	Tab	white, Dove, 9. cm	Yes	134 mg	41%	unidentified
England	Tab	white, Playboy, scored, .9 cm	Yes	159 mg	56%	MDE, unidentified
England	Tab	white, Playboy, scored, .9 cm	Yes	28 mg	11%	MDE, unidentified
England	Tab	white, Playboy, scored, .9 cm	No	0 mg	0%	MDE, unidentified
England	Tab	white, Playboy, scored, .9 cm	Yes	14 mg	5%	MDE, unidentified
England	Tab	yellow, Chicken, .9 cm	Yes	106 mg	35%	unidentified
England	Tab	white, Apple with a bite	Yes	131 mg	44%	caf, unidentified
England	Cap	clear, "Warm Speed"	No	0 mg	0%	caf
South Africa	Tab	yellow, scored, 1.2 cm	Yes	138 mg	23%	unidentified

What Else? dex=dextromethorphan, caf=caffeine, MDE=3,4-methylenedioxyethylamphetamine, phenyl=phenylpropanolamine, eph= ephedrine/pseudoephedrine, glyc=glyceryl guaiacolate

experiences with **ecstasy** — in search of ecstatic experience

Abstract of a lecture delivered at the 7th Symposium of the European College for the Study of Consciousness in Hamburg, Germany, May 26-28, 1995

Katrin **Krollpfeiffer**, Dipl. Psych.

My RESEARCH STARTED OUT with the question of how the drug MDMA (Ecstasy) could become so popular in two so very different social worlds: the psychotherapy/New Age scene and the Techno/Rave scene. I wondered why some people would be using the same drug for insight-oriented psychotherapy that others were using to dance and party all night. To answer this question, I talked to Ecstasy users that roughly belong to these two categories - New Age/ psychotherapy and Techno/Rave (insight-oriented or party-oriented). I am aware of the problems that arise with categorizing human experience in such ways, and certainly the borders between these categories are not strictly defined. Nevertheless, I believe that it makes sense to differentiate between different scenes or social worlds, since the inhabitants of each world create very different and specific settings for their drug experiences that strongly influence the "trip" itself.

Cultural contexts

First, there is the traditional psychotherapeutic use of MDMA, as we know it from Switzerland and the United States. Second, we find Ecstasy use in the so-called "New Age" scene, which is a little more difficult to define. To me, the main difference between these two scenes is that in a traditional psychotherapeutic setting (psycholytic or psychedelic therapy), the drug is taken under the supervision of an experienced psychotherapist who guides the person through the experience. New Age users, on the other hand, do not necessarily rely on a guide for their MDMA experiences, although some prefer a ritualistic setting with a shamanic type of guide. Generally, New Age users are more into the "free-lance" drug experience on their own or with their friends and partners. Aside from this difference, the motives for using Ecstasy appear to be very similar in these two scenes: insight, self-exploration and expansion of consciousness. Then there is the third big scene for Ecstasy use that I describe in my thesis: the Rave/Techno scene. At Rave parties, Ecstasy is primarily used as a dance drug, to intensify the party experience and especially enhance the ability to "become one with the music," music being the central element of a Rave. Self-exploration or a close look at one's personal problems, as known in psychotherapy, are not particularly important for Ravers when they use Ecstasy — they just want to have fun. Sometimes, though, there appears to be a spiritual dimension to this way of having fun.

Theoretical background

The concept of set and setting as the forming factors of a drug experience was one of my main frames of reference. Also, I was very much inspired by the research of Jerome E. Beck et al. (1989) who published a sociological study about American Ecstasy users in different scenes. Another influential concept in my research was that of drug-related rituals, a concept used by researchers like Norman E. Zinberg (1984), a psychiatrist, or Marlene Dobkin de Rios (1976, 1977), an anthropologist. They assume that in every culture, the use of drugs is combined with specific rituals through which a certain degree of control over the drug experience is achieved. Researchers like Zinberg and Dobkin de Rios believe that these kind of rituals also exist within the drug subcultures of our Western industrialized societies, thus controlling the use of "street drugs" like LSD or marijuana from the inside, as opposed to outside government control.

Research methods

I decided to use a qualitative rather than a quantitative approach because I found it more appropriate for investigating the kind of questions that I had. My aim was to understand the subjective meaning that people belonging to a certain scene ascribe to their Ecstasy use and to the drug experience itself.

I decided to conduct open-ended, qualitative interviews. The humanistic psychologist Inghard Langer (1985) professor at the University of Hamburg, has developed a research method he

calls "personal discourse as a form of psychological research." It has a lot in common with certain forms of qualitative interviews, but the humanistic attitude of the researcher is an essential component. The "personal discourse" can be narrative or focused on a specific theme. This was the main method I used in my research. I developed an interview guideline, a checklist of questions that I wanted to address during the conversation, but I found that most of the questions were addressed by my interview partners without me having to even ask them. Also, in the course of the interviews, a lot of issues surfaced that I couldn't have asked about because I wasn't aware of them before my interview partners brought them up. I was learning new things with every interview, things that would have gotten lost had I worked with preconceived questionnaires.

The length of the interviews varied between one and three hours. I talked to four men and four women, age 26-38. Such a small sample makes it impossible to claim statistically valid representativeness or generalization. Rather, these eight interviews are examples for possible ways of using and experiencing Ecstasy, and therefore can claim a kind of "social representativeness," showing an existing option within its social and cultural context.

Half of the sample group were "insight-oriented" (psychotherapy/New Age scene), the other half more "party-oriented" (Techno/Rave scene) with the exception of one woman who had experiences in both scenes. Two people took part in illegal but therapeutically supervised "Ecstasy workshops." The others were "free-lancers" who made their experiences unsupervised in their circle of friends or with their partner. Four are University students, the others have full-time jobs. It is apparent that my interview partners do not represent a broad range of ages — especially when you look at the rising number of very young Ecstasy users in the rapidly growing Techno/Rave scene. Nowadays, there are 13 year old kids experimenting with Ecstasy (or what is being sold to them as Ecstasy on the black market). I would have liked to include this age group in my research, if I had had the chance to investigate a bigger sample. I believe that age, education and life experience are important factors when looking at drug use, which is probably one of the reasons why the majority of my interview partners displayed a rather mature attitude towards their Ecstasy use and were able to relate to their experiences in a rather sophisticated way.

Findings

How do the experiences of Ecstasy users belonging to the Rave/Techno scene differ from the experiences of more insight-oriented users? It seems that even though most of my interview partners have tried Ecstasy in different settings (i.e. with a partner, in small groups of friends or in a ritualistic group setting), the intention for using it appears to be stable for each person (with one exception). Thus, the Ravers could not picture taking Ecstasy at home for a quiet "journey inside," and the New Agers could not picture taking it and going out to a dance party or disco. Only one woman describes a significant shift in her "social worlds" of Ecstasy use: she started out in a quiet, insight-oriented setting, and years later was exposed to the Rave scene, which is now the sole setting for her Ecstasy experiences.

How my interview partners typically experience the effects of Ecstasy appears to be closely related to their expectations, attitudes and the social context in which their Ecstasy use occurs. Whereas the Ravers emphasize the sensual qualities of the experience, the intensified ability to enjoy music and movement, and trance-like feelings of bliss, the New Agers value psychological effects like increased self-acceptance and self-awareness, a general feeling of empathy and love, also referred to as an "opening of the heart," easy communication or the ability to deal with one's own problems in a more constructive way. Some of these effects are also mentioned by the Ravers, but they do not seem to be the focus of their experiences. Interestingly enough, what is considered an unpleasant side-effect by some users can be valued as desirable by others: for example, Ravers often like the "speed component" of Ecstasy because it provides them with additional energy to dance and stay awake all night. New Agers, on the other hand, tend to look at this phenomenon as an annoying side-effect that can be overcome in different ways.

While analyzing the data gathered from the interviews, I developed four categories to describe the subjective meaning that my interview partners attributed to their Ecstasy experiences. These categories were partly inspired by the work of Andrea Blaetter (1989), an anthropologist from Hamburg, who has proposed seven general functions of drug use that can be found in every culture. The four categories I developed could be considered different aspects of the Ecstasy experience which appear in the stories of my interview partners. Each person emphasizes a certain aspect more than others. They describe

How my interview partners typically experience the effects of Ecstasy appears to be closely related to their expectations, attitudes and the social context in which use occurs...

I propose that addictive behavior is in part related to the lack of methods and models for ecstatic experience in our society, including the lack of models and rituals for constructive, ecstatic drug use.

the Ecstasy experience under the following aspects: 1) the aspect of insight/expansion of consciousness, 2) the aspect of hedonism/pleasure, 3) the aspect of addiction/compensation and 4) the aspect of peak experience/"frontier experience."

"Frontier experience" is a translation of the German expression "Grenzerfahrung" which goes back to the existentialist philosopher Karl Jaspers. I prefer this term over the term "peak experience" inasmuch as it describes an extreme experience, along the frontiers of consciousness, that can be both blissful and ecstatic but also frightening and dangerous. "Peak experience," as used by the humanistic psychologist Abraham Maslow, usually refers to an absolutely positive experience and has no negative connotations.

In my opinion, this aspect of the Ecstasy experience illustrates the desire for extreme experiences, a longing for experiences outside of the realm of ordinary life. This longing seems to be one of the underlying reasons for Ecstasy use (or drug use in general, for that matter). I call it the desire for ecstatic experience. This does not mean that taking Ecstasy automatically generates an ecstatic experience. Nevertheless, I believe that most Ecstasy trips contain at least some elements of it.

Rave parties are an example of how people in our culture try to ritualize ecstatic experience, although I readily admit the problems that come with the whole Rave phenomenon and the use of drugs like Ecstasy in this scene. To integrate an ecstatic experience in your life takes a conscious effort, otherwise it is going to be without lasting effects at best. At worst, it supports addictive behavior, because a person's everyday life might appear grey and unattractive in comparison to such an extraordinary experience. One of my interview partners describes his feelings after his first Ecstasy trip as follows:

"Oh, how sad is this world, and how grey, and how pale... we had no idea how to make sense of all of this (the Ecstasy experience)... it didn't compare to anything we ever experienced..."

Considering this, it is understandable that in some cases the desire for ecstatic experience turns into addiction. An article in a German newspaper summarizes the Rave culture with great poignancy as "a cult of ecstatic celebration that tries to force the extraordinary to become permanent — the party with no beginning and no end..." (*Frankfurter Allgemeine Zeitung*, 7-7-1994).

Summary of conclusions

My research findings verify in an exemplary (not a statistical) fashion the importance of set and setting as (aside from the drug itself) determining factors for a drug experience. The importance of the social/cultural context is verified as well. I differentiate roughly between more insight-oriented and more hedonistically-oriented types of Ecstasy use. These types are not mutually exclusive: sometimes, insight can be fun. All of my interview partners view their Ecstasy experiences under at least two of the four aspects I described in this article (the aspect of insight, the aspect of hedonism, the aspect of addiction, the aspect of peak experience). Some forms of Ecstasy use described by my interview partners appear to be attempts of ritualization (Zinberg 1984 and Dobkin de Rios 1976, 1977) — for example, the use in psychotherapy, shamanic "New Age" rituals, and, to a degree, at Rave parties. Not all of my interview partners succeed in gaining control over their drug experiences and their patterns of use through these rituals. I propose that assisting MDMA users in creating constructive, regulative rituals for their experiences would be more helpful than a restrictive drug policy geared towards criminalization of users and the overall goal of complete abstinence. A restrictive drug policy, like the one we currently have, only feeds into the black market and therefore promotes the uncontrolled distribution of potentially harmful substances that are produced without quality control and are consumed by people who have little guidelines for safe and constructive use. There are some steps in the right direction: in the Netherlands, they allow mobile testing labs at Rave parties where people can check their pills for contents. In Northern Germany, there are safer use guidelines available for Ecstasy consumers at some local drug counseling centers and at Rave parties. I propose that, aside from other reasons that my interview partners give for their Ecstasy use and that I regard as valid, an important reason for using drugs like Ecstasy is the underlying desire (or longing) for ecstatic experience that is partly fulfilled by the ecstatic moments of an Ecstasy experience. I propose that this desire is deeply rooted in the human psyche. This is illustrated by the various methods developed by cultures of all times and places to achieve such states of consciousness. I propose that addictive behavior is in part related to the lack of methods and models for ecstatic experience in our society, including the lack of models and rituals for constructive, ecstatic drug use. I

propose that the more fulfillment people find in their "normal" life, the easier it will be for them to incorporate the use of a drug like MDMA in their life without developing an addiction. Beware: frontier experiences of any kind always imply a certain risk. Crossing the frontier can be dangerous. But in a truly free society, people should have the freedom to take risks, too. Or, as one of my interview partners puts it: "Life isn't all safe — with or without drugs."

More research needed

A main goal of my thesis was to encourage more research like this: qualitative drug research that explores what the users themselves have to say. If we as scientists are not willing to listen to the experiences, thoughts, feelings, hopes and fears of the people who use drugs, even if we don't appreciate the way they use them, we disregard reality. Clinical and pharmacological drug research is very important. But so are ethnographical research, sociological research, psychological research, qualitative field research, "personal discourse" with the people who for whatever reasons have decided that drugs should be a part of their lives. Only with such dialogue can living social science exist. We have to leave our ivory tower and get out on the street. There is a lot we can learn from the "drug experts of everyday life." And if we are willing to learn from them, they might be willing to learn from us, too — from the "drug experts of the science labs." They might be willing to learn from us if they feel that we take them seriously and listen, instead of constantly reprimanding them. They might be interested in learning self control if we stop attempting to control them. Only if this dialogue, this exchange of ideas and experiences grows and flourishes, do we have the chance to facilitate more constructive, less damaging use of drugs like MDMA — and maybe even come a little further in our search for ecstatic experience.

Future Research plans

Since I just moved from Germany to California, I am very interested in working on a comparative study of the development of Ecstasy use in the United States and in Germany. Ecstasy use is booming throughout Europe now, because of the widespread Rave scene. Researchers in Germany are just beginning to investigate this subject — in fact, my own study was the first of its kind in my country. Currently, the German Council on Addiction, located in Hamburg, is conducting a nationwide survey on Ecstasy users. Contact persons are Dr. Udo Fluesmeier, Gerd Rakete and Dr. Manfred Rabes in Hamburg. I met with these researchers during my recent visit to Germany and they expressed interest in a comparative study between Germany and the U.S. — similar to a European study that is under way now, comparing Ecstasy use in Germany, England and the Netherlands. The European study focuses on investigating and comparing the effects of various "safer use" campaigns specifically designed for Ravers. This could be interesting for the United States, too, where the "just say no" paradigm still seems to be the prevalent approach in drug education — with questionable efficacy. For Germans, on the other hand, it would be helpful to learn more about the way Ecstasy use in the U.S. has developed over the last two decades, since the drug has been available and known in the U.S. for much longer than in Germany. Thanks to the "Exploring Ecstasy" study by Beck et al. we already have a broad range of information about the development of American Ecstasy use through the 1980's. It would be great for future research to pick up where this study had to end and especially investigate Ecstasy use in the US Rave scene. There are a lot of interesting and important questions to ask. International exchange of experience and ideas is particularly valuable here. I would be more than happy to contribute to this exchange. •

A main goal of my thesis was to encourage more research like this: qualitative drug research that explores what the users themselves have to say.

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phase 1 clinical trial of **ibogaine** in human patient volunteers

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THE UNIVERSITY OF MIAMI Ibogaine Research Team is conducting Phase I clinical studies with Ibogaine. Ibogaine is a psychoactive indole alkaloid from the rain forest shrub Tabernanthe iboga. Ibogaine is one of a dozen or more alkaloids found in the iboga shrub that grows in West Africa. Ibogaine has gained attention as an alternative lead compound for the development of anti-addiction medications. The use of ibogaine for the treatment of drug dependence has been based on anecdotal reports from the International Coalition for Addict Self-Help (ICASH) and DASH (Dutch Addict Self-Help Group) that it may decrease the signs of opiate withdrawal and reduce drug craving for cocaine and heroin. Preclinical studies in animals have given additional support to the claim that ibogaine is an addiction interrupter. While much of the information has been promising, the pace of human clinical trials and research with ibogaine has been considerably slow tracked by the lack of any significant financial support. This failure is surprising given the initial enthusiasm for Ibogaine as a medication to treat cocaine and heroin addiction.

The MAPS funding allowed us to obtain important preliminary data to support our grant application that is now pending review.

The question of whether or not ibogaine is indicated as a pharmacotherapy for promoting cocaine abstinence or interrupting heroin or other substance abuse disorders will require controlled clinical trials in humans. The decision to begin human use of a drug is often difficult. The reasonableness of the risk that subjects are asked to assume is often controversial, as may be the appropriateness of the safety monitoring. Beginning in the 1960s and continuing to the present, interest in the use of ibogaine as a treatment for drug dependence has grown. With this interest, self-help networks of addicts have used the drug in Europe and Central America. The Drug Advisory Committee of the FDA has reviewed all of the available preclinical and clinical data and approved the continuation of a Phase 1 Pharmacokinetic and Safety Trial (IND 39,680) in cocaine dependent patient volunteers.

Drug dependence is defined as a cluster of cognitive, behavioral, and physiologic symptoms that indicate a person has impaired control of psychoactive substance use and continues use of the substance (cocaine, heroin, alcohol) despite adverse consequences. From the reports of humans with cocaine and heroin addictions who have taken ibogaine, it seems that several features of the ibogaine experience may be important for interrupting intractable patterns of drug-seeking behavior. We have submitted a grant proposal to the National Institute on Drug Abuse requesting funds to conduct a controlled Phase 1 clinical trial of ibogaine in cocaine-dependent patient volunteers. This grant proposal is designed to assess safety, pharmacokinetics and dosage effects. We also plan to conduct longitudinal follow-up and standardized data collection in order to identify relevant parameters of efficacy to guide the design of future Phase 2 trials. The grant application includes a group of expert investigators from the University of Miami School of Medicine and the University of California at San Francisco. These investigators are joined by substance abuse treatment and pharmaceutical consultants from industry, academia and the private sector. We have also obtained the support of a local Substance Abuse Treatment Community provider to work with us on this project. These arrangements will ensure successful completion and adequate follow-up on patient volunteers that have agreed to participate in the study.

The Miami group is very grateful to MAPS for providing continued support for the Ibogaine Research Project when other sources of private or public funds were not available. The $25,000 in research funds provided by MAPS have directly supported the clinical studies of ibogaine's safety and metabolism in human patient volunteers as part of the Phase I protocol. The MAPS funding allowed us to obtain important preliminary data to support our grant application that is now pending review. The review of the grant entitled "Ibogaine; Human Phase 1 Clinical Trial" will not be completed until the end of the summer. The earliest possible funding date for this project is September/October 1996. Until then, the Ibogaine Research Project will stay *on hold* pending the results of the NIH review process. No other funds are available to continue this important work in the absence of public support from the NIH.

Private contribution to the Ibogaine Research Project may be made payable to the Addiction Research Fund (att: Dr. D. Mash) at the Univ. Miami School of Medicine, 1501 NW 9 Ave., Miami, FL 33101, or to MAPS. •

continued studies into underlying psychological mechanisms of **ketamine psychedelic therapy** (KPT)

Evgeny **Krupitsky**, M.D., Ph.D., and A.M. **Burakov**, M.D.

SINCE 1985, we have been conducting special studies of the underlying biochemical, neurophysiological and psychological mechanisms of KPT with alcoholics in order to explain its high rate of clinical efficacy for the treatment of alcohol dependency (Krupitsky, 1992, 1995; Krupitsky et al., 1990, 1992). The psychological studies shed the most light on the underlying mechanisms of KPT. The changes in the Minnesota Multiphasic Personality Inventory (MMPI) after KPT session testified to positive personality changes. Changes in the Color Test of Attitudes after KPT testified to a positive transformation of the unconscious emotional attitudes of our alcoholic patients towards themselves and their significant others. Changes in our Spirituality Scale testified to a significant increase in the level of spiritual development after the ketamine session. All these psychological changes favored sober life. As a rule, we also observed positive transformations in our patients' systems of life values, purpose and meaning, but these changes had not been previously measured quantitatively with psychological tests. Clinical impressions and indirect evidence from the Spirituality Scale suggested these changes, but not a rigorous scientific proof. Therefore, the study described below focused on measuring changes in life values, purpose and meaning caused by KPT in alcoholic patients. In this study, we also measured the changes in the locus of control of the personality of our patients, a factor which is closely associated with issues of life values actualization.

Subjects and Methods

Thirty alcoholic in-patients (age 40,±1,8) were treated with KPT at the end of their 1.5 month treatment at the Leningrad Regional Center for Alcoholism and Drug Addiction Therapy. KPT was carried out as described in our previous publications (Krupitsky 1992, 1995). All 30 patients were assessed before the ketamine session and in the days after it with: the Questionnaire of Terminal Life Values (QTLV) developed in Russia by Senin (1991) and based on Rokeach's approach to human values and beliefs (Rokeach, 1972, 1973); the Locus of Control Scale (LCS) developed by J. Rotter (Phares, 1976) and adapted in Russia by Bazhin et al. (1993); and the Personal Orientation Inventory (POI) developed by Shostrom (1968) to measure self-actualization and adapted in Russia by Rukavishnikov (1993). Additionally, ten out of 30 alcoholic patients treated with KPT were assessed with repertory grids (Kelly matrixes, Fransella and Bannister, 1977). The repertory grid technique allowed as to assess subtle changes in patients' self-concept as affected by KPT. The grids were arranged so that their 11 elements were replaced by various aspects of the patient's "ego" and other significant persons such as "Me in the present," "Me in the past," "Me in the future," "Ideal image of self," "Wife," "Mother," "Father," "Alcoholic in recovery," "Drunkard," "Psychotherapist," and "A man who is well-adjusted." As for the constructs,

This study has demonstrated a number of significant positive changes in patients' values as a result of KPT.

12 pairs of categories (construct poles) were preset to describe characteristics of the patient's personality and value orientations such as "Responsible/Irresponsible," "Exhibiting self control/Impulsive," "Strong-willed/Weak," "Active/Passive," Self-confident/Lacking in self-confidence," etc. We employed two techniques for filling the repertory grids. With the first (conventional) one, a patient placed each of the elements at a certain point of the calibrated scale preset by the construct poles. The second one was specially developed to measure changes in nonverbal (and in this sense, less reflexive) psychosemantics. This involved the following procedures: first, a patient arranged eight colors of the Luscher test in the order of their correspondence to each of the grid elements (from the most similar, suitable color to the most different, unsuitable one). Then, the patient arranged the same colors in the order of correspondence to the poles of each of the constructs. Comparing the colors' positions in the two arrangements, we quantitatively estimated the closeness of this element to the poles of the given construct. The color technique allowed us to obtain nonverbal, unconscious estimates of the elements in terms of the categories of given constructs. All ten alcoholic patients were tested with verbal and color repertory grids before KPT and after it. Then we calculated mean verbal repertory grid (MVRG) and mean color (nonverbal) repertory grid (MCRG) for all ten patients together. The final four MVRG and MCRG (2 before KPT and 2 after KPT) were processed by the standard programs of repertory grid computer-assisted analysis (Fransella and Bannister, 1977), and then semantic spaces of the personality were established. Semantic space of the personality, based on the basis of multidimensional assessments of elements with constructs, shows semantic interrelationships and interconnections between elements and/or constructs of the repertory grid.

Results & Discussion: Life Values

This study has demonstrated a number of significant positive changes in patients' values as a result of KPT. KPT enhanced the importance of such life values as creativity, self-improvement, spiritual contentment, social recognition, achievement of life purposes and individual independence. These changes were mostly expressed in such areas of life values actualization as family, education and social life. It is evident that such a positive transformation in a patient's life values system enhances motivation for a sober life and favors sobriety.

Locus of Control

It was established in our study that locus of control in the personality of alcoholic patients became significantly more internal after KPT (from 11,1±4,8 to 30,3±5,3; P<0,01). This means that patients became more confident in their ability to control and manage different life situations and they became more responsible for their lives and futures after KPT.

Personal Orientation Inventory

There were no statistically reliable changes in any scale of POI. A possible reason for this is that Shostrom's paradigm of self-actualization was unusual to our alcoholic patients and therefore they had trouble adequately understanding the statements of Shostrom's inventory.

Repertory grids (Kelly matrixes)

The results of this study have demonstrated some positive changes in the semantic space of the personality of alcoholic patients, particularly in the space of personality characteristics of the color repertory grids. Before KPT, the image "Me in the present" was close to the image "Drunkard" and far from the group of such positive images as "Alcoholic in recovery," "Ideal image of self," "Wife," "A man who is well-adjusted" and others in the semantic space of the MCRG. After KPT, the image "Me in the present" moved closer to the group of positive images described above and further from the image "Drunkard" in the space of MCRG. At the same time, the image "Drunkard" moved towards the image "Me in the past." These data testify that alcoholic patients emotionally perceived or identified themselves as drunkards before KPT. After KPT their emotional perception of themselves had changed; they emotionally identified themselves with the alcoholic in recovery and other positive images in the semantic space of personality characteristics and value orientations, and identified themselves as drunkards only in the past. The changes in the verbal repertory grids were not so significant as in the color repertory grids. Only the image "Drunkard" moved further from the group of positive images and more closely to the image "Me in the past." It is possible to conclude from these data that KPT improved the unconscious self-concept of the alcoholic patients. Thus, the results of this study and our previous studies of underlying psychological mechanisms of KPT show that the patients grew more self-confident, more sure in their abilities and their futures, less anxious and neurotic, more balanced, emotionally open and self-sufficient, and more responsible for their lives and futures. We observed a transformation of patients' emotional attitudes,

a decrease in the level of anxiety and internal tension, discomfort, and emotional isolation, along with an improvement of self-assessment and the appearance of a tendency to overcome the passive aspects of their personalities. We observed a certain positive transformation of the patients' system of life values and meaning and even some world view (spirituality) changes. All these changes favor sober life.

Purpose in Life

Ten alcoholic patients (age 41,1±2,4) were studied before and after KPT with the Purpose in Life Test (PLT) elaborated by Crumbaugh (1968) and based on Frankl's concept of man's aspiration for the meaning of life. The PLT was adapted in Russia by Leontiev (1992) in the Department of Psychology of the Moscow State University.

This study has shown that KPT significantly increased the index of grasping the meaning of life in alcoholic patients (from 89,7±5,7 to 115,3±3,2; $p < 0,01$). Before KPT the index of grasping the meaning of life was below the average normal level, but after KPT it was higher than that level. These changes indicate that after KPT patients were better able to grasp the meaning of their lives, their life purposes and perspectives. Life became more interesting, emotionally saturated and filled with meaning for them after KPT. They felt better able to live in accordance with their concept of the meaning of life and life purposes. Such changes favor sober life particularly from the standpoint of Frankl's approach, which considers alcoholism as an "existential neurosis", as a consequence of the loss of the meaning of life and the appearance of a specific "existential void" (Frankl, 1978) which we believe KPT is able to fill at least to some extent.

Work in the United States

In March 1995 I visited Dr. John Krystal at the Department of Psychiatry of Yale University during my almost ten week MAPS-supported visit of different universities and psychedelic research centers of the United States. I discussed our studies of ketamine alcoholism therapy with Dr. Krystal and his team. Dr. Krystal told me about his investigations of human psychopharmacology of ketamine in healthy volunteers. At that time we also discussed some interesting ideas of ketamine human psychopharmacology studies in alcoholics. We decided to apply for funding for those studies through the National Institute of Alcohol Abuse and Alcoholism (NIAAA), where I had been lecturing right before my visit to Dr. Krystal's laboratory. Now, one year after my visit, the funds for the ketamine psychopharmacology studies in alcoholics have been granted by the NIAAA. I am starting the one-year study of ketamine psychopharmacology in alcoholics at Yale at the end of April 1996. To this end, I am leaving my laboratory in St. Petersburg for about one year to carry out ketamine studies at Yale with Dr. John Krystal.•

Acknowledgments

We are very much thankful and grateful to MAPS and Rick Doblin, MAPS President, for the support of this research which made this study possible.

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I am starting the one-year study of ketamine psychopharmacology in alcoholics at Yale at the end of April 1996.

ketamine research in the united states

Psychopharmacology study at Yale

As part of his one-year study of ketamine psychopharmacology in alcoholics at Yale, Dr. Evgeny Krupitsky will work on the overlap of ketamine and ethanol. Both agents block, with varying potency, the actions of glutamate at the N-methyl-D-aspartate receptor. Dr. Krupitsky has had a particular interest in the utility of the calcium channel blocking agent, nimodipine, in treating alcoholism. He will explore this by examining the relationship between nimodipine and ketamine.

The overlap between ketamine and ethanol at the NMDA receptor is important for several reasons: 1) it now appears that some of the behavioral effects of ethanol arise through blockade of NMDA receptors—new knowledge about an old drug. If ethanol doses get high enough, you get ketamine-like effects. 2) this means that some problems associated with ethanol may arise from its actions at this site. Areas to explore include cognitive impairment, withdrawal, and neurotoxicity. As a result, agents enhancing NMDA receptor function become potential targets for the treatment of alcoholism.

Nimodipine is primarily employed as an antihypertensive medication. It blocks a type of channel that allows calcium to enter neurons. The NMDA receptor is a different type of channel, but it also controls the entry of calcium into neurons. We have been studying the capacity of nimodpine, which has very low abuse potential, to enable alcohol dependent individuals to dry out from alcohol dependence. The objective is to see whether we can develop treatments that avoid giving people benzodiazepines or related drugs. The reason for this objective is that benzodiazepines have some alcohol-like subjective effects and we have been concerned that it may promote relapse in some people. •

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Protocol review in Tampa, FL

I have completed the first round of approval of the Ketamine-Assisted Therapy of Alcoholism Research Protocol to take place in Tampa, Florida. This study is an attempt to replicate the previous research of Dr. Evgeny Krupitsky. The protocol has been changed seven (!) times, including the very important change from non-blind study to double-blind study. After several preliminary meetings, the Research and Development Committee of the Tampa Veterans Administration Hospital approved the protocol on May 3, 1996.

At the present time, the application has been submitted to the Institutional Review Board (IRB) of the University of South Florida College of Medecine for consideration on June 6th. I have secured letters of support from all involved services (Anesthesiology, Psychiatry, Pharmacy and Psychology). In addition, the protocol was reviewed by the Chief of Medical Administration for compliance with the requirements of the Hospital Privacy Act and was approved as well.

I also presented the Ketamine Protocol to the staff of the Alcohol and Drug Abuse Treatment Program where the study will take place. The vast majority of staff supported the study enthusiatically, except for two people who became alarmed at the idea of treating drug addiction with a "dangerous drug." Both dissenting counselors are recovered addicts themselves, who recovered strictly through Alcoholics Anonymous and Narcotics Anonymous 12-step recovery fellowships and have different views about pharmacological treatment of addiction. I will continue to work with the staff of ADATP to dispel any misconception about ketamine-assisted therapy to treat alcoholism. I will continue keeping you informed of future developments of ketamine research in Florida. Thank you for your interest and support. •

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lsd research at the orenda institute

Richard **Yensen**, Ph.D.

ON MARCH 30, 1996 the Orenda Institute's Institutional Review Board (or IRB — the committee that oversees subjects' rights and ethics in research with human beings at the Orenda Institute) met and unanimously approved the study protocol, THE RELATIONSHIP BETWEEN PEAK EXPERIENCE AND OUTCOME IN LSD-ASSISTED PSYCHOTHERAPY WITH SUBSTANCE ABUSERS, A DOUBLE-BLIND CONTROLLED STUDY. The informed consent form was reviewed and amended and this amended form was given unanimous provisional approval pending the execution of changes requested. When the amended permission form is distributed to the IRB members and accepted as correctly amended, the last step in the arduous administrative approval process will be complete.

When we obtain access to the LSD we will begin accepting applicants for the study.

Approvals in place

This protocol was conceived eight years ago! Throughout this time we have been in negotiations with the IRS, the FDA, and the DEA as well as the state level regulatory agencies, in order to secure the necessary approvals for this work. Today, we stand at the threshold of finally beginning to work therapeutically with LSD again, returning to the clinical phase of research with human subjects (as opposed to animal studies or purely physiological human studies).

Study design

This outpatient study examines the relationship between the dose of LSD given during a therapy session, the quality of the psychedelic session content (the presence or absence of a peak or mystical experience), and outcome in the LSD-assisted psychotherapy of 60 people who have been diagnosed with a substance abuse disorder (as defined in the APA Diagnostic and Statistical Manual). Each person will be randomly assigned to one of three groups: Group 1 will receive 100 micrograms of LSD, Group 2, 200 micrograms, and Group 3, 400 micrograms. Neither the subject nor the therapist will know who has received which dose (double-blind). Each person may have up to five LSD sessions during which they will receive the same dose of LSD, in the context of a therapy relationship (up to 120 hours of therapy). Each session will be evaluated by the research team for the presence or absence of peak experience qualities. Subjects will be given different psychological measures before and after and outcome measurements (behavioral and functional ratings as well as random urine testing) will be done at specific time intervals up to a year after the last therapy session. The hypothesis is that those people who have peak or mystical experiences that they are able to integrate into their lives will be motivated to decrease their abuse of substances and lead more satisfactory lives.

Outside source of LSD

In the past, LSD was available to us and other qualified researchers from the National Institute of Mental Health and the National Institute on Drug Abuse. However, at this time, we were unable to obtain supplies from the U.S. government. We have located another qualified source of LSD for human studies and soon will be ordering supplies for the study. The double blind packaging and labeling of the compound will be executed by an outside facility.

Inclusion criteria

When we obtain access to the LSD we will begin accepting applicants for the study. Subjects must be between 21 and 60 years of age, be a high school graduate (or equivalent), have a substance abuse disorder as diagnosed by the screening committee and have a local support network that includes a significant other. The significant other is a very important part of the treatment team. They will pick up the patient after LSD sessions and accompany them throughout the evening safeguarding their well being. The significant other must also be willing to participate by rating the patient's response to treatment at several points during the study and follow-up. Because of this requirement, initially we will only be accepting subjects from this geographic area.

There are many exciting new dimensions that we plan to add to research with psychedelics in the near future and we will continue to keep you informed. •

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TAKIWASI

ayahuasca and shamanism in addiction therapy: report from the peruvian amazon

Michel **Mabit**

ATTEMPTING TO CURE DRUG ADDICTION by the ritual use of ayahuasca, a plant beverage with psychotropic effects, might appear to be crazy or at least very daring. When Takiwasi (Center for the Rehabilitation of Drug Addicts and for Research of Traditional Medicines) was born in September 1992 in Tarapoto, Peru, the idea of the founders was to investigate and use in a systematic way the Amazonian healers' shamanistic knowledge to cure drug addicts. This applied research has now been underway for three and a half years seeking an efficient, low cost and culturally adapted alternative therapy. The initial results are encouraging.

Drug addiction has become a serious and important public health problem here since Peru became one of the biggest world producers of coca basic paste. The traffickers are falling into their own trap, consuming the product destined for exportation. Also, in times of overproduction, they have begun to sell the drug inside Peru. This problem is not well-known in the rich countries... No solution has been available to the coca basic paste addicts, who are becoming more numerous day by day especially in the Alto-Huallaga, a region of high production.

Fortunately, wherever there is a problem there exists a solution, at least in the experience of the two main people responsible for the creation of Takiwasi: Dr. Jacques Mabit, a French doctor in Peru conducting research into traditional "curanderos"[1] and José Campos, a young Peruvian descendent of an Andean family of curanderos. During six years travelling together through the Upper-Huallaga river valley they met more than 70 curanderos. These "maestros"[2] told them that the only way to understand their work was through ingesting the plants themselves. Thus the scientific work became a learning journey, bringing them into ever closer contact with traditional knowledge of medicinal plants and especially the greatly-respected ayahuasca, in continuous use for thousands of years throughout the Amazon basin. They observed its use by the "ayahuasqueros"[3] in the treatment and cure of all kinds of physical and psychological illnesses and came to understand that seeking "altered states of consciousness" through the use of psychoactive substances is not synonymous with drug addiction. In spite of the powerful effects produced by ayahuasca, they never once met an "ayahuasca addict." On the contrary, as a curandero progresses in his practice, he needs to drink less and less of the brew. They were also surprised to find that these curanderos treat drug addicts with ayahuasca.

Takiwasi was created as an experimental center to treat drug addicts using traditional Amazonian medicines. Takiwasi means "the singing house" in the Quechua language, so-called because the therapeutic song or "ikaro" is the favorite healing weapon used by the Amazonian shamans and also in Takiwasi. The idea was to apply the healers' art in a more systematic way.

By modifying his state of consciousness with drugs, the drug addict looks for a meaning in his life and often for an unconscious access to "God." This method has always been used through the ages by every culture. The majority of today's drugs are made with plants (wine, alcohol, heroin, cocaine, marijuana) which are considered as "sacred" in many cultures and for that reason are taken ritually. All the Amazonian healers or shamans explain that psychoactive plants are not only a mixture of chemical substances but are living entities with a "spirit" which can help and

By modifying his state of consciousness with drugs, the drug addict looks for a meaning in his life and often for an unconscious access to "God."

Therapy team of Takiwasi.
from left to right:
Dionisio Santos,
Michel Mabit,
José Campos,
Javier Zavala,
Jaime Torres,
Jacques Mabit

cure if they are respected but kill if they are abused. Rediscovering the ritual is essential. The aim of Takiwasi is to help the patient to get over his addiction teaching him that he can modify his state of consciousness without damaging himself and gain a more spiritual outlook on his life, giving him strength and faith. He will experience and understand this vision of life himself from inside during the Ayahuasca sessions and the diet.

The team

Jacques Mabit and José Campos were joined by other adventurers all passionate about shamanism: Rosa Giove, Peruvian doctor; Dionisio Santos, administrator and Rony Rengifo, Peruvian therapist. Today, the team also includes two Peruvian psychologists Jaime Torres and Javier Zavala and Michel Mabit, French journalist in charge of communication. All participate in the therapy. They have followed exactly the same treatment as the patients in order to practice it. They undergo this "initiation" together with the patients. During the ayahuasca sessions, both therapists and patients consume the beverage. Thus the therapist forms a very close bond with his patients. In addition, there is a working network of healers who are native to the region with whom it is always possible to consult.

Costs and funding

The French government has supported the Takiwasi project since 1990, before its official creation and has so far provided US$ 320,000 mainly through the General Delegation For the fight against Drugs and Drug Addiction, a subsidiary of the French Ministry of Foreign Affairs and also through the French Technical Cooperation. The European Community supported the project for two years (1993-1995) with the sum of US$ 340,000. From December 1995 to December 1997 the post of Director of Communications is being financed by the United Nations Volunteers program. We are also expecting a volunteer from the organization CUSO-Canada in July 1996. We have received private donations from various people, mainly through the Association of Support for Takiwasi created in France in 1993. Total from that fund up until now: US$ 10,000.

The principal reason that the French government and the European community support Takiwasi is their support of the search for an alternative therapy in the treatment of drug addiction. The project was presented as a therapeutic alternative utilizing medicinal plants and local recourses in general without focusing solely on ayahuasca or other psychotropic plants. However, both financiers are informed of the use of these plants and the term psychotropic plants does figure in the contract with European Community.

Out of the above-mentioned donations, US$ 200,000 were used to buy the land and install all the infrastructure of the center (buildings, materials, vehicles). The rest was used for the running costs of the center (salaries, food, maintenance). Takiwasi currently runs on US$ 100,000 per year with salaries ranging from 250 to 1,000 dollars per month for the therapeutic team. Ideally, the sum required to cover the running costs would be US$ 150,000 to provide treatment (with all the related costs), appropriate salaries and training for the team. In order to realize improved and effective investigation and information, a further US$ 100,000 per year is required.

Soplada: the curandero José Campos blowing tobacco on a patient's head

Takiwasi is registered with the Ministry of the Presidency of Peru as a recipient of International Cooperation. It is a Peruvian NGO — Non Governmental Organization — and its legal title is "non profit organization." Private donations may be received. Donations can be made by check in dollars or by giros to our dollars savings account at the Banco de Credito, Tarapoto, Peru account no. 550/9285296-20. An official receipt is sent to donors to enable them to offset their donation against tax. The estimated real cost of each patient's treatment is US$ 800 per month. Being experimental, the center has a maximum capacity of 15 or 20 patients at one time. In reality, we have an average of 10 patients. The price is adapted to the economic means of the patients and their families. Patients without economic resources are also accepted.

Activities carried out

It should be noted that Takiwasi is not only a center for the treatment of drug addicts. Apart from therapy with drug addicts, Takiwasi also receives outpatients with psychological problems and outside researchers for short periods of study. The Center's work also involves training, education and investigation. The investigative work has not been properly developed so far. The studies we want to develop in the coming years are neurophysiology, psychoanthropology, botany and phytochemistry. This work could be carried out by external investigators or laboratories in collaboration with Takiwasi both in terms of cost (with Takiwasi providing the infrastructure and logistical base for data collection) and of the results and even possible benefits derived. A research program is underway into traditional medicine (medicinal plant resources, psychocultural and energetic aspects of shamanism and traditional healing). An important part of the work is dedicated to diffusion of information through courses, conferences, TV and radio programs and organization of a Latin American network of Centers that fight drug addiction without coercion and using local resources. The Center publishes the biannual magazine *Takiwasi* in Spanish to reflect upon exchanges, views on the usage (therapy) and abuse (drug addiction) of psychotropic substances and upon modified states of consciousness in general. Four issues have been published to date. An English issue is being prepared.

Three times each year, the center also organizes three-week Seminars For Personal Evolution which are open to people who want to experience shamanistic techniques. Participants in the seminar do not have to speak Spanish although it does certainly help them to adapt and communicate with the other participants. We can accomodate seminar participants in English, French and Portuguese. So far we have received French, Brazilians and an Australian, none of whom spoke Spanish and all of whom enjoyed the experience. The next seminar will take place September 3-24, 1996. For further information, please contact:
Takiwasi, 466, Prolongación Alerta, Tarapoto, Peru.
Telephone and fax: 00.51.94.52.54.79.

Footnotes

1. "curandero" is someone who cures using medicinal plants and many other healing techniques. In this context, it refers to a specialist in medicinal plants and especially ayahuasca.

2. "maestro" or Master is a title of respect usually used to address the older or wiser curanderos.

3. "ayahuasquero" is a curandero for whom ayahuasca constitutes the basis of his treatment.

the **takiwasi** patient's journey

First contact: improving his motivation

The patient's journey begins when he presents himself at the center for an explanation of the rules. As a preliminary test of his motivation, he must come to Takiwasi freely and unaccompanied by family members, every day for eight days. He will then talk to a therapist and take his first purges (milk of magnesia with coconut milk). Raw vegetable oil is taken to provoke biliary flushing. This vesicular cleansing is combined with an enema the following morning. This will prepare the first Yawar Panga, a detoxifying emetic plant which works on his energies and is administered within a ritual setting. This session is generally tiring (2-3 hours of vomiting) and is followed by a deep and revitalizing sleep. The patient notes an immediate improvement the following day, feeling cleansed and more clear-minded, encouraging him to persevere. The withdrawal symptoms are thus somewhat alleviated.

During this week, the cost of the treatment is discussed. The patient or his family is asked to contribute what they realistically can. The cost varies according to the center's running costs at the time. Really poor patients pay nothing at all for their treatment. Takiwasi has never refused any patient for lack of money. The most important element is the patient's motivation to stop taking drugs. Many initial contacts do not result in enrollment as after a few days, the drug addict does not return. If the future patient maintains his motivation and reports to the Center during one week, he is then admitted to follow the complete treatment as an inpatient.

Physical rehabilitation

The first two months of the treatment are basically dedicated to physically rehabilitating the patient. At the health center associated with Takiwasi, he receives a comprehensive medical examination including laboratory tests on blood, urine and faeces, HIV and hepatic tests and screening for intestinal parasites. During all his treatment, medical check-ups are subsequently made according to individual progress and always at the end of a patient's stay here. Even patients who arrive in the worst of states completely recover physically in 2 months. Most patients also require treatment for certain "energy disorders." This involves taking Camalonga (strychnos sp.), a detoxifying seed containing strychnine, which is taken for ten days, combined with a no-sugar diet.

Numerous plants are used to treat the frequent infections that manifest during the recovery of the patient's normal eliminatory functions in the detoxification process. Modern medicine is sometimes employed in case of emergency, minor surgery, certain infections and dental requirements, but we don't use pharmaceutical psychotropics.

Isolation

The patient is first isolated in a separate bungalow for 8 to 15 days. He may leave the bungalow but is not permitted contact with the other patients. His food is brought to him. During this period his only activities will be reading and drawing. This phase of silence and solitude permits introspection and puts to the test his initial motivation while avoiding the risk of his bodily emanations (smelling of basic paste of cocaine) deterring the other patients. The Yawar panga session will be repeated two or three times on the first two weeks. With each new session the recovery process is accelerated. Throughout his stay, the patient may request another session with this plant if he feels the need. This purging with Yawar Panga, besides eliminating toxic drug residues and other contaminants, will help the body to assimilate the psychotropic plants used during the following sessions. Saunas with medicinal plants, massages, daily interviews with a therapist, a well-balanced diet, rest-periods and showers all complement these Yawar Panga sessions. The patient is told that, no matter what time of day or night, he can call a therapist if he is feeling bad. Any withdrawal or angst crises that arise are dealt with through work on the body's energies.

This isolation also avoids the risk of longer-term patients recounting to him their experiences with psychotropic plants, thus preventing him from forming his own conclusions during his first treatment with psychotropics.

The commitment

When the isolation period is over, the first and essential act of the new patient is to sign a written commitment to respect the rules of admittance. This pledge is made in front of all the members of the center and a statue of the Virgin representing the sacred nature of his promise. Takiwasi in no way requires the patient to follow a specific religion, such as Catholicism, but tries to open the patient to a true and personal spiritual search. This aim will be present during

the following months and is crucial to the treatment.

The commitment signed by the new patient summarizes the Takiwasi philosophy:

- The patient agrees not to leave the center without permission; if he does then this is considered to be a breach of contract and abandonment of his treatment and the patient will not be readmitted to the center. However, the center is open and there is no strict control over the patient. His stay is 100% voluntary and he must renew on a daily basis his motivation for being here.

- Violence is prohibited while verbal expression is encouraged.

- The patient must wait for the "green light" from the therapists that treatment is complete, the minimum time prescribed being 8 months (several patients stayed for over a year). There is no contact with family or friends for the first 3 months and afterwards depending upon the therapists' opinions.

Ayahuasca session

The isolation period ends with the first ayahuasca session.(1) After this, the new patient will join the rest of the patient group. These sessions are repeated once a week and bring to the surface various psychic elements (dreams, fears, etc...) buried within the subconscious. They provide the crux of the therapy. These psychic elements revealed during the sessions will be worked upon later using group dynamics, personal interviews, drawing, etc... Ayahuasca can be compared to an accelerated self-psycho-analysis where the patient understands and "sees" by himself his problems and the solutions to them and in this way accepts change more easily.

Everyday Life

The patient then rejoins the group and is incorporated in communal tasks. This means participating in early-morning exercises and in a practical area that interests him that is chosen from agriculture, animal husbandry, construction, handicrafts or cooking. All maintenance and meal preparation is carried out by the patients themselves. Patients may abstain from exercises or duties if they are not feeling well. Variety is provided by walks in the forest, birthdays and regular workshops given by therapists from outside the center (for example mask-making, storytelling, clown and mime workshops, theatrical dynamics etc.)

Through each patient's way of coping with everyday situations we get to observe many character traits, crises and conflicts to be worked

The diet: during 8 days, the patient is alone in a small rustic house

on during therapy sessions. The patient is never alone and always has recourse to a therapist to sort out any serious crisis that arises. The response we propose is to find a way to communicate instead of bottling-up potentially explosive feelings.

Second Month

By the end of a patient's second month at the center his chances of completing the entire treatment are much more realistic. He is congratulated for having resisted the initial temptations to leave. He is considered to have attained his physical recovery, allowing him to concentrate on deepening his self-knowledge, exploring his identity and his most intimate self-motivations, although this self-awareness really began on Day 1.

The Diet

The diet is an ancestral technique of the Amazonian healers involving complete isolation in the forest in order to create the necessary conditions for ingesting especially subtle plant preparations.

The patient remains alone in a hut, deprived of all distractions and with nothing to do except be there. Food is restricted and very basic. Every morning he drinks a preparation of purgatives and psychotropics which may cause vomiting depending upon how he reacts to the diverse effects produced; drowsiness, "drunkenness," surges of emotion, vivid visions or, upon shutting his eyes, a resurgence of forgotten memories etc. In some way doors are opened allowing both the elimination of misplaced "energies" ingrained in his body (in the most general sense of the word) and access to his interior world. While asleep, powerful dreams make him conscious of elements buried in his psyche which will serve to guide him on his personal quest. His rapport with the natural world around him compensates for the isolation and lack of human contact.

During these eight days the patient follows strict rules designed to avoid any "energy disturbances," given the vulnerability produced by the combination of the plant preparation and the complete absence of salt in his diet. Besides complete sexual abstinence, he must avoid exposure to sunlight and contact with rain and fire. He must not bathe and must always bury his excrement.

The therapist responsible for the dieter(s) is always within earshot but leaves the patient alone. He brings the plant preparation in the morning and delivers the two daily meals, giving him a chance to make sure the patient is all right and to reassure him if necessary.

By the end of a patient's second month at the center his chances of completing the entire treatment are much more realistic.

Ayahuasca being cooked

During its first three years in existence, Takiwasi has treated 141 patients.

This ancestral technique of modifying states of consciousness will be re-applied three times during the treatment (usually the 3rd, 5th and 7th month) and a fourth time if necessary.

A great variety of different plant preparations are employed, each one giving a different orientation to the diet. For example "sanango" generally induces memories of childhood traumas while "qilluhuiqui" reinforces the "I" and self-identity. All this manifests on physical, mental and spiritual planes simultaneously.

The diet consists of eight days' complete isolation followed by 15 days of partial isolation at the center: the patient resumes a more varied diet but abstains from certain foods (spices, sugars, pork, coffee). He remains with his fellow dieters and resumes normal activities. Meanwhile he must avoid all contact with the sick persons, new patients still in the detoxification phase (since they give off a strong odor) and menstruating women (a recommendation based on the experience of every curandero, because during menses a woman's energetic system undergoes an upheaval). Avoiding stuffy, noisy atmospheres and deranged or disturbed persons is also recommended. Those recommendations are to avoid perturbations as the patient's sensitivity is highly developed in all aspects. The patient feels highly alert, experiences meaningful dreams, perceives insights and observes synchronicity phenomena... all this will be worked on in due course. There are no ayahuasca sessions during the diet and the subsequent period of semi-isolation.

Other Therapeutic Techniques

There is a range of therapeutic techniques which are used in Takiwasi according to individual or group needs. These include the main shamanic techniques:

"Soplada": regulation of a patient's energies by blowing smoke or atomizing perfumes over certain energy points ("Chakras") on a patient's body.

"Ikarada": the use of sacred chants to "energize" the plant preparations, the ayahuasca, the perfumes used for the soplada, etc.

"Sahumerio": a cleansing of energies using the strong-smelling smoke of burning herbs, incense, etc.

Baths: in waterfalls, rapids or with plants, sometimes combined with massages, "cleansing": of bodily energies with the aid of an absorbent substance or object such as alum stone, eggs and special woods (palo chonta); etc.

The originality of the Takiwasi treatment is also to associate the use of plants and shamanistic techniques with modern therapies or other introspection techniques such as Holotropic breathing after the Stan Grof model, Bach flower essences, massage, saunas with medicinal plants, group dynamics, artistic and bodily expression, meditation, breathing exercises and other purges taken during specific lunar phases.

The Maloca, location of the therapy sessions

The Patients

During its first three years in existence, Takiwasi has treated 141 patients. This number includes patients who received treatment for drug addiction (64%) and those who received treatment as outpatients for psychological problems and alcoholism (36%). Of the addicts, all but two were using basic paste of cocaine, sometimes mixed with alcohol and marijuana.

An average of 30% of initial contacts with the family or patient resulted in a treatment. This average may seem low but it should be noted that Takiwasi is an open center which uses non-coercive methods, believing that true motivation to cure oneself and will power are indispensable for treatment.

Practically all the patients have been Peruvians, preference being given to residents of this region. Until now, only two patients have come from other countries. Both were good Spanish speakers, a prerequisite for treatment at Takiwasi. In any case, it's essential for any prospective patient to contact us first and send us a written application. We cannot accept patients who simply turn up on the door step. The average age is between 20 and 30, with some adolescents admitted. So far all but two have been male. Only two women have been admitted for treatment because the female addict population is smaller than the male one. Also, women tend to be more embarrassed about coming out in public about their problem. Generally, here in Peru, they take drugs at home. Their experience of the treatment was the same as the men's but they did not complete the full treatment. Social backgrounds are very diverse, ranging from indigenous "campesinos" to well-travelled, university-educated intellectuals.

Almost all the patients are consumers of basic paste of cocaine (which is highly toxic and alienating), together with alcohol and marijuana. Often they have used other psychotropic substances (medications, LSD, cocaine, etc.) Most have been involved in minor, if not major crimes and have spent time in prison. On average they have been taking drugs for 10-15 years. Some patients show signs of serious physical deterioration: severe anemia (one patient had 4,6 gr. on arrival), hepatic deficiencies, edema of the legs, etc.

Results

It's usually agreed that five years' abstinence is the minimum necessary to know if someone is really free of drugs. That is why the evaluation realized during Takiwasi's first two and a half years is based on other criteria such as the patient's evolution in relation to himself, his family and society.

Amongst the drug-addicted patients, 18% finished the treatment and stayed on average nine months (ranging from six to fourteen months). More than half of the patients left within the first three months against the advice of the therapists who can only try to convince them to stick with the treatment. Twenty five percent "escaped" within the first three weeks without trying to discuss their decision with the therapists. As the treatment is refined, the percentage of "escapes" has decreased significantly. The trial week with emetic plants has allowed a "natural selection" of the most highly motivated. Three patients were expelled for disruptive behavior.

Even though the majority have tried drugs again, usually for a short period or only once, this does not mean that regular consumption began again. Clearly those patients who "escaped" or were expelled run a high risk of re-addiction. Those who left the treatment before the end run a somewhat smaller risk. Those who finished the entire treatment have the best prospects of beginning a new life.

An interesting proof of faith in the treatment is that 75% of past patients have come back to Takiwasi as visitors to ask for advice or help when in difficult periods of their lives. Some have asked to take plant purges again. We note that those who finished the treatment have a much better perspective on life than those who left before the end. Relapses are basically due to fragility or the lack of faith in the patient's own healing, inability to react appropriately when confronted by frustration or anger and failure to integrate transcendence into their daily life. The treatment proposed by Takiwasi consists of a radical change of life-style and is for that reason a long and evolutionary process. Since Takiwasi is an Experimental and Research Center, the treatment can be refined and improved in the following years. But we consider that addiction is a consequence of the loss of values in society, a distortion of the relation between the man and his external and internal environment, and finally, as the loss of the sacred and the spiritual dimensions. •

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1. See the description of an ayahuasca session in Dr. Jacques Mabit's article "L'hallucination par l'ayahuasca chez les guérisseurs de la Haute-Amazonie Péruvienne," 1988, Bulletin de l'IFEA (English translation available in Takiwasi).

English translation by Jamie Moir

pharmahuasca: on phenethylamines and potentiation

Jonathan **Ott**

READ WITH INTEREST Alfred Savinelli and John H. Halpern's *Short Communication* "MAOI Contraindications" in the Autumn MAPS BULLETIN [VI(1): 58, 1995], concerning the well-known incompatibility of monoamine oxidase inhibitors (MAOI) and foods containing tyramine and other phenethylamines, and the more recondite contraindication against ingesting MAOI in combination with serotonin-uptake inhibitors like *Prozac*.® A similar warning has been voiced in these pages [MAPS BULLETIN IV(2): 30–32, 1993; IV(4): 58, 1994] and elsewhere[1] by J.C. Callaway, neurochemist, ayahuasca specialist and originator of the *endohuasca* hypothesis (of dream visions involving interaction between endogenous tryptamines and MAOI). I wish to comment on the MAOI/ß-phenethylamine contraindication as it concerns ayahuasca, *anahuasca* (so-called 'ayahuasca analogues') and *pharmahuasca* (anahuasca prepared with pure compounds), and draw attention to a statement made by Savinelli and Halpern, which is certainly misleading, if not outright false.

I wish to comment on the MAOI/ß-phenethylamine contraindication as it concerns ayahuasca, anahuasca (so-called 'ayahuasca analogues') and pharmahuasca (anahuasca prepared with pure compounds)

Savinelli and Halpern state: "The mechanism of MAOI can be used to potentiate most classes of tryptamines as well as many other classes of drugs." Callaway has also made similar statements: "It is well known that ßCs [ß-carbolines] potentiate the activity of methylated tryptamines..."[2] and "harmala alkaloids can facilitate and potentiate the psychoactivity of additional components [of ayahuasca] through enzyme inhibition."[3] Note the verb *potentiate*, meaning in pharmacology 'to render more potent.' The mechanism of the 'ayahuasca effect' (facilitation of oral activity of DMT by inhibition of the enzyme monoamine oxidase), first proposed by Holmstedt and Lindgren in 1967,[4] has lately been verified by human psychonautic bio-assays[5] and is now widely accepted. Although oral DMT in pharmahuasca is surely more active than taken neat (doses up to 1.0 g inactive in human subjects[6]), since the compound appears *not to be orally active at all* absent MAOI, it would be misleading to characterize this effect as *potentiation*. Moreover, the scant human pharmacological data we have on DMT suggests that the drug is less active orally in *huascas* than by other routes — intravenous or intramuscular injection, or inhaling the vaporized base.[5,6,7,8] A similar correspondence seems to hold for the orally-inactive 5-methoxy-DMT [*O*–methyl bufotenine], orally-active when ingested in pharmahuasca, but weaker than via smoking or injection.[5] This is certainly *not* potentiation!

Moreover, there is experimental evidence that the pharmaceutical MAOI iproniazid (*Marsilid*®) markedly *inhibits* the visionary effects of DMT injected intramuscularly. In seven subjects given intramuscular injections of DMT (two at 0.35–0.55 mg/kg; five at 0.65–0.83 mg/kg), *greatly reduced* psychoactivity was observed when the experiment was repeated two days after having received 100 mg iproniazid daily, for 4 days ("the DMT psychosis... was less pronounced; there were illusions and hallucinations, but

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without colours, or only with a few of them").[9] The author commented that the "high 5-HT [serotonin] level" produced by the MAOI blocked the effect of DMT, thought to owe its psychoactivity to serotonin antagonism — with higher background levels of serotonin, higher doses of DMT would be required to produce equivalent effects absent MAOI. Earlier experiments had established that pretreatment with 'antiserotonin,' a serotonin antagonist, D-lysergic acid butanolamide (UML-491, methysergide, *Sansert,*® *Deseril*®—1-2 mg administered perorally 30–40 minutes prior to DMT injection; or 0.5 mg injected intramuscularly 10 minutes prior) had "a very strong potentiating effect on the experimental dmt–psychosis."[10] That is, it was serotonin antagonism which truly potentiated DMT, while the increased brain serotonin resulting from MAOI pretreatment rather had the opposite effect of DMT–blocker, which would explain our limited human pharmacological data showing DMT weaker orally in *huascas*. Of course, we now know that UML-491 is itself psychoactive and LSD-like, but only in higher doses than employed here — 4.3 mg was said to be equivalent to a nominal 25 mcg dose of LSD.[11] Similarly, it was reported in this Bulletin [*MAPS Bulletin* V(1): 32, 1994] that "serotonin... receptor blockade [by pindolol or *Visken,*® a 4-hydroxy-indole developed by Sandoz in structure-activity-relationship studies of psilocin] enhanced the psychological effects of DMT." Again, we have seen that MAOI hardly can be said to *potentiate* DMT; if anything, the reverse obtains, with serotonin antagonism/blockade, rather than MAOI–type serotonin enhancement, showing true potentiation of DMT.

What, then of "other classes of drugs"— have we evidence that MAOI can potentiate other visionary drugs? In the case of LSD, emphatically not. The MAOI iso-carboxazide (Marplan®) was used as pretreatment to oral doses of 40 and 75 mcg LSD in 4 human subjects, all of whom "volunteered the information that, following Marplan pretreatment, the experiences produced by LSD-25 were either very markedly attenuated or did not develop at all... all four subjects were emphatic... that, following LSD-25 plus Marplan pretreatment, they did not experience anything in any way similar to the experiences produced by LSD-25 without Marplan pretreatment" (each experimental subject had experienced both doses of LSD neat, and both after 2 weeks of 30 mg/day isocarboxazide, and after 5 weeks of this MAOI at 30 mg/day).[12] I might note parenthetically that Marplan, 30 mg/day, was shown in a single human bioassay to render DMT active orally.[5] It was reported in these pages that interviews conducted as part of an NIMH study showed a "decrease in response to LSD... in those people who had been taking an MAO inhibitor [for medicinal purposes]" [MAPS Bulletin V(1): 9, 1994]. We thus have both experimental and anecdotal evidence that MAOI, far from potentiating LSD, rather seem to exert an effect parallel to that of DMT -blocker, serving also as LSD-blockers!

What, then of "other classes of drugs"— have we evidence that MAOI can potentiate other visionary drugs?

TO BE SURE, I have heard considerable anecdotal evidence, to the effect that pre-treatment by Syrian rue seeds, ß-carboline-rich seeds of *Peganum harmala L.* used in anahuasca,[5] can potentiate the effects of psilocybian mushrooms, pursuant to this general notion of ß-carbolines as all-purpose potentiators of visionary drugs. However, nobody has proffered hard evidence of this, even with the most rudimentary controls. All the anecdotal evidence I have heard concerns vague bioassays involving psilocybian mushrooms as the psilocybin source, sometimes not even weighed doses, but counted, by pairs! Since potency of psilocybian mushrooms is notoriously variable, even in commercially-cultivated *Psilocybe cubensis* (Earle) Singer (in commercial-style Mason jar cultures, there was up to a four-fold variation in potency of individual mushrooms from a given jar,[13] even up to nearly three-fold variation in psilocybin content between caps and stems of the same mushroom[14]). Given this gross variation in psilocybin potency, even of cultivated mushrooms, and the fact that, as we have seen, MAOI weaken, rather than potentiate, DMT and LSD, we will need controlled human bioassays with pure ß-carbolines and psilocybin in pharmahuasca capsules to establish whether or not MAOI can truly potentiate psilocybin. Vague reports to the effect that "when I took three pairs (or three grams) of mushrooms after swallowing a handful of ground-up Syrian rue seeds..." are worthless for the purpose of establishing synergy or antagonism. Nevertheless, inasmuch as so many people have avowed that Syrian rue seeds potentiate psilocybian mushrooms, there must be some truth to this. I am not claiming this is not true, only that we have no solid proof of this. Since data on related visionary tryptamines DMT and LSD suggest conventional wisdom on this point is wrong, any potentiation of psilocybin by MAOI would be an anomaly, hardly expected — certainly not to be taken for granted.

All this begs the question of the primary locus of MAO inhibition in the ayahuasca effect. The limited data suggest a neurochemical effect of MAO inhibition is as DMT- and LSD-blocker — when MAOI are taken chronically, as used medicinally, so that therapeutic, high serotonin levels are achieved in the brain, both the effects of intramuscularly-injected DMT and oral LSD are inhibited.[9,12] Conversely, oral or intramuscularly-injected

methysergide, having the opposite neurochemical effect of antagonizing serotonin, was shown to exert a "very strong potentiating effect" on intramuscularly-injected DMT,[10] while pindolol, which analogously blocks serotonin receptors "enhanced the psychological effects of DMT." This is consistent with the hypothesis of DMT psychoactivity as a result of serotonin antagonism — MAOI, which elevate brain serotonin, inhibit the DMT effect, and the serotonin antagonist methysergide and serotonin receptor blocker pindolol enhance it. It thus follows that the ayahuasca effect is due to MAO inhibition in the digestive system or blood stream, protecting DMT from metabolism en route to the brain, where the MAOI paradoxically attenuate the DMT effect. I found that *Marplan* (which "very markedly attenuated" LSD activity when taken orally 30 mg/day over 2 or 5 weeks), ingested in 3, 10 mg doses on a single day, activated 30 mg DMT taken orally an hour after the third dose.[5] It seems that in this case, *Marplan* sufficiently inhibited digestive MAO as to allow absorption of the DMT; all before sufficiently high brain serotonin levels could inhibit its effect. I questioned Deborah Mash at the UDV meeting in Rio in November 1995, whether her preliminary data on human pharmacology shed light on this problem. Her response was that the primary site of MAO inhibition in ayahuasca seemed to be peripheral, i.e. in the digestive system or blood stream.

This brings me to my second comment on Savinelli and Halpern's article — the MAOI/ß-phenethylamine contraindication. While these authors and Callaway are quite right to caution would-be experimenters regarding the dangers of ingesting foods rich in tyramine (4-OH-ß-phenethylamine), should they be under medical treatment involving chronic, daily ingestion of MAOI like *Marplan*, I argued that such strictures do not necessarily apply to users of *huascas* based on ß-carbolines as MAOI.[5] There are gross differences in dose regimen, toxicity and pharmacodynamics of ß-carbolines, as opposed to medicinal MAOI like *Marplan* — the latter are potent, generally irreversible inhibitors (that is, they bind irreversibly to MAO molecules, thus destroying them) which are ingested daily over lengthy periods, taking from a few days to a few months to exert their maximum effect, which may persist for a like time even after cessation of daily ingestion. In other words, their use involves a chronic, full-scale alteration of biochemistry, not just of the serotonin system. In the case of the ß-carbolines, these are reversible MAOI (that is, they compete with normal substrates for active sites on the enzyme molecules, but do not bind to them permanently) taken in single doses, with a transient effect, estimated by Callaway to last only "for several hours" [*MAPS BULLETIN* IV(2): 31, 1993]. I have personally tempted fate, and ingested cheese, beer, chocolate, caffeine, nuts, dried fruit, etc. in the afterglows of my *pharmahuasca* and *anahuasca* experiences, with no ill effects whatever.[5] While I am in complete agreement with Callaway's warning, that "MAO inhibitors, in general, are not safe drugs to play around with" [*MAPS BULLETIN* IV (4): 58, 1994], we in fact have no evidence that ß-phenethylamines are rendered toxic by combination with single doses of ß-carbolines, such as are employed in *huascas*.

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Moreover, there is circumstantial evidence for traditional use of ayahuasca containing mescaline and/or other ß-phenethylamines in Amazonian Peru. One of the most complete scientific studies of ayahuasca yet conducted reported the use by Peruvian Indians of a cultivated *Opuntia* species, called *tchai* in Sharanahua, as an ayahuasca admixture, and said to be "very strong." Another cactus, a species of *Epiphyllum*, known as *pokere* in Sharanahua and *wamapanako* in Culina, was likewise added to ayahuasca.[15] A Shipibo informant recently stated that *tchai* was no longer employed in ayahuasca, the resulting brew becoming "too intense."[16] We have no phytochemical data on these cacti, but several species of *Opuntia* are known to contain low levels of mescaline,[17] and preliminary human bioassays suggest that the ß-carboline harmaline might in fact potentiate mescaline — low doses of 60 and 100 mg mescaline hydrochloride, corresponding to 51 and 86 mg base or 0.78 and 1.32 mg/kg respectively, were decidedly psychoactive. The combination of mescaline or mescaline-containing cacti with ß-carbolines has been dubbed *peyohuasca*.[5,18]

It is therefore obvious that Savinelli and Halpern's statement that "MAOI can be used to potentiate most classes of tryptamines as well as many other classes of drugs" is dubious — seemingly false in the case of DMT and 5-methoxy-DMT, likewise in the case of LSD; possible but unproven in the case of psilocybin, and seemingly true in the case of mescaline. We must ever be cautious not to go beyond our (in this case scant) evidence, and in light of Callaway's sagacious admonishment about "playing around with" MAOI, careful not to encourage the evident fad in Syrian rue seed use as a purported, multi-purpose, panpotentiator of visionary drugs — one 'basement shaman' has even combined Syrian rue seeds with Salvia divinorum (the active principle of which, salvinorin A, is not even an amine![19]), to yield Salvia ayahuasca.[20] It seems the warnings of incompatibility of ß-phenethylamines

with ß-carbolines are premature if not exaggerated, and we must bear in mind the 'boy who cried wolf syndrome,' so as not to vitiate the warnings about the so-called 'serotonin syndrome' resulting from combining MAOI with serotonin-uptake inhibitors like the popular Prozac, whose use likewise has achieved the status of a fad. Deaths have resulted from this combination, although again, these involved the pharmaceutical MAOI moclobemide, not single doses of ß-carbolines; combined with citalopram and clomipramine, not fluoxetine or Prozac. However, given the facts that moclobemide is a reversible MAOI, and that already numerous deaths have been attributed to this 'serotonin syndrome,' not to forget the overblown popularity of Prozac (today's 'miracle drug,' tomorrow's drug-abuse scourge), this warning is appropriate.

IN CONCLUSION, I wish to add my own warning to psychonauts and 'basement shamans' who experiment with pharmahuasca and anahuasca. It has come to my attention that some swallow capsules of Syrian rue seeds rather than make aqueous infusions, or swallow juice of Phalaris or root bark of Mimosa tenuiflora (Willd.) Poir., all to avoid tasting the bitter medicine. However, making aqueous infusions effects a crude separation, leaving behind non-water-soluble constituents, potentially toxic. Existence of traditional use of aqueous infusions of M. tenuiflora roots, as vinho da jurema, does not constitute proof that it is safe to swallow the roots or their bark themselves, and one colleague experienced toxicity from so ingesting capsules of ground M. tenuiflora root bark as anahuasca, whereas a prior experiment with an aqueous infusion of the same root bark provoked no such toxicity. This toxicity may have been due to the chalcones kukulkanins A and B found in bark of M. tenuiflora, and which are lipid-soluble,[21] and would not appreciably be extracted into water. Similarly, apart from containing high amounts of ß-carboline alkaloids, Syrian rue seeds also contain significant levels of the uterotonic quinazoline alkaloids vasicine (peganine) and vasicinone, accounting for ethnomedicinal use of these seeds as an abortifacient.[5,17,22] Since these alkaloids are much less soluble in water than are the ß-carbolines, once again making an aqueous infusion will effect a separation, leaving the bulk of the quinazoline alkaloids behind in the seed residue, amounting to lower toxicity, especially significant for women, particularly if they are pregnant. Clearly, in their zeal to avoid tasting their bitter medicine, anahuascanauts are playing with fire, exposing themselves to unnecessary risks, ingesting preparations lacking some traditional track-record for human safety. All to avoid tasting the bitter draught... but some regard withstanding this bitterness as a rite of passage... as James Joyce said,[23] "no roses without thorns"... but Joyce was referring to women, not to drugs! •

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CONFERENCES

a report from the **international conference of hoasca studies**, november 2-4, 1995

'The encounter between scientific knowledge and coboclo[1] wisdom...'

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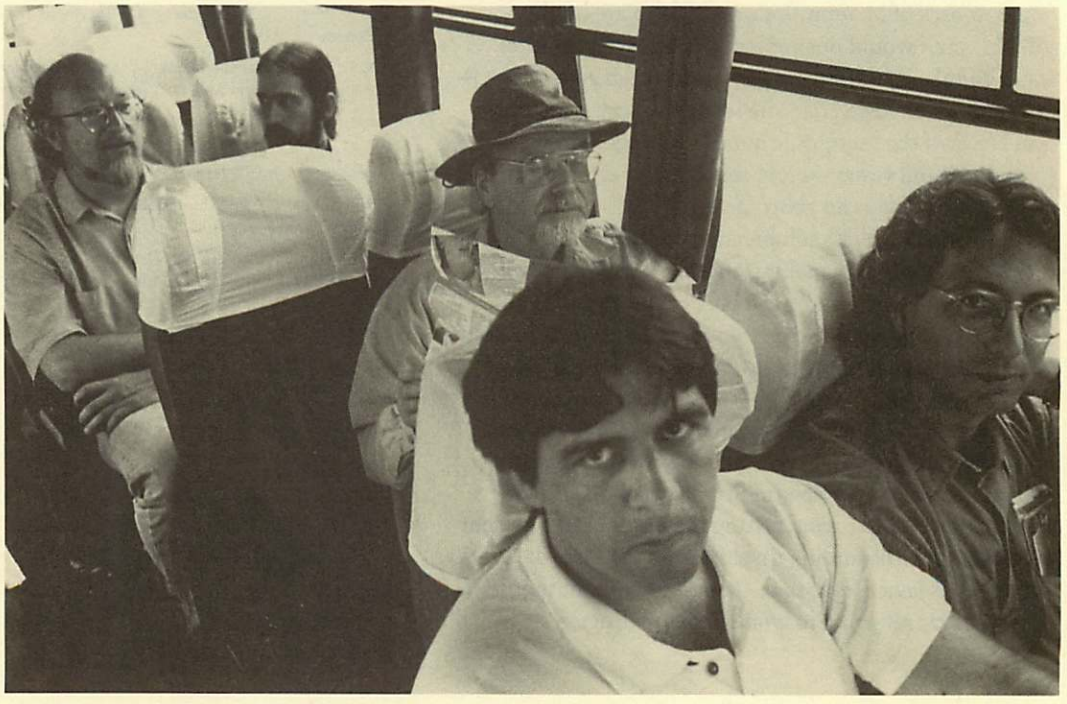
THE UNIÃO DO VEGETAL (UDV) had its world debut in Rio de Janeiro by organizing and hosting the International Conference of Hoasca Studies, November 2-4, 1995. The UDV, literally 'the Union of Vegetal,' was founded by Jose Gabriel Costa in a remote area of Brazil on July 22, 1961. The Vegetal is better known as Ayahuasca in North America, and in Brazil this beverage goes by the name Hoasca. The UDV is the largest single organization that uses Ayahuasca as a religious sacrament, and its membership presently exceeds 5,000 individuals who are distributed among 60 nucleos throughout Brazil. (The Santo Daime is the largest "group" using Ayahuasca but members are split into about seven different directions and all follow different doctrines. At last count, the Santo Daime numbered about 7,500.)

The UDV is a civic-minded organization that makes a significant contribution in volunteer energy towards caring for the sick and elderly and providing food and shelter for women and children. It is actively involved in several ecological projects. In addition, their high regard for family, and especially the future of children, offer a fine example of how a psychoactive sacrament can affect productive interpersonal relationships.



On the bus to the International Conference on Hoasca Studies: Glacus S. Brito and Charles Grob, Medical Codirectors of the conference (front), Ralph Metzner (middle), Dennis McKenna and Jace Callaway (back) photo © 1995 John Fago

[1]Coboclo is the Brazilian word for mestizo, the resulting mix from Indians and Europeans.

One of the UDV's long-term missions is to promote world peace through the wisdom obtained by regular use of the Vegetal. In the summer of 1993 an international team of scientists initiated a study of this beverage, its plant components and 15 volunteers who had used it on a regular basis for ten years or more. This was the Hoasca Project, and many of the presentations at this conference were directly related to this prospective study (see MAPS Research Update Vol. 5 No. 4, pp. 4 & 5).

Unlike more well known Ayahuasca religions in Brazil, the UDV have maintained a very low profile over the years and have worked carefully with bureaucratic agencies to preserve their religious liberties. In fact, several of the reporters covering the conference had never even heard of this organization. This event received wide media coverage on both local and national levels.

Set

Just over 800 persons attended the Conference of Hoasca Studies including about 50 people from outside Brazil. About 60-70% of the 800 attendees were UDV members. This event was not only informative but experiential. All participants had the opportunity to participate in formal sessions before and after the conference, where significant amounts of the bitter brew were distributed within a ritual context (not all 800 chose to accept this invitation, however). To say the least, these experiences established important transpersonal and cross-cultural bonds, which heightened trust and openness throughout the crowd.

Setting

Our conference site was The Hotel Gloria, a grand old structure which has been renovated over the years to keep pace with international expectations. Besides the Conference of Hoasca Studies, the UDV sponsored two other parallel conferences at the same site: one on health and the other on ecology. The conference facilities were exceptional, as audio visual equipment worth about $40,000 had been acquired to enhance the presentations. In addition to the lectures, a visual art exhibition was on display to convey images of another world, where no words do justice.

Thursday November 2, 1995

The Conference opened with a review course on Ayahuasca, where Gabriel Travini, M.D. from São Paulo, described the botany of the plants that are typically used to prepare this tea; the liana *Banisteriopsis caapi* which contains harmala alkaloids and the leaves of *Psychotria viridis* which provide N,N-dimethyltryptamine (DMT). The Colombian anthropologist Luis Eduardo Luna, Ph.D. reminded us that indigenous peoples of South American used a much wider variety of plant-teachers in their preparations, long before Portuguese rubber tappers began to bring this mystery to the attention of urban Brazilians. Luna spoke from several years of anthropological experience with Peruvian shamans who also use Ayahuasca (Luna and Amaringo 1991). Guilherme Oberlander, M.D. from Rio de Janeiro, gave a fine overview of Ayahuasca-related neuropharmacology, stressing

Some of the samples collected during the Hoasca Project were blood platelets (thrombocytes) for receptor binding studies with serotonergic ligands...

International Conference of Hoasca Studies
photo © 1995 John Fago

The final day of the conference opened with an institutional profile of the UDV, by Edison Saraiva Neves, M.D., president and general director of the UDV.

the actions of plant alkaloids on the serotonergic system and how harmala alkaloids inhibit monoamine oxidase type A (MAO-A) to facilitate the oral activity of DMT in this unusual binary preparation. American ethnobotanist Dennis McKenna, Ph.D. concluded this session by providing an overview of modern Ayahuasca research; from the early encounters of Richard Spruce almost 150 years ago, on to the pioneering works of Richard Schultes and Bo Holmstedt in botanical and phytochemical analyses, respectively, and up to the present revival of ethnobotany and ethnopharmacology.

Later on that evening, writer and explorer Jonathan Ott transmitted his exceptional version of history and reminded us that it was almost 1,600 years to the day when the 'Pharmacratic Inquisition' began with the destruction of the temple at Eleusis, marking the end of the 'Age of Entheogens', and that we are presently experiencing the 'Entheogenic Reformation'. The curious reader is directed towards further reading of these and other matters in the most comprehensive treatment of Ayahuasca botany and pharmacology ever written (Ayahuasca Analogues: Pangæn Entheogens, Ott 1994). Luis Luna concluded the first day of lectures with another talk, entitled 'History of the Tea Use in the Americas and its Significance in Modern Society', and received a hearty round of applause and standing ovation as he suggested that women take a stronger role in this (presently) male dominated religion. The evening of the first day concluded with a musical show of Andean folk music by the Chaski Group.

Friday 3 November 1995

Several excellent talks continued on the following day, along with a video of the Hoasca Project as it was documented in Manaus, during June and July of 1993. This work was initially funded by private donations to Botanical Dimensions, a nonprofit research organization supporting the investigation of ethnomedicinally significant plants. From that prospective study, we collected a wide variety of samples which are still in the process of analysis. In my first of three lectures for this conference, I presented the results from phytochemical analyses of several plant and tea samples and reported on their concentrations of DMT and harmala alkaloids. Private funding has been provided for a more extensive phytochemical survey that began by the collection of well documented plant samples throughout Brazil, on the same day, at the end of the dry season (October). In an attempt to determine variations in alkaloid profiles, another collection from the exact same plants will be made in April of 1996 (the end of the subsequent wet season).

Deborah Mash, Ph.D. from the University of Miami, presented her preliminary findings on a pharmacokinetic study of DMT levels in plasma samples that were collected over time from the 15 experienced volunteers who had consumed 2 ml/kg of the tea as part of the Hoasca Project. Some of this work was supported by a $5,000 grant from MAPS. American psychiatrist Charles Grob, M.D., UCLA-Harbor Medical School,

An informal group listens to Carmiro, son of M. Gabriel, as he speaks about their lives in the forest during the formative years of União do Vegetal. photo © 1995 John Fago

presented the results from a neuroendocrine challenge assay with these same volunteers, and in another lecture provided results from personality and neurophysiological evaluations among the Hoasca users and a group of matched controls (Grob et al. 1996). A Brazilian psychiatrist, Osvaldo Luiz Saide of Rio de Janeiro, presented results from additional psychological evaluations obtained from this same group, concerning the acute effects from Hoasca.

SOME OF THE SAMPLES collected during the Hoasca Project were blood platelets (thrombocytes) for receptor binding studies with serotonergic ligands, and initial results concerning platelet serotonin uptake sites have already been published (Callaway et al. 1994). I spoke about these results in my second lecture, and presented new information suggesting a role for Hoasca alkaloids in the treatment of depression and substance misuse, particularly alcoholism. We are already planning additional receptor binding studies in a larger population of regular Hoasca users, which also includes women, to identify the nature of the unique change that was observed in the platelets of the hoasceros. Furthermore, pilot sessions with cocaine addicts using Hoasca in a ritual context have been approved in Brazil. These sessions will be run by medical doctors who are also UDV members.

Mirtes Costa, from the University of Campinas in Brazil, presented her toxicity data on the oral dose of Ayahuasca that is lethal for 50% of the experimental rats (LD50). She estimated that approximately 7.8 liters of the tea would be a lethal dose for a 75 kg human. She seemed surprised when the audience of experienced hoasceros and hoasceras laughed in delight at this outrageous amount. In a subsequent panel discussion it was brought out that this amount would be approximately 50 times a normal human dose and, perhaps more to the point, rats do not vomit!

Elizabeth Andrade, M.D. a cardiologist from the Federal University in Manaus and Glacus de Souza Brito, M.D., president of the UDV Center for Medical Studies, discussed acute physiological effects from the tea using EKG data obtained from the Hoasca Project. The observation of bradycardia (slowed heart rate, < 60 beats/min.) as an acute side effect in some of the individuals has generated considerable discussion over the past two years. Although bradycardia is sometimes seen during sleep and other stages of deep relaxation, it seems of little consequence in healthy individuals. However, it was suggested that in some individuals having weak cardiac function that induced bradycardia could lead to more serious conditions. This matter will be the focus of future studies. The second day concluded with a short panel discussion.

Saturday November 4, 1995

The final day of the conference opened with an institutional profile of the UDV, by Edison Saraiva Neves, M.D., president and general director of the UDV. A round table discussion followed concerning legal aspects of Hoasca in

Through the UDV, we find an excellent example of how a sacred psychoactive substance may be incorporated into everyday reality, and within the existing structures of a modern society.

Deborah Mash, Jace Callaway and Dennis McKenna answer questions after a panel at the International Conference of Hoasca Studies
photo © 1995 John Fago

Through the UDV, we find an excellent example of how a sacred psychoactive substance may be incorporated into everyday reality, and within the existing structures of a modern society.

both Brazil and the United States. Domingos Bernado, a civil lawyer and high official within the Brazilian National Counsel on Drugs (CONFEN), described his earliest recollections of the tea as a potential drug problem that came to his attention through dubious sources over 10 years ago. He told of his past mistakes in attempting to orchestrate a prohibition of its use under any circumstance. After a lengthy and thorough investigation of the matter, however, he was absolutely convinced of the benefits associated with regular Hoasca use, and since then he has passionately defended the right of individuals to celebrate their religion with this beverage. He went on to state that "the law provides a service to human kind when it does not get in the way," and this proclamation was followed by a solid round of applause. This public official's rapid recovery from ignorance is a unique case history, worthy of serious and careful consideration.

The middle part of the day opened with a talk on dimethyl tryptamines (DMTs), by the Argentinean researcher Ciprian Olivier, M.D., a student of the early psychedelic pioneers Fischer, Hoffer and Osmond, who had researched these endogenous compounds as possible 'schizotoxicins' a few decades ago. I followed with a talk on a previously published hypothesis stating a useful role for endogenous DMTs, i.e. normal dreaming, since these and other neuroactive indoles are found in normal humans and laboratory animals in addition to psychotic individuals (Callaway 1988). Jonathan Ott adroitly summed up this idea up with the term 'endohuasca' (Ott 1994). Chemical and mechanistic similarities were illustrated to highlight the similarities between endohuasca and Ayahuasca neuropharmacology.

Charles Grob continued the session with a talk on the implications of Hoasca studies to modern psychiatry, and stressed the need for more studies (and more funding) to establish the safety and inherent value to the individual and community from regular Hoasca use in a religious context. Juan Sanchez-Ramos, M.D., Ph.D. from the University of Miami followed with an excellent presentation of his paper on banisterene (harmaline/harmine) in the treatment of Parkinson's disease during the earlier half of this century (Sanchez-Ramos 1990). This stimulated much discussion and the call for an epidemiological study of UDV members to determine the frequency of this disease in relation to the overall Brazilian population.

After a break, Benny Shanon discussed the phenomenon of cognitive development during Hoasca use, and particularly its impact on language acquisition. Rarely, if ever, have so many Americans successfully managed to become conversant in a single foreign language (Portuguese) for a single purpose (gnosis). Ralph Metzner, Ph.D. professor of psychology, gave the closing lecture for the conference and remarked on how this event represented a remarriage of science and religion, after its formal divorce in the 17th century, and stressed our responsibilities as individuals to cultivate community connections, respect and listen to both women and children, resist oppression wherever it exists and to support indigenous peoples along with other forms of cultural and bio-diversity. I was particularly gratified to see some of the UVD elders, with their simultaneous translation head phones on, quietly nodding with Ralph's message.

In Summary

For the reader who was not present at this event, I realize this report may seem overly positive. However, in my personal opinion, I found this to be the most interesting and well organized conference I have ever attended. Through the UDV, we find an excellent example of how a sacred psychoactive substance may be incorporated into everyday reality, and within the existing structures of a modern society. This is certainly not the only way, though the signal comes clear from this southern direction. Let us keep an open eye on this situation, and an open mind to the ways of others. While the legendary telepathic effects of this brew are significant at sufficient doses, I might also suggest a crash course in Portuguese to enhance the experience. Tem burracheira? •

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the key west **EEG/Neurofeedback** meeting: new electronic analogs of the psychedelic experience?

Jon A. **Frederick**, M.S.

ALTHOUGH supporting scientific research into psychoactive drugs and plants is the primary mission of MAPS, something of a revolution appears to be happening in the science of electroencephalography and neurofeedback, which I think warrants the attention of the psychedelic community.

Electroencephalography (EEG) is a method of recording the large scale electrical activity of the brain by using electrodes attached to the scalp. Neurofeedback is a method of increasing subconscious awareness and voluntary control over patterns in EEG recordings, by "feeding back" the EEG to the subject through a monitor.

Many neuroscientists are biased against this method because the scalp, skull, and several other layers of tissue provide so much insulation that the EEG has a relatively poor spatial resolution — one generally cannot tell with very much precision where in the brain many EEG signals originate, with the exception of the outermost layers of cortex underlying the electrodes. However, compared to other brain imaging techniques such as magnetic resonance imaging (MRI) or positron emission tomography (PET), the EEG has a very high temporal resolution, allowing one to track changes in brain activity on the scale of milliseconds. This high temporal resolution allows the use of the EEG as a biofeedback device (Olson, 1987).

The most established uses of EEG neurofeedback are for the treatment of epilepsy (Rockstroh et al., 1993) and attention deficit disorder (Lubar, 1995). However, a recent conference in Key West (Feb. 8-13 1996) brought together a number of speakers who claimed that neurofeedback training can effectively treat disorders as diverse as alcoholism, depression, headaches, and sleep disorders. They reported that neurofeedback training (or "neurotherapy") can induce psychotherapeutic insights and altered states of consciousness (abstracts for this meeting can be browsed on the World Wide Web, see Kall, 1996). Many of these reports, however, were based upon uncontrolled clinical studies, and have not yet been published in peer-reviewed journals. I was, nonetheless, convinced that neurofeedback is a powerful tool for altering consciousness, and that, like psychedelic therapy, controlled studies of neurofeedback's therapeutic efficacy should be given a higher priority by government funding agencies.

Like psychedelic research, EEG neurofeedback research has been poorly funded by the NIH. However, since anyone can buy an EEG machine without breaking the law, neurofeedback therapy has progressed significantly in the private sector, outside the halls of academia and established medicine. In fact, some neurofeedback clinicians are so confident that they claim it would be unethical to run control subjects that do not receive neurotherapy. They also claim that the biomedical research establishment is applying a double-standard to their research: requiring extensive double-blind studies, while at the same time providing almost no funding to do this research. Meanwhile, double-blind controlled studies have not been required of a wide variety of procedures in

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The goal of neurotherapy is not to bring about a specific state of functioning, but to improve a patient's ability to make transitions between states.

psychiatry and psychotherapy which are standard practice. This double-standard is similar to the narrow-minded dogmatism that effectively banned human psychedelic research in this country for twenty years (see Strassman, 1991).

The implications of neurofeedback for psychedelic drug research, and of psychedelics for biofeedback, have yet to be adequately recognized, but it is clear that the two therapeutic strategies share a number of common goals and mechanisms, and their combined therapeutic effects could be synergistic.

Dr. Sigfried Othmer, whose clinical institute, EEG Spectrum, has provided neurotherapy to more than 1000 patients, explained, "The fundamental information provided by EEG is where the person is in physiological arousal." For example, specific changes in the EEG are highly correlated with different stages of sleep/wake and dreaming (Kleitman, 1960). By rewarding patients for producing brain wave patterns associated with different states of arousal and attention, Othmer argues, patients can be trained to choose brain states that are more adaptive to the circumstances that arise in their daily lives. A theme repeated by several speakers at the conference was that the goal of neurotherapy is not to bring about a specific state of functioning, but to improve a patient's ability to make transitions between states. This sounds remarkably similar to what Tim Leary suggested as the goal of psychedelic therapy: the development of a transcendent perspective from which it is possible to "dial and tune" states of consciousness (Leary, 1982).

Another exciting development presented at the conference was the use of sound-and-light machines and cranioelectrical stimulators (CES) to "entrain" specific brain frequencies. Some investigators believe that such entrainment devices can induce states of consciousness associated with EEG training "automatically," or that they can speed up the process of learning by EEG neurofeedback (see, e.g., Hutchison, 1991, 1994; however, see Rosenfeld's abstract at Kall's (1996) web site for a contrasting view).

Interestingly, the neuronal system that mediates the effects of neurofeedback training on arousal and attention, the midbrain reticular activating system (RAS), is also involved in the mechanism of action of psychedelic drugs such as LSD. An essential component of the RAS is the serotonin (5-hydroxytryptamine, 5-HT) system, which largely originates from the dorsal and medial raphe nuclei of the midbrain. These serotonin-releasing neurons project axons diffusely throughout the central nervous system, and have been implicated in a variety of behavioral and cognitive functions, including the sleep/wake cycle, attention, and appetite; as well as a number of psychiatric disorders, such as depression, schizophrenia, and OCD (obsessive-compulsive disorder). Psychedelic drugs such as DMT, LSD, and mescaline exert their specific effects by binding to serotonin receptors (of the 5-HT2A subtype) on postsynaptic neurons, those which receive impulses from the midbrain raphe nuclei (Jacobs, 1987; Roth, 1994).

ONE OF THE IMPORTANT effects of 5-HT2A-acting hallucinogens is their disruptive effects on attention. Rats treated with hallucinogens are unable to habituate, or adapt, to a repetitive startling stimulus (such as an air puff or a loud noise), repeatedly jumping as if each repetition were as startling as the first (Geyer and Tapson, 1988). Habituation—the "simplest form of learning"—is essential to the selectivity of attention. As Dr. Mark Geyer said, "If one can't learn what not to pay attention to, the flip side of that is one can't learn to pay attention to anything in particular." (Frederick, 1994.) This defective filtering of irrelevant information— or, to put it another way, this expanded sensitivity to information we ordinarily ignore as irrelevant, could explain a lot of the subjective phenomenology of the psychedelic experience. Geyer and his colleagues at UCSD suggest that this might be the basis of what Aldous Huxley (1963) called "opening the doors of perception." For example, human psychedelic subjects tend to free-associate, reporting a feeling that everything is connected to everything else. In other words, psychedelic drugs suspend the "top-down" cognitive filtering that ordinarily limits the flow of ideas and perceptions to those which fit into our preconceived rational and perceptual categories. Hallucinations, meanwhile, result from deficient filtering (or enhanced sensitivity) within and between sensory modalities. For example, some subjects describe the experience of synesthesia, a crossing over between the senses, or "hearing lights and seeing sounds." It might not be too far

out to speculate that synesthesia is a disruption of attention on a larger scale, such that a subject cannot contain his or her interpretation of a stimulus to only one sensory modality. My own theory is that hallucinations are a synesthesia between conscious and subconscious sensory modalities (Frederick, 1996; see also Cytowic, 1995).

The analogies between neurofeedback and psychedelic research are so pronounced that it surprises me that no one has yet reported trying to do both at the same time. Brain wave technology is getting cheaper, suggesting that neurofeedback experiments might be easy to "piggyback" on to some of the drug studies funded by MAPS. For example, Dr. Thomas Collura's (1996) web site explains how just about anyone can build an EEG from scratch for less than $300. Consider the simple experiment of recording the EEG patterns of subjects under the influence of LSD, MDMA, or ketamine. The logical next step would be to train normal subjects to reproduce these specific brainwave states with neurofeedback and entrainment devices. Quite possibly, these technologies could be used to help replicate particular psychedelic experiences without the use of drugs. This could prove an effective strategy for reinforcing therapeutic achievements in psychedelic patients, or even for introducing the psychedelic experience for the first time— without the possible side effects and legal problems associated with taking drugs.

However, I think both the neurofeedback and human psychedelic research communities are excessively focused on developing clinical applications, at the expense of "basic" science. Indeed, the vast majority of researchers in both fields are practicing clinicians, usually psychologists, psychiatrists, and social workers. Dr. Joe Kamiya, a pioneer and an elder statesman in the neurofeedback field, spoke at Key West about the importance of developing a basic science of consciousness, with biofeedback at it's core. Kamiya believes that the process of scientific discovery is not just about revealing of connections between events in the external world. "My view differs from that of behaviorist connectionism," he said. "I say we are feeding or nurturing innate predispositions... Since DNA and the brain evolve from the universe it is not remarkable that our mathematical reflections about the universe show some correspondence. We learn about nature as a sort of maturation process." He predicted the arrival of a new school of scientists, connecting themselves to brainwave monitors, introspecting, recording their experiences, and developing a new vocabulary of psychology and neurophysiology.

An introspective science of neurophysiology could very well lead to theories of nature that are more parsimonious, predictively powerful, and intuitively obvious than those of extrospective neuroscience (Frederick, 1996). Let us hasten the day when scientists and philosophers will have the intellectual freedom to create such a science, with all of the necessary tools at their disposal. •

Quite possibly, these technologies could be used to help replicate particular psychedelic experiences without the use of drugs.

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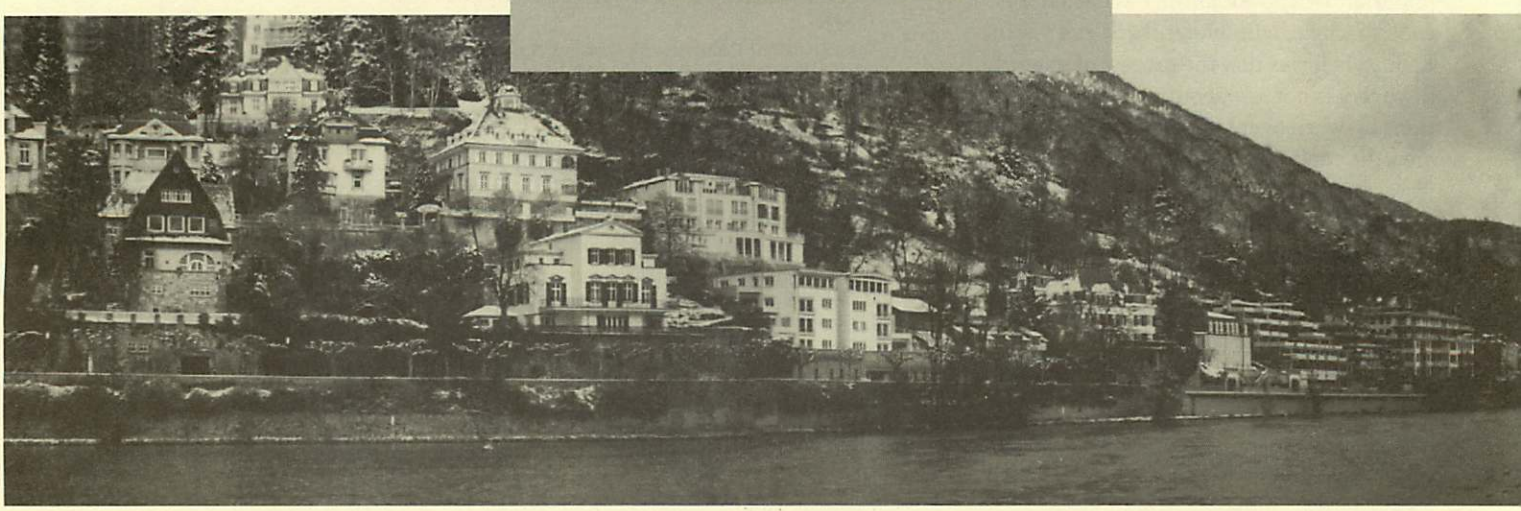
THE EUROPEAN COLLEGE FOR THE STUDY OF CONSCIOUSNESS (ECSC) held its second international conference in Heidelberg, Germany, February 22-25, 1996. The conference, entitled "Worlds of Consciousness," attracted about 40 participants from the United States and about 800 from Europe. Psychedelic and consciousness researchers from around the world converged for a few days to meet and share scientific findings in the shadow of the magnificent ruined Heidelberg castle that dominates the hillside above the city.

worlds of consciousness conference

Rick **Doblin**



Panoramic view of Heidelberg

THE CONFERENCE was opened by the Mayor of Heidelberg. Symposia took place in the city's main conference center and were covered by the local media and the BBC. The first evening's event, featuring Betty Eisner, Roland Fischer, Felicitas Goodman, Albert Hofmann, Hanscarl Leuner, Ralph Metzner and Sasha Shulgin, was open to the public and attracted about 1,200 people. Though the majority of the speakers and participants were primarily interested in psychedelics, there were presentations on a variety of other topics and techniques. In addition to the seminars and lectures, there were musical presentations, an art exhibit, book vendors and a stunning slide show with musical accompaniment that left many in the audience awed.

The conference offered a precious opportunity to evaluate the status of psychedelic research around the world. As always, I was on the lookout for new information so that I could more strategically evaluate how MAPS might direct its limited resources. My priority is to assist the field to move forward toward research into the therapeutic applications of psychedelics and, if good fortune permits, into the subsequent creation of legal contexts for the administration of psychedelics in a supportive environment.

New Opportunities for Research

The first opportunity I saw revolved around the research team led by Dr. Franz Vollenweider at the University of Zürich. Dr. Vollenweider pioneered the use of PET scans to study psychedelic states of mind and has attracted a dedicated and talented group of researchers as well as substantial funding. Dr. Vollenweider's vision for the development of his research is inspiring. In addition to the use of high-tech brain scans to conduct basic science, Dr. Vollenweider would like to branch out into studying the use of psychedelics as catalysts for creativity and into studying their clinical applications.

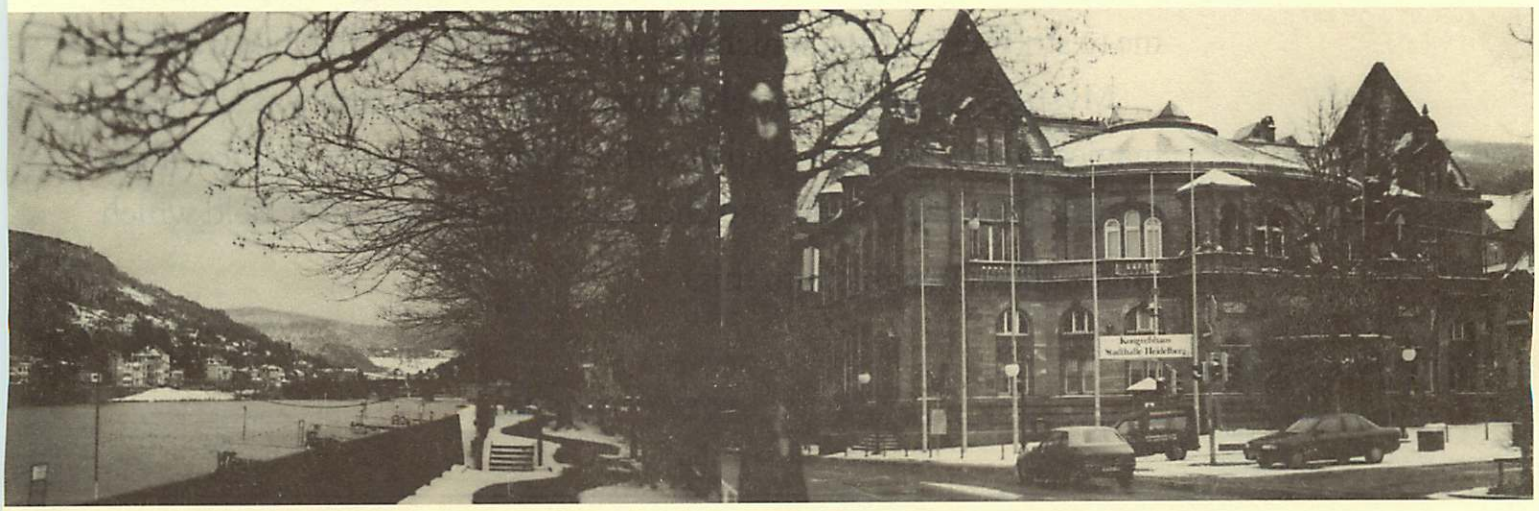
While Dr. Vollenweider is well-funded for his basic science projects, he has yet to raise any funds for clinical trials or for studies into the use of psychedelics to promote creativity. After some thoughtful discussion, MAPS pledged $15,000 to support a study of MDMA in the treatment of Post-Traumatic Stress Disorder (PTSD). The clinical research, to be directed by Truls Baer, M.D., will hopefully be ready to begin in early 1997.

The second opportunity involves the research being conducted by Dr. Leo Hermle in Germany. Dr. Hermle has previously conducted basic physiological research into the effects of mescaline and MDE. At the conference, he expressed an interest in initiating a clinical trial sometime around New Year 1997. In order to cover a few of the basic expenses of the experiment, MAPS pledged $10,000 for Dr. Hermle's clinical trial. The choice of drug and patient population is still to be determined.

The third new opportunity involves the research of Karl Jansen, M.D. of London, England. Dr. Jansen would like to use functional MRI to compare the brains of infrequent MDMA users (1-5 times) with those of heavy users (more than 1,000 times), both before and during one MDMA administration. If this study does take place, it will be the first instance in England in which a researcher is given legal permission to administer MDMA to human subjects. Dr. Jansen has submitted a preliminary grant proposal to MAPS but is still developing his budget. I don't yet know how much it will cost or to what extent MAPS will be able to help but I do know that helping human studies with MDMA to begin in England is one of MAPS' top priorities. MAPS has sent $1,960 to Dr. Jansen for his d-fenfluramine study of MDMA users. (p. 7)

The Heidelberg conference was a rousing success. A great deal of thanks is due to the three conference directors, Dr. Hanscarl Leuner, President of the ECSC, Dr. Adolf Dittrich, and Dr. Rolf Verres, the local Heidelberg host and coordinator, and to Dr. Michael Schlichting, the secretary of the ECSC who handled much of the communication between the conference organizers and the foreign guests.

You can get a taste of what the ECSC conference was like by reading Albert Hofmann's speech, translated from the original German by Jonathan Ott. A book of abstracts from the 1992 ECSC conference is now available for sale. A book of abstracts and papers from this recent conference will be available later in 1996. •



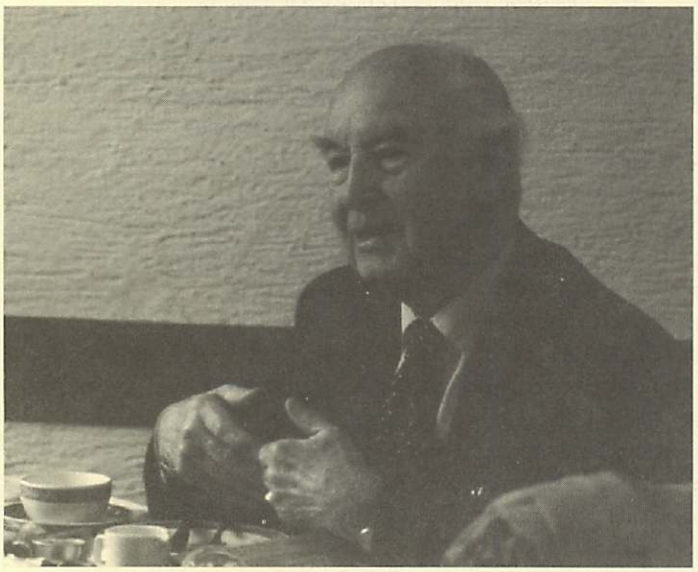
LSD: Completely Personal

LSD Ganz Persönlich

Dr. Albert **Hofmann**

speech delivered to the 1996 Worlds of Consciousness Conference in Heidelberg, Germany

ONE OFTEN ASKS ONESELF what roles planning and chance play in the realization of the most important events in our lives. With respect to a given event, this involves the question, just how much was destiny, how much free will? This question has preoccupied me again and again in relation to one of the most significant and consequential events in my life... in relation to the discovery of LSD.



In order that this event might have occurred, the 'switches' must have been set in quite a specific direction at various points in my life. In deciding on my profession, I had to choose to become a chemist. This decision was not easy for me. I had already taken a Latin matricular exam, and therefore a career in the humanities stood out most prominently in the foreground. Moreover, an artistic career was tempting. In the end, however, it was a problem of theoretical knowledge which induced me to study chemistry, which was a great surprise to all who knew me.

Mystical experiences in childhood, in which Nature was altered in magical ways, had provoked questions concerning the essence of the external, material world, and chemistry was the scientific field which might afford insights into this.

translation by J. Ott

A second, important decision on the fateful path to *LSD* was my choice of jobs. I chose the pharmaceutical-chemical research laboratories of the firm Sandoz ltd. in Basel. What attracted me to this job was the research program undertaken by the laboratory director, Professor Arthur Stoll, on the advice of the famous Nobel Prize winner Professor Richard Willstätter; namely, the isolation and purification of the active principles of well-known medicinal plants, and their chemical modification. Here, chemical research impinged on the life of the plant world, which doubly fascinated me. A further, wholly decisive 'switch-setting' took place, after I had already been occupied for some years with cardioactive medicinal plants like *Digitalis* and Mediterranean squill, when I applied myself to research on ergot, I still quite distinctly recall the deep feeling of fortune in expectation of the adventure of discovery promised by this still little researched field of study. This expectation was later amply fulfilled. Important medicaments derived from that research, whose absence from the medicinal treasury today is unimaginable: *Methergine*,® the standard preparation for stanching of post-partum hemorrhage; *Dihydergot*,® a circulatory stabilizing medicament; *Hydergine*,® a geriatric medicine for treatment of infirmities of old age; and the *psychopharmaka* LSD and psilocybin. It is remarkable how clearly I remember the circumstances under which the idea of synthesizing the substance lysergic acid diethylamide came to me. At the time I did not take my midday meal in the company cafeteria, but instead remained in my laboratory during the midday break, and nourished myself on a slice of bread with honey and butter and a glass of milk, which was delivered fresh every morning from the Sandoz agricultural research farm. I had finished my delicious meal and was pacing back and forth, ruminating on my work. Suddenly there occurred to me the well-known circulatory stimulant *Coramin*,® and the idea and possibility of synthesizing an analogous compound based on lysergic acid, which is the basic building block of ergot alkaloids. Chemically, *Coramin* is nicotinic acid diethylamide, and I analogously planned to synthesize lysergic acid diethylamide. The chemical-structural similarity of these two compounds led me to expect analogous pharmacological properties. With lysergic acid diethylamide I hoped to obtain a novel, improved circulatory stimulant. The first synthesis of *Lysergsäure-diäthylamid,* [or *LSD*, whose acronym derives from the initials of the German name, Trans.] is described in my laboratory notebook under the date 16 November 1938.[1] This substance lysergic acid diethylamide, which has become world-famous under the designation *LSD*, was thus the product of rational planning. Chance first came into play later.

The novel compound came under routine pharmacological investigation in the biological-medicinal laboratory. In the research report, apart from a strong activity on the uterus and the evoking of a certain restlessness in the research animals during the narcosis, no properties were mentioned which might have pointed to a *Coramin*-like effect on circulation. The novel substance lysergic acid diethylamide appeared to be pharmacologically uninteresting, and underwent no further tests.

Yet five years later, once again during a creative midday break, the idea came to me in a strange way, again to synthesize lysergic acid diethylamide for further pharmacological testing. It was no more than a hunch—I liked the chemical structure of the substance—which led me to take this unusual step, since compounds as a rule were never handled again, when once discarded.

During the new repetition of the synthesis of lysergic acid diethylamide, a repetition, so to speak, grounded on a hunch, chance had the opportunity to come into play. At the conclusion of the synthesis, I was overtaken by a very weird state of consciousness, which today one might call 'psychedelic.' Although I was accustomed to scrupulously clean work, a trace of the substance must accidentally have entered my body, probably during the purification *via* recrystallization. In order to test this supposition, I made the first planned self-experiment with *LSD* three days later, on 19 April 1943. It was a horror trip. The details have already been described so many times, that they can be foregone here.

Considered from a personal perspective, the psychedelic effect of lysergic acid diethylamide would not have been discovered without the intervention of chance. Like many tens of thousands of substances annually synthesized and tested in pharmaceutical research, then found to be inactive, the compound might have disappeared into oblivion, and there would have been no history of *LSD*.

However, considering the discovery of *LSD* in the context of other significant discoveries of our time in the medicinal and technical field, one might arrive at the notion that *LSD* did not come into the world accidentally, but was rather evoked in the scope of some higher plan. In the 1940s the tranquilizers were discovered, a

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sensation for psychiatry. These constitute the precise pharmacological antipodes of *LSD*. As indicated by their name, they tranquilize and cover-up psychic problems; while *LSD* reveals them, thus making them accessible to therapeutic treatment. At about the same time nuclear energy became technically usable and the atomic bomb was developed. In comparison to traditional energy sources and weapons, a new dimension of menace and destruction became accessible. This corresponded to the potency-enhancement realized in the field of *psychopharmaka*, something like 1:5000 or 1:10,000-fold, comparing mescaline to *LSD*.

One could make the assumption that this coincidence might not be accidental, but rather was brought on the scene by the 'Spirit of the Age.' From this perspective the discovery of *LSD* could hardly be an accident.

One might reflect on a further idea, that *LSD* might have been predestined by some higher power to arise precisely at the time when the predominance of materialism with all its consequences over the past 100 years was being understood. *LSD* as an enlightening *psychopharmakon* along the path to a new, spiritual age...

All of which could suggest that my decisions on arriving at the guiding 'switch-points' which have led to *LSD*, were not really undertaken through exercise of free will, but rather steered by the subconscious, through which we are all connected with the universal, transpersonal consciousness.

But so much for the fateful aspect of *LSD* history, which has often engaged me mentally... on to another chapter: *LSD*—completely personal. I should like to describe how, through *LSD*, I came directly or indirectly into personal relationship with two of the most important writers of our century, Aldous Huxley and Ernst Jünger, and to explain their views on the significance of psychedelic drugs in our time.

I had read some of the world-famous books by the great English-American writer and philosopher Aldous Huxley; his futuristic vision *Brave New World* [2] and the social novel *Point Counter Point*.[3] Especially meaningful for me were two books appearing in the 1950s, *The Doors of Perception*[4] and *Heaven and Hell*,[5] in which Huxley described his experiences with mescaline. Both books contain fundamental contemplations on the essence of visionary experience and on the meaning of this type of world-view in cultural history. Huxley saw the value of psychedelic drugs in offering the possibility of experiencing extraordinary states of consciousness to people who do not possess the talent for visionary experience, which is the province of mystics, saints and great artists. For him these drugs were keys to allow the opening of new doors of perception; chemical keys beside other, proven but laborious 'door openers' like meditation, solitude, fasting, or certain yoga practices.[6]

Huxley sent me

a copy of this book

with the handwritten entry:

"To Albert Hofmann,

the original discoverer

of the moksha-medicine,

from Aldous Huxley."

I gained a deeper insight and meaningful interpretation of my own *LSD* experiences from these two books by Huxley. I was therefore joyously surprised to receive a telephone call in the laboratory one morning in August 1961: "This is Aldous Huxley." He was passing through Zürich with his wife. He invited me and my wife to lunch in the Hotel Sonnenberg.

A gentleman with a yellow Fresia in his buttonhole, an exalted, nobel appearance with a gentle radiance—thus I recall Aldous Huxley from this first meeting. The table conversation revolved mainly around the question of magic drugs. Both Huxley and his wife Laura also had had experiences with LSD and psilocybin. Huxley did not call either of these substances or mescaline 'drugs,' since 'drug' in English usage, as likewise with Droge in German, possesses a pejorative sense, and because he felt it important semantically to distinguish this type of active substance from other drugs.

Huxley felt there was little sense in experiments with hallucinogens, as the *psychedelica* or entheogens were mostly known at the time, under laboratory conditions, since the surroundings were of crucial importance. He recommended to my wife, when the conversation turned to her Bündnerland mountain home, that she take *LSD* in an alpine meadow, then gaze into the blue corolla of a gentian flower, there to behold the wonder of creation.

As we were taking our leave, Huxley gave me, as a memento of this meeting, a tape of the lecture 'Visionary Experience' which he had delivered the week before at a psychology conference in Copenhagen. In this lecture he discoursed on the essence and meaning of visionary experience and posited just such a world-view as a necessary supplement to the verbal and intellectual comprehension of reality.

During the following year a new, final book by Aldous Huxley appeared, the novel *Island*.[7] In this book he described the attempt, on the utopian island Pala, to fuse science and technical civilization with eastern wisdom into a new culture, in which reason and mysticism are fruitfully united. A magical drug called the *moksha*-medicine, obtained from a mushroom

(*moksha* in Sanskrit means dissolution, liberation), plays an important role in the life of the population of Pala. Its use is restricted to decisive periods of life. Young men on Pala employ it in initiatory rites; it is dispensed in the course of psychotherapeutic dialogue during life crises; and for the dying it facilitates the abandonment of this mortal coil and the passage to another being.

Huxley sent me a copy of this book with the handwritten entry: "To Albert Hofmann, the original discoverer of the *moksha*-medicine, from Aldous Huxley."

In one of the letters which I received from him, dated 29 February 1962, there is a sentence that seems to comprise for me a particularly important admonition: "Essentially this is what must be developed: the art of giving out in love and intelligence what is taken in from vision and the experience of self-transcendence and solidarity with the universe..."

In late summer 1963 I was frequently in the company of Aldous Huxley in Stockholm at the annual meeting of the World Academy of Arts and Sciences. The progress of the negotiations in sessions of the Academy was imprinted by the content and form of his proposals and contributions to discussions. In keeping with the theme on which the conference was based, 'World Resources,' Huxley made the proposal of taking into consideration the subject of 'Human Resources,' the investigation and unfolding of capabilities innate in human beings, but unused. A humankind with highly-developed spiritual capacities, with expanded consciousness of the comprehensive wonder of being, would have to be more capable of observing and recognizing also the biological and material bases for its existence on this Earth. The development and unfolding of the ability sensually to experience reality *directly*, undisguised by words and concepts, would be of evolutionary significance, above all for Occidental humankind with such hypertrophied rationality. Huxley regarded the psychedelic drugs as an aid to training in this direction.

The English psychiatrist Humphry Osmond, who had coined the term *psychedelic* (mind-manifesting), was likewise taking part in the Congress, and supported Huxley with a report on meaningful possibilities of application of the *psychedelica*.

The symposium in Stockholm was my last meeting with Aldous Huxley. His appearance was already marked by his fatal disease, but his spiritual radiance remained undiminished. Aldous Huxley died on the 22nd of November 1963, the same day President Kennedy was assassinated. I received from Mrs. Laura Huxley a copy of her letter to Julian Huxley, in which she reported to her brother-in-law on the final day of her husband's life. The physicians had prepared her for a dramatic end, since in cancer of the esophagus, the terminal phase is usually accompanied by spasms and episodes of suffocation. He expired peacefully and quietly, however.

In the morning, when he was already so weak that he could no longer speak, he had written on a sheet of paper: "*LSD*—try it—intramuscular—100 mcg." Mrs. Huxley understood what he meant by this, and gave him the desired injection—she administered him the *moksha*-medicine.

Mrs. Huxley also sent me a copy of this sheet of paper with the final handwriting expressing the last wish of this great man. Huxley had made personal use of what he had described in *Island*, application of the *moksha*-medicine as an aid to the great transition. His fervent mission on behalf of psychedelic drugs came to be resented, even by the majority of his friends and readers. Some say it cost him the Nobel Prize.

So much for Aldous Huxley... now for my relations with Ernst Jünger...

I read my first book by this author, his diary from the First World War, *In Stahlgewittern*,[8] as required reading in officer's school at the end of the 1920s. The second book by this author, which I acquired later, *Das Abenteuerliche Herz*,[9] was a great surprise for me. How could the same author, who had described with thrilling, naked reality the horror of modern warfare in *In Stahlgewittern*, open the eyes of the reader with his prose, to the enchantment of simple things and the magic of everyday events? I still frequently pick up this book even after 50 years... Therein are descriptions of flowers, of animals, of dreams, of solitary walks; even thoughts on chance, on fortune, on colors and other themes which have a direct relationship to our personal lives. Here our eyes, which have become dulled by everyday habit, are again fully opened, and the omnipresent wonder, that is, the inexplicable, is made manifest in all its blessed, but sometimes even terrifying significance.

This reading often puts me in the mood to reflect on mystical experiences in childhood and on experiences with *LSD* inebriation. Jünger's literary work has become a constant, spiritual companion in my life.

My personal relationship with Ernst Jünger derived from a package of provisions such as one could send to the needy population of Germany

"In the morning, when he was already so weak that he could no longer speak, he had written on a sheet of paper: "LSD—try it—intramuscular—100 mcg."

after the war. The acknowledgement in July 1947 of one such package constituted the commencement of a correspondence continuing to this day.

At first the topic of this was not drugs. In order to explain how *LSD* came into play, I must speak of my first self-experiments with this substance. Shortly after my first planned self-experiment with *LSD* in April 1943, which led to the discovery of its fantastic psychic activity, the first clinical investigations with *LSD* on voluntary subjects were conducted by coworkers in the medicinal-biological department [of Sandoz, Trans.]. The frequently multi-year-long toxicological tests which today must precede the investigation of a substance in human beings were foregone. After all, I had already withstood quite a strong dose without damage. Doses employed here corresponded to only a fifth or a tenth of the quantity employed in my pioneering experiment, that is, to 0.05 or 0.025 milligrams.

Understandably I myself participated in this research, which was conducted between work in the laboratory. Thus I experienced quite drastically, what a crucial meaning the external setting, the environment, had for psychedelic experiments. In alterations of consciousness induced by *LSD* I experienced directly the coldness and unpleasantness of the technical world surrounding me, and my colleagues in their white laboratory coats appeared to pursue a meaningless occupation; the apparatus and equipment had a diabolical aspect, like little monsters from the pictures of Hieronymus Bosch. Thereby an other, strange, dream-like world intruded upon me from within. The interruptions for the psychological tests, with which we sought to give such research a scientific character, were perceived as downright tormenting. I realized that one completely missed the meaning and essence of psychedelic experiences in such an external setting.

I longed further to pursue the investigation of the properties of *LSD* in a musical atmosphere, in lovely surroundings and in stimulating company. I thought at once of Ernst Jünger. From our correspondence I knew that he had already experimented with mescaline. He immediately agreed to my suggestion that we conduct an *LSD* experiment together.

The great adventure took place at the beginning of February 1951. In order to have medical assistance at hand in the event it were needed, I asked my friend and colleague, the pharmacologist Professor Heribert Konzett, to participate in our undertaking. The trip took place at ten o'clock in the morning in the living room of the house we had at the time in Bottmingen near Basel.

Since the reaction of such a highly sensitive man as Ernst Jünger was not predictable, a low dose was employed as a precautionary measure for this first experiment, only 0.05 milligrams. The experiment thus did not lead into great depths.

The initial phase was characterized by an intensification of aesthetic experience. The red-violet roses which adorned the room, adopted an undreamed of luminous power and radiated in portentous splendor. The concerto for flute and harp by Mozart was perceived in all its celestial glory as heavenly music. In mutual astonishment we beheld the smoky haze which arose with the ease of thought from a Japanese incense stick.

As the inebriation became deeper and the conversation lapsed, fantastic reveries overtook us, as we lounged with closed eyes in our armchairs. Jünger enjoyed the colored splendor of Oriental pictures; I was on a voyage with Berber tribes in North Africa, saw parti-colored caravans and lush oases. Konzett, whose features seemed transfigured Buddha-like, experienced a breath of timelessness, freedom from the past and the future, the blessing of being completely in the here and now.

This excursion was marked by the commonality and parallelness of our experiences, which we all perceived as deeply blessed. We had all three approached the portal to a mystical state of being; but the door had not opened. The dose selected had been too low. Misunderstanding this reason, Ernst Jünger, who had been thrust into deeper domains with a high dose of mescaline, opined that: "Compared with the tiger mescaline, your *LSD* is really only a house cat." He revised this opinion after further experiences with higher doses of *LSD*.

Ernst Jünger, who had been thrust into deeper domains with a high dose of mescaline, opined that:

"Compared with the tiger mescaline, your LSD is really only a house cat..."

The above-mentioned spectacle with the incense stick has been treated in a literary fashion by Jünger in his story *Besuch auf Godenholm*,[10] in which he also plays with deeper experiences of drug inebriation. During the following years, I visited Ernst Jünger often in Wilflingen, whence he had moved from Ravensburg, or we met in Switzerland, at my home in Bottmingen or in Bündnerland. Our relationship became closer through the shared *LSD* experience. In our conversations and

correspondence, drugs and questions connected with them formed a main theme, without at first having proceeded again to practical experimentation.

Here I should like to cite two short extracts from our correspondence of that time. In my letter of 16 December 1961 I had allowed: "A further disquieting thought which follows from the ability to influence the highest spiritual functions (consciousness) with minimal traces of a substance, involves free will. Highly potent psychotropic substances like LSD and psilocybin possess in their chemical structures a very close relationship to natural bodily substances which occur in the brain and play an important role in the regulation of its functions. It is thus thinkable, that through some such disturbance in metabolism a compound of the type of LSD or psilocybin is formed in place of a normal neurotransmitter, which can alter and determine the character, the personality, its worldview and its actions. A trace of a substance, whose occurrence or non-occurrence in our bodies we cannot control with our wills, is capable of determining our fate. Such biochemical considerations might have led to the sentence written by Gottfried Benn in his essay Provoziertes Leben:[11] "God is a substance, a drug!"

Standing out above all in the reply from Ernst Jünger, in his letter of 27 December 1961, is: "...insinuates that we are beginning to develop procedures in biology, just like those in the field of physics, that can no longer be conceived of as progress in the established sense, but which rather intervene in evolution and lead beyond the development of the species... I suspect that this is a new era, that begins to work on the evolution of types. Our science with its theories and inventions is thereby not the cause, but rather one of the consequences of evolution... Wine has already altered much, has brought with it new gods and a new humanity. But wine stands in relation to the new substances like *LSD*, as classical to modern physics. These substances should be tried only in small groups. I cannot agree with the idea of Huxley's, that hereby the masses can be given possibilities for transcendence. This does not involve comforting fictions, but rather realities, if we take the matter seriously, and few contacts suffice to lay roads and connections."

...He revised this opinion after further experiences with higher doses of LSD.

Jünger here advocates the opinion that a new consciousness cannot be expanded through mass consumption of *psychedelica*, this must rather happen to an elite. We have since complemented such theoretical discussions on magical drugs with practical experiments.

One such, which served for the comparison of LSD with psilocybin, took place in the spring of 1962. The following session happened in the Jüngers' house, in the erstwhile forester's home of the Stauffenberg's castle in Wilflingen. Besides my above-mentioned friend, the pharmacologist Heribert Konzett, the Islamic scholar Rudolf Gelpke likewise took part in this psilocybin symposium. Gelpke had already made experiments with LSD and psilocybin obtained directly from Sandoz, which have been described under the title On Travels in the Universe of the Soul.[12]

It was mentioned in the ancient chronicles how the Aztecs drank *cacáhuatl* or chocolate before they ate *teonanácatl*. In harmony with this, Mrs. Liselotte Jünger likewise served us hot chocolate. Then she abandoned the four psychonauts[13] to their fate.

We were gathered in a massive living room with a dark wooden floor, white tile stove and period furniture. On the walls hung old French engravings, on the table stood a magnificent bouquet of tulips. Jünger wore a long, broad, dark-blue-striped kaftan-like garment which he had brought from Egypt; Konzett was resplendent in a parti-colored Mandarin gown; Gelpke and I had put on housecoats. The everyday should also be set aside even in the external sense.

Shortly before sundown we took the drug, not the mushrooms but rather their active principle, 20 mg of psilocybin each. This corresponded to some two-thirds of the very strong dose which the famous *curandera* María Sabina was accustomed to take in the form of *Psilocybe* mushrooms.

After an hour I still felt only a slight effect, while my fellows were already deeply into the trip. I had the hope that in the mushroom inebriation it would be possible for me to allow again to become vivid certain images from moments in my childhood, which remained with me as blessed events in my memory: the meadow of flowers lightly stirred by the early summer wind; the rosebush after the thunderstorm in the evening light; or the blue irises over the vineyard wall... However I did not succeed with this willfully directed imagination. When the mushroom principle finally began to work, in place of these luminous images from my home

country, weird scenery emerged. Half-stunned I sank ever deeper, passed through moribund cities with a Mexican character, of exotic, though deathly splendor. Terrified, I sought to hold myself on the surfaces, to concentrate consciously on the exterior world. I succeeded in this once in a while. Then I saw Jünger colossal, pacing back and forth across the room; an enormous, mighty magician. Konzett in his silky, glistening house coat appeared to me to be a dangerous Chinese clown. Even Gelpke seemed eerie to me, long, thin, mysterious... The deeper I sank into the inebriation, the stranger everything became. The cities I traversed when I closed my eyes lay in a morbid light, weird, cold, senseless, empty of humanity. When I opened my eyes and sought to fasten myself onto the external world, even the surroundings seemed to me to be senseless, spectral. The total void threatened to plunge me into absolute nothingness. I remember how I grasped ahold of Gelpke's arm and held him to me when he passed by my chair, in order not to sink into dark nothingness. Fear of death seized me, and an endless yearning to return to the living creation, to the reality of the human world.

At last I came back to the room. I saw and heard the great magician lecture uninterruptedly with a loud voice, reporting on Schopenhauer, Kant, Hegel and the old Gæa, the little mother. Gelpke and Konzett were already back on the Earth, on which I again set foot wearily.

It was past midnight, when we sat together at the table which the woman of the house had set on the upper floor. We celebrated our return with a sumptuous repast and Mozart's music. The conversation about our experiences lasted well into the morning.

The above-described research protocol was included in my *LSD* book, *LSD—My Problem Child*,[14] published by Klett-Cotta in 1979 and reprinted in 1993, as a 50th anniversary celebration, in a DTV pocket book. Ernst Jünger has described this symposium from his vantage point in his 1970 Klett book, *Annäherungen—Drogen und Rausch*.[15] The mushroom substance had conducted the four of us, not to the luminous heights, but to deeper regions.

Both are part of our existence. Only when we are conversant with both, heaven and hell, is our life full and rich; and it is fuller and richer the more deeply we experience both. The psychedelic experience can lead us to the deepest depths and the highest heights, to the boundaries of that which humankind is capable of experiencing. Jünger gave his book on drugs and inebriation the title *Approaches*, approaches even to these boundaries, and he has also described himself as a 'boundary walker' [*Grenzgänger*].[16] He has repeatedly approached both boundaries: proximity to death in battle in the hell of modern warfare, and the ecstasy of the most exalted delight and love in the perception of the wonder and the beauty of creation.

In conclusion, just a small anecdote that connects me with Ernst Jünger and *LSD*. Jünger told me that a stranger once called him in the middle of the night and told him that now he finally knew what *LSD* meant. *LSD* means: love seeks you [*Liebe sucht dich*]. •

Only when we are conversant with both, heaven and hell, is our life full and rich; and it is fuller and richer the more deeply we experience both.

References and Translator's Notes

[1] Although in 1993 there were extensive celebrations of the 50th anniversary of LSD, this was actually the 55th anniversary of its synthesis, and on 16 November 1998 we ought celebrate the 60th anniversary of its discovery. –Trans.

[2] Huxley, A. (1932). *Brave New World*. New York: Harper.

[3] Huxley, A. (1930). *Point Counter Point*. New York: Harper.

[4] Huxley, A. (1954). *The doors of Perception*. New York: Harper.

[5] Huxley, A. (1955). *Heaven and Hell*. London: Chatto and Windus.

[6] Whereas Huxley seemed to think the chemical keys to religious experiences were somehow inferior, citing De Félice who called them 'inferior forms of mysticism,' the advancement in entheobotanical research since Huxley's day has put the shoe on the other foot. The work of Wasson, La Barre, Furst and others has shown clearly that modern religions derived from shamanism, whose essence is visionary experience primordially catalyzed by entheogenic plants. That entheogenic drugs evoke genuine religious experiences is beyond doubt, since the religions themselves derived from this. It is rather incumbent on proponents of artifcial routes to ecstasy such as meditation and yoga to demonstrate that these techniques can evoke genuine religious experiences. –Trans.

[7] Huxley, A. (1962). *Island*. New York: Harper.

[8] Jünger, E. (1920). *In Stahlgewittern*. Self-published.

[9] Jünger, E. (1930). *Das abenteuerliche Herz*. Berlin: Mittler.

[10] Jünger, E. (1952). *Besuch auf Godenholm*. Frankfurt: Klostermann.

[11] Benn, G. (1949). Provoziertes Leben. In: Ausdruckswelt, Essays und Aphorismen. Wiesbaden, Limes Verlag. Translated by Ralph Metzner (1963). Provoked life. *Psychedelic Review* 1: 47–54.

[12] Gelpke, R. (1962). Von Fahrten in den Weltraum der Seele: Berichte über Selbstversuche mit Delysid (LSD) und Psilocybin (cy). Antaios 3(5): 393–411. Translated by Jonathan Ott (1981). On travels in the universe of the soul: Reports on self-experiments with Delysid (LSD) and psilocybin (cy). *Journal of Psychoactive Drugs* 13(1): 81–89.

[13] The term psychonaut was coined in 1970 by Ernst Jünger to describe psychic voyagers who use entheogens as their vehicles. See: 15 below. –Trans.

[14] Hofmann, A. (1979). *LSD—Mein Sorgenkind*. Stuttgart: Klett-Cotta. Translated by Jonathan Ott (1980). *LSD—My problem child*. New York: McGraw-Hill; (1985). Los Angeles: Jeremy Tarcher.

[15] Jünger, E. (1970). *Annäherungen—Drogen und Rausch*. Stuttgart: E. Klett Verlag.

[16] Jünger, E. (1966). *Grenzgänge: Essays, Reden, Träume*. Stuttgart: E. Klett Verlag.

THE HOFMANN REPORT

Throughout history people have used mind expanding substances to explore consciousness and enhance their lives. Our purpose at the Albert Hofmann Foundation is to gather the records of these endeavors and to further the understanding and responsible application of psychedelic substances in the investigation of both individual and collective consciousness.

CHANGES AT THE FOUNDATION

There has been considerable activity since the first issue of the *Hofmann Report.* Several new associates have been appointed to the Board of Directors, and a new slate of officers elected for the coming year. A fresh band of friends and volunteers have appeared to help revitalize the organization. Here is a statement from our new President, Ron Brettin:

I have been asked by our Board of Directors to become President of the Albert Hofmann Foundation. I am greatly honored by this appointment, and wish to thank the Board for their confidence in my abilities. Voted in as new officers are Kathy Delaney, Vice President, and Myron Stolaroff, Secretary. New Board members include Kathy, Robit Hairman and Don Wylie. All other board members were reelected for another term.

Kathy has been an able volunteer for several years, unselfishly helping with a variety of tasks required of a non-profit organization. She has also contributed valuable thought and analysis to the Foundation's organizational and administrative structure, all of which have been of great benefit. We look forward to her continued contributions and support.

Robit Hairman is an interactive multimedia designer/producer and has advanced skills in computer technology. We are confident in his abilities and have asked him to establish the Albert Hofmann Foundation Web Site for the Internet. He will also be responsible for on-going maintenance, posting of newsworthy information, and providing networking links on the "Net."

Don Wylie is an attorney with excellent credentials and experience, thoroughly committed to the objectives of the Foundation. His legal expertise will be most valuable.

I want to pay special thanks to Michael Gilbert, retiring Albert Hofmann Foundation President. Through his strong leadership, business sense and professional style, we emerged from a troubled financial position and created new confidence in our mission and direction. Michael's insight united the Foundation in establishing important and achievable goals. On behalf of our Foundation, thank you Michael.

With the energy we now have in motion and the never-tiring interest from the psychedelic community, we shall continue with our mission as originally envisioned by Oscar Janiger and supported whole-heartedly by Dr. Albert Hofmann. Thank you all for your continued faith and support.

Ron Brettin, President

In forthcoming issues of *The Hofmann Report*, we plan to introduce you to members of our Advisory Board, an outstanding group that has greatly contributed to the advancement of understanding psychedelics and their application. In this issue, we feature a key Advisor and the person for whom our foundation is named, Dr. Albert Hofmann.

Dr. Albert Hofmann, Ph.D., Dr. Pharm.(Hon.), Dr. Sc.Nat.(Hon.), Head of the Pharmaceutical-Chemical Research Laboratories, Division of Natural Products (Retired), Sandoz, Ltd., Basel, Switzerland, Member of the Nobel Prize Committee, Fellow of the World Academy of Sciences, Member of the International Society of Plant Research and the American Society of Pharmacognosy, is probably best known throughout the world as the creator of LSD. It is because of this discovery and the important impact it has made upon the world that our Foundation is proud to bear his name.

In the history of science, it is possible to pick out single, key events that have enormously influenced the progress of civilization. Certainly Dr. Hofmann's discovery of LSD is one of these. This discovery has made an impact upon many thousands of lives, making possible realizations and comprehensive understanding of the true nature of reality that had previously been the privilege of only a few, dedicated souls. This discovery has permitted the honest, earnest seeker to stand on the very pinnacle of human spiritual experience. If the most important task for a human being is to achieve his/her ultimate fulfillment, then LSD and similar psychoactive substances are a true blessing to help the individual achieve such realization.

It is interesting to speculate on the emergence of such a discovery within the framework of human evolution. Alexander Shulgin, another of our eminent advisors, in an address to a conference on Entheogens at Santa Barbara, California in 1983, commented that our psyches and the universe have a tendency to stay in balance, and speculated on the fact that the discovery of the effects of LSD in 1943 coincided with the most massive war in history. This view is repeated by Dr. Hofmann himself: "The existence of LSD was even regarded by the drug enthusiasts as a predestined coincidence — it had to be discovered precisely at this time in order to bring help to people suffering under the modern conditions (page 58, *LSD — My Problem Child*)." Carl Jung, the eminent Swiss psychiatrist, might have noted the synchronicity of the early childhood mystical experiences of Dr. Hofmann with his inspiration to become a chemist and pursue the investigations of ergot compounds that led to the discovery of LSD.

In his autobiography, *LSD — My Problem Child*, Dr. Hofmann reports an early childhood experience:

> As I strolled through the freshly greened woods filled with bird song and lit up by the morning sun, all at once everything appeared in an uncommonly clear light. Was this something I had simply failed to notice before? Was I suddenly discovering the spring forest as it actually looked? It shone with the most beautiful radiance, speaking to the heart, as though it wanted to encompass me in its majesty. I was filled with an indescribable sensation of joy, oneness, and blissful security...
>
> While still a child, I experienced several more of these deeply euphoric moments on my rambles through forest and meadow. It was these experiences that shaped the main outlines of my world view and convinced me of the existence of a miraculous, powerful, unfathomable reality that was hidden from everyday sight...
>
> Because I wanted to gain insight into the structure and essence of matter, I became a research chemist. Intrigued by the plant world since early childhood, I chose to specialize in research on the constituents of medicinal plants. In the course of this career I was led to the psychoactive, hallucination-causing substances, which under certain conditions can evoke visionary states similar to the spontaneous experiences just described.

After completing his chemical studies, Dr. Hofmann chose a position in the pharmaceutical-chemical

research laboratory of Sandoz Company in Basel, Switzerland, where he could pursue his interest in studying the medicinal potential of plants. This eventually led to the study of the alkaloids of ergot. A systematic study of the latter led to many interesting new discoveries, some with valuable medical applications, such as Hydergine, a medicament for improvement of peripheral circulation and cerebral function, applied in the control of geriatric disorders and as a "smart pill." Another product was Dihydergot, a circulation and blood pressure stabilizing medicament. Eventually the studies led to the compounding of LSD, and the famous bicycle ride in April 1943. The potential of LSD rapidly became apparent.

Sandoz, as well as Dr. Hofmann personally, hoped to see the new discovery become a valuable tool in neurological research and in psychiatric applications. Much to the chagrin of all, some of the more dramatic properties of LSD became widely known and an enormous lay interest developed. In Dr. Hofmann's words, "the joy at having fathered LSD was tarnished after more than ten years of uninterrupted scientific research and medicinal use when LSD was swept up in the huge wave of an inebriant mania that began to spread over the Western world, above all the United States, at the end of the 1950s."

By 1965, Dr. Hofmann was well aware of the potential of LSD to be of considerable aid in psychotherapy, and particularly under appropriate conditions to reveal the mystical aspects of human nature. Such a tool was sorely needed to counter what he felt were the deep-seated sociological causes of public interest: "materialism, alienation from nature through industrialization and increasing urbanization, lack of satisfaction in professional employment in a mechanized, lifeless working world, ennui and purposelessness in wealthy, saturated society, and lack of a religious, nurturing, and meaningful philosophical foundation of life." Dr. Hofmann's "tarnished joy" is no doubt an extremely mild statement of the deep disappointment and chagrin he felt at having a most valuable discovery reach the point where his company deemed it necessary to remove it from distribution.

But despite the promulgation of laws throughout the world making possession of practically all psychedelics illegal, many thousands were able to discover the remarkable benefits that could be obtained through informed use. Such benefits included furthering human understanding and revealing avenues for correcting many of the woes of the world.

It is not always possible in the throes of a movement to understand its true evaluation. The so-called abuse may have been the inevitable demand on the part of human psyches everywhere to break the bonds of restricted habits and thinking, to free powerful, repressed internal feelings, to demand inner expression, and rebel against the dishonesty and self-centeredness predominant in the world. It may turn out, as I personally believe, that exposures of the inner psyche, even under adverse and unintelligent conditions, might have some ultimately useful impact — that in time such exposures will be assimilated and yield a more balanced and intelligent approach to life. But in any event, Dr. Hofmann himself directs us to procedures for maximizing human realization.

In his book, *Insight Outlook*, he shares his personal philosophical views that stem from his childhood natural mystical experiences and their subsequent confirmation through scientific exploration and analysis. In order to understand the true nature of reality, it is necessary to examine the earliest beginnings, the source of life itself. This boils down to the origin of the single, primeval cell. "This is where we must face the question whether the creation of the primeval cell is based on a coincidence, with a great number of molecules drifting together and combining into a highly organized cell structure, or whether the cell was created according to a plan... It seems unimaginable that such a complicated, highly structured and organized entity as a cell could have been created by random chance. It appears obvious... that the primeval cell was following a plan at its conception. And the primeval cell, for its part, also contains a plan, the plan to reproduce itself, the actual characteristics of life. A plan embodies an idea, an idea in spirit (page 18)."

To bolster his argument, Dr. Hofmann gives the example of a cathedral:

"Let us suppose that all the construction material for the building of a cathedral, including the technical appliances and the necessary energy, were readily available at some location. Without the idea of an architect, without his plans and instructions, the cathedral would never be erected. This kind of consideration must be just as valid for the creation of atoms for living cells as they are far more complicated and ingenious structures than a cathedral (pages 19-20)."

"It is essential to recognize that the one-sided belief in the natural scientific view of life is based on a momentous error. Certainly, everything it contains is true, but this only represents half of reality; only its material, quantifiable part. All of the spiritual dimensions that cannot be described in physical or chemical terms, which include the most important characteristics of that which is living, are absent (page 40)."

"The goal is not to deny the validity of the natural scientific view of life and to downplay the value of the measuring sciences. We are only talking about recognizing their titanic myopia (page 41)."

Dr. Hofmann explains how he employed chemistry to arrive at important understandings. "In the above I have tried to show that, from the standpoint of a chemist, the insights of natural scientific research need not lead to a materialistic view of life. Quite the opposite is true: if they are contemplated and understood correctly, they invariably point to an altogether inexplicable, spiritual primordial basis of creation, to the miracle, the mystery — in the microcosms of the atom, the macrocosms of a spiral nebula, in the seed of a plant, in the body and spirit of a human — to the divine (page 53)."

"By observing natural scientific discoveries through a perception deepened by meditation, we can develop a new awareness of reality. This awareness could become the bedrock of a spirituality that is not based on the dogmas of a given religion, but on insights into a higher and deeper meaning. I am referring to the ability to recognize, to read, and to understand the firsthand revelations 'in the book written by the finger of God,' as Paracelsus designated creation." Such observations make possible "revelations of the metaphysical blueprint of creation. They reveal the unity of all things living in a common spiritual primordial basis (pages 53-54)." If such insights "were to enter into our collective consciousness, the result would be that natural scientific research and the hitherto destroyers of nature, technology and industry, would be applied to transform our world back into what it once was — into an earthly Garden of Eden (page 56)."

Dr. Hofmann on January 11, 1996, celebrated his 90th birthday. He appeared as a speaker at the recent European Conference for the Study of Consciousness in Heidelberg (see page 46). Several of our American advisors attended the conference, and report that he is in great spirits, looks remarkably well and content, exudes good health and an excellent sense of presence. They even brought home the photographs to prove it! At this point in time, we live in a world in ignorance and confusion where Dr. Hofmann's remarkable discovery is not comprehended. Even prominent American psychiatrists label psychedelics as only harmful and toxic. We at the Albert Hofmann Foundation are committed to educational programs that will correct these erroneous views. We hope that all of you who have benefited from such substances and understand their potential, will join us in bringing appropriate understanding into the world. Only in this way will the doors to research and developing effective applications come open. If our efforts are successful, it may even be possible one day to engage in high forms of religious worship without breaking the law.

Myron Stolaroff, Editor

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heffter research institute **update**

Dr. David **Nichols**

Heffter Research Institute
Research at the Frontiers of the Mind

IN THE NEARLY THREE YEARS since our incorporation, the board members have discovered how much work is involved in trying to set up a research institute from scratch! We have made a good deal of progress, but things always seem to go more slowly than you hoped they would. We now have a home page on the web (http://www. heffter.org) that gives everyone access to information about the Heffter Institute. Our targeted research projects can be found there, along with other literature we've put together.

We have had several informational receptions for interested folks, and have been able to introduce ourselves at a number of meetings, including the recent Worlds of Consciousness conference in Heidelberg. More and more people are hearing about us. We have developed a very impressive scientific advisory panel, that includes a number of world famous scientists. Many others with specific types of expertise have offered to serve as special consultants. This summer we hope to put together the first edition of a psychedelic review journal. Numerous volunteers have come forward willing to help with things like artwork, grass-roots solicitations, desktop publishing, mailing, etc., and of course we've enjoyed the support of MAPS and the Hofmann Foundation. Many people are poised to jump on board and help as soon as the ship is ready to sail!

We are now wrestling with the concept of major fund-raising.

The educational mission

Because lots of people have now heard of us, many of whom have visited our web site, we've been fielding many questions related to psychedelic drugs. In a real sense, many on the board have become resource contacts for people who want answers but don't know where to get them. The Heffter Board considers public education to be one of our important missions, and it is satisfying, if time consuming, to be able to help in this way.

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Fund-raising challenges

We are now wrestling with the concept of major fund-raising. How does a small group of scientists raise a few million dollars? The answer is, we're not sure, and no one else seems to know either! For the present we've been "networking" and spreading the word of our mission and our needs. I think we've all been secretly hoping that a major donor would suddenly emerge, but alas that isn't what happens in real life. We do need to make sure our message gets out so that the right people are aware of us. We are indebted to MAPS for allowing us to use their newsletter as a vehicle to help with that need. Nevertheless, if you know someone who is in a position to make a significant contribution to our mission of research with psychedelics, but you've been hesitant until now to recommend us, I think our "fledgling" period has passed. We may not yet have much in resources, but all the other pieces are in place and we are ready to move. We have even been offered the services of an architect to help design the building!

We do have a public service educational mission, and since we founded the Heffter Institute I am sure that more people are familiar with the name Arthur Heffter than have been at any time in the recent past. When we chose to name the institute after Dr. Heffter, we knew very little about him other than his role in the discovery of mescaline. Once we had a more complete biographical sketch of him, however, he proved to be a superb choice. What I would like to share with you in the remainder of this article is a shortened form of Dr. Heffter's biography. This version is adapted from the one in our printed Institute brochure; the complete biography is posted at our home page on the world wide web. We all owe Dr. Arthur Heffter a debt of gratitude for his very early work.

The Institute's namesake: Dr. Heffter

Dr. Arthur Heffter (1859-1925) was a brilliant scientist who lived during the classical period of pharmacology. His training, a Ph.D. in chemistry, an M.D. degree, and a Ph.D. in pharmacology, was no small accomplishment in

Heffter's particular importance to our Institute was his discovery, published in 1897, that mescaline was the psychedelic component in the peyote cactus, *Lophophora williamsii*.

any age! His particular importance to our Institute was his discovery, published in 1897, that mescaline was the psychedelic component in the peyote cactus, *Lophophora williamsii*. This feat required not only careful science, but also some courageous self-experiments. That particular study has been characterized as among the best pharmacological work produced up to that time!

On the other hand, the sheer number and importance of all the things he did dwarf any single accomplishment. He extensively studied metabolism, toxicology, and natural products and published widely. He was highly respected as a public health expert, and much sought after for his opinions and ideas. He was interested in industrial hygiene and public health and studied the absorption, distribution, metabolism, and excretion of iodine, lithium, mercury, quinine, and arsenic, to name but a few. Indeed, it was he who discovered that arsenic could be detected in hair, and developed the forensic analysis through which one could show whether someone had been poisoned with arsenic!

Heffter held the chair of Pharmacology at the University of Berlin from 1908 until 1925, the most prestigious position in the whole German empire, was elected Dean of the Medical Faculty there in 1915 and was then made Rector of the University of Berlin in 1922. In the United States, this would be equivalent to being a University President, and in Germany this was a powerful and prestigious appointment. Dr. Heffter was the first chairman of the German Society of Pharmacologists, and was later responsible for formulating a plan to publish the *Handbook of Experimental Pharmacology*. This book, published after his death, summarized everything that was known in pharmacology at that time. The series continues to be published up to the present. Indeed, 1997 will mark the publication of a volume in the series dedicated entirely to serotonin, including chapters focused on the effects of hallucinogens on brain serotonin systems. This seems a fitting tribute on the 100th anniversary of the publication of the discovery of mescaline!

From a personal perspective, Arthur Heffter was a kind and gentle man, and was also very modest. He was much admired by his students, and as one of them remarked, "He did not throw his weight around to impress others." He had a particular love for music, and those close to him found him warm and endearing. We believe it most fitting that our institute is named in honor of this brilliant, yet humble and kind human being, Dr. Heffter, and are pleased that we are also able to provide some long-delayed recognition of his considerable achievements in science and toxicology. •

waterpipe study

Dale **Gieringer**, Ph.D.

CONTRARY to popular impression, waterpipes don't necessarily protect smokers from harmful tars in marijuana smoke, according to a new study sponsored by MAPS and California NORML (National Organization for the Reform of Marijuana Laws). The reason is that waterpipes filter out more psychoactive THC than they do other tars, thereby requiring users to smoke more to reach their desired effect. The study does not rule out the possibility that waterpipes could have other benefits, such as filtering out gases, but it suggests that other methods, such as the use of high potency marijuana, vaporizers, or oral ingestion are needed to avoid harmful toxins in marijuana smoke.

A major aim of the study was to determine the efficacy of various smoking devices at reducing the concentration of tars relative to cannabinoids.

Seven Devices Tested

The study, which was supported by the Drug Policy Foundation and private donors, was conducted at a research lab with expertise in the analysis of various chemical properties of tobacco and marijuana. Researchers tested the smoke from seven different sources: a regular rolled joint, a joint with a cigarette filter, three different waterpipes, and two vaporizers, designed to heat marijuana to a temperature where psychoactive vapors form without producing smoke. The waterpipes included a standard bong (Picture #1), a small portable device with a folding pipestem (Picture #6), and a battery-operated model with a motorized paddle to thoroughly mix the smoke in the water (Picture #3). The first vaporizer (Picture #5), commercially produced in Canada, consisted of a battery-powered metal hot plate inside a jar to trap the marijuana vapor. The second (Picture #4) was a homemade, hybrid apparatus, in which vapors were produced by a hot air gun and then drawn through a beaker of water, thereby combining vaporization with water filtration. The smoke was produced from standard NIDA-supplied marijuana drawn through a smoking machine adjusted to mimic the puff length of marijuana smokers.

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Focus: Cannabinoid/Tar Ratio

The study focused on two key components of the smoke: (1) total solid particulates, or tars, which are noxious waste by-products of burning leaf like those from tobacco; and (2) cannabinoids, the chemicals distinctive to marijuana, including its major psychoactive ingredient, delta-9-tetrahydrocannabinol (THC), and its two most common chemical relatives, cannabinol (CBN) and cannabidiol (CBD), which are only weakly psychoactive but may have medical benefits.

Like tobacco, marijuana tars are rich in carcinogenic compounds known as polycyclic aromatic hydrocarbons, which are a prime culprit in smoking-related cancers. However, cannabinoids themselves are not carcinogenic. An obvious way to protect smokers' health is therefore to minimize the content of smoke tars relative to cannabinoids.

One way to do this is to increase the THC potency of the marijuana. Assuming smokers adjust their smoke intake to the cannabinoid dosage, the higher the concentration of cannabinoids, the lower the amount of tars they are

likely to consume.

Another strategy is to try to reduce the tars in the smoke with some kind of filtering device. Obviously, this is beneficial only to the extent that THC isn't also reduced, thereby inducing users to smoke more to compensate. A major aim of the study was to determine the efficacy of various smoking devices at reducing the concentration of tars relative to cannabinoids. The performance of each device was accordingly rated in terms of the cannabinoid-to-tar ratio in its smokestream.

Joints and Waterpipes

Surprisingly, the unfiltered joint outperformed all devices except the vaporizers, with a ratio of about 1 part cannabinoids to 13 parts tar. This disturbingly poor ratio may be explained by the low potency of the NIDA-supplied marijuana used in the study, which was around 2.3%.

Disappointingly, waterpipes performed uniformly worse than the unfiltered joint. The least bad waterpipe, the bong, produced 30% more tar per cannabinoids than the unfiltered joint. Ironically, the pipe with the electric mixer scored by far the worst of any device. This suggests that water filtration is actually counterproductive, apparently because water tends to absorb THC more readily than noxious tars.

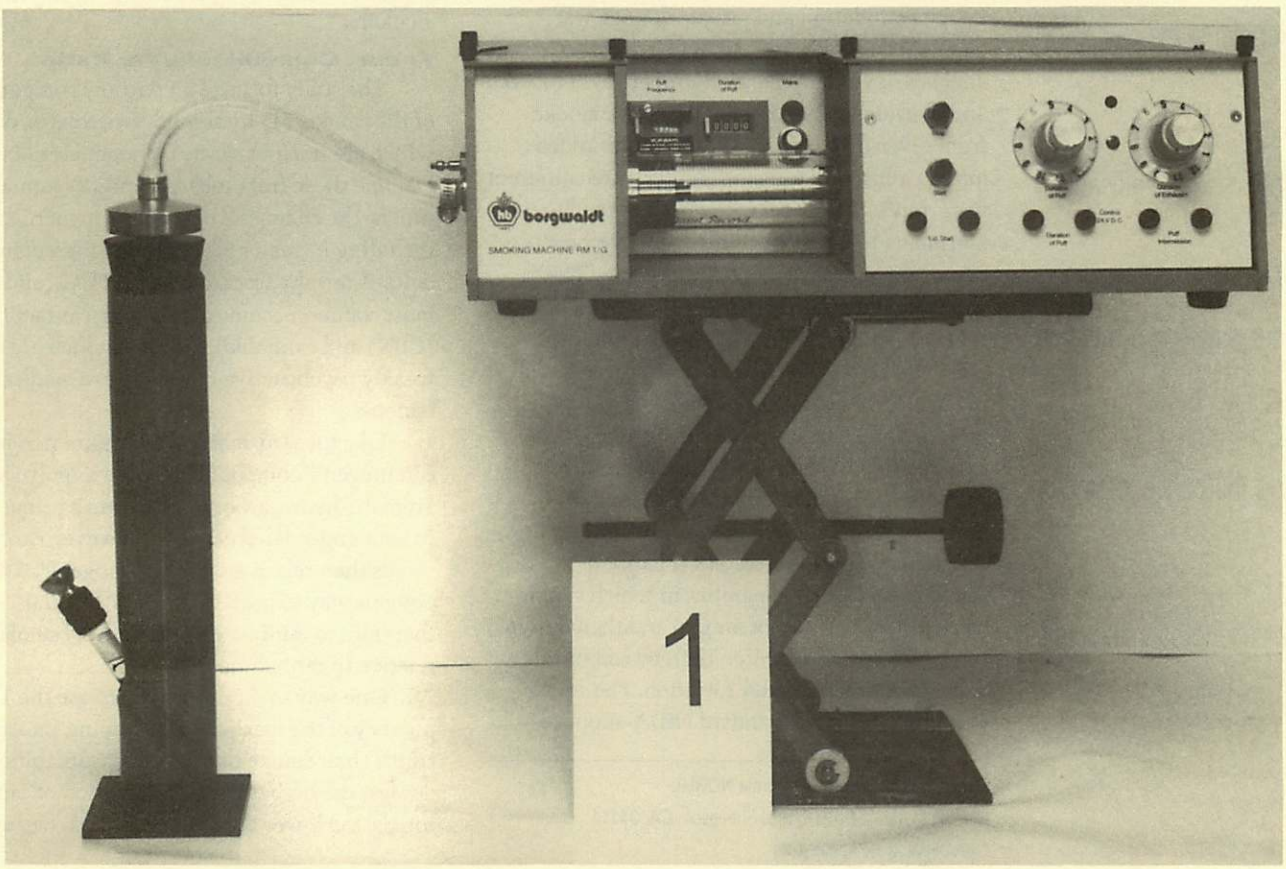
The potency of the NIDA-supplied marijuana used in the study was around 2.3%

Like the waterpipes, the cigarette filter also performed worse than the unfiltered joint, by about 30%. Researchers speculate this is because cannabinoids are exceptionally sticky and adhere to other solids. Hence, any filtration system that picks up particulates is likely also to screen out cannabinoids.

Vaporizers

The vaporizer results appeared more promising, but confusing. The two vaporizers were the only devices to outscore unfiltered joints in terms of raw cannabinoid/tar ratio. The electric hotplate vaporizer did best, with a performance ratio about 25% higher than the unfiltered joint. The hot air gun was just marginally superior, but might have done better had it not been for its water filtration component.

However, the situation was complicated by the fact that the cannabinoids produced by the electric hotplate vaporizer were unusually high in CBN, leaving 30% less THC as a percentage of the total cannabinoids than with the other smoking devices. Since CBN is not psychoactive like THC, recreational users might be expected to consume more smoke to make up for the deficit. (The situation may be different for medical users, who could experience other, medicinal benefits from CBN). For this reason, it seemed advisable



to recompute the performance efficiencies of the vaporizers in terms of THC, rather than all cannabinoids. When this was done, the electric hotplate vaporizer turned out to have a lower THC/tar ratio than the unfiltered joint, while the hot air gun was still marginally higher.

The reason for the excess CBN from the hotplate vaporizer remains unexplained. Because CBN is produced from THC by chemical oxidation, it has been suggested that the device somehow exposed the sample to too much oxygen. However, there is no evidence that this was the case. As for the second, hybrid vaporizer, it seems likely that its performance could have been improved by deleting its water component.

The results clearly indicate that more developmental work needs to be done on vaporizers. Theoretically, an ideal vaporizer could minimize production of tars by holding the temperature just above 155°C, the point at which THC vaporizes, which is well below the temperature where carcinogenic hydrocarbons are thought to be produced. In practice, both vaporizers produced over ten times more tars than cannabinoids, indicating that there is plenty of room for improvement.

In the late 1970s, a vaporizer known as the Tilt appeared on the market. According to the manufacturer, laboratory tests showed that it released 80% more THC and 79% less tar than a regular pipe, a performance ratio almost ten times better than any observed in this study. It is to be hoped that these impressive results can be replicated in the future. Unfortunately, the Tilt was withdrawn from the market in the early 1980s due to the passage of anti-paraphernalia laws.

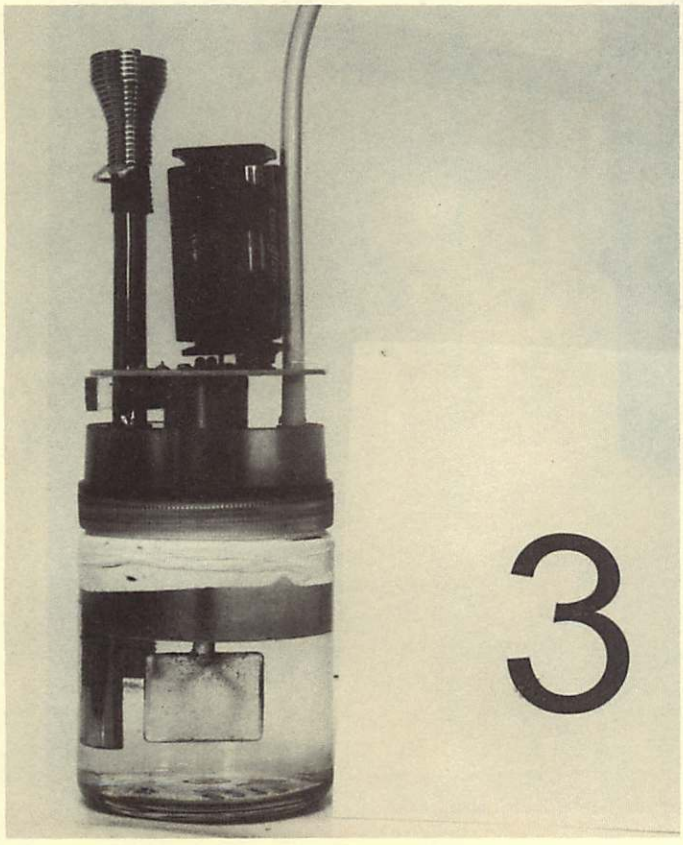
The MAPS-NORML study provides new information on the efficiency of different devices in delivering THC from marijuana to the user.

As for waterpipes, the prospects for improvement appear more dubious. It has been suggested that the performance of waterpipes could be improved by using liquids other than water or by changing the temperature of the liquid. However, it seems doubtful whether such tactics would circumvent the basic problem of separating the tars from the sticky cannabinoids.

Are Waterpipes Counterproductive?

The study results are obviously discomforting to waterpipe enthusiasts, many of whom prefer the cooler, milder smoke they produce, and have naturally assumed it is also more healthful. Unfortunately, however, the study indicates that waterpipes may actually be counterproductive in increasing consumption of carcinogenic tars.

Nonetheless, it is still premature to judge that waterpipes are actually unhealthful, since they may filter out other, non-solid smoke toxins



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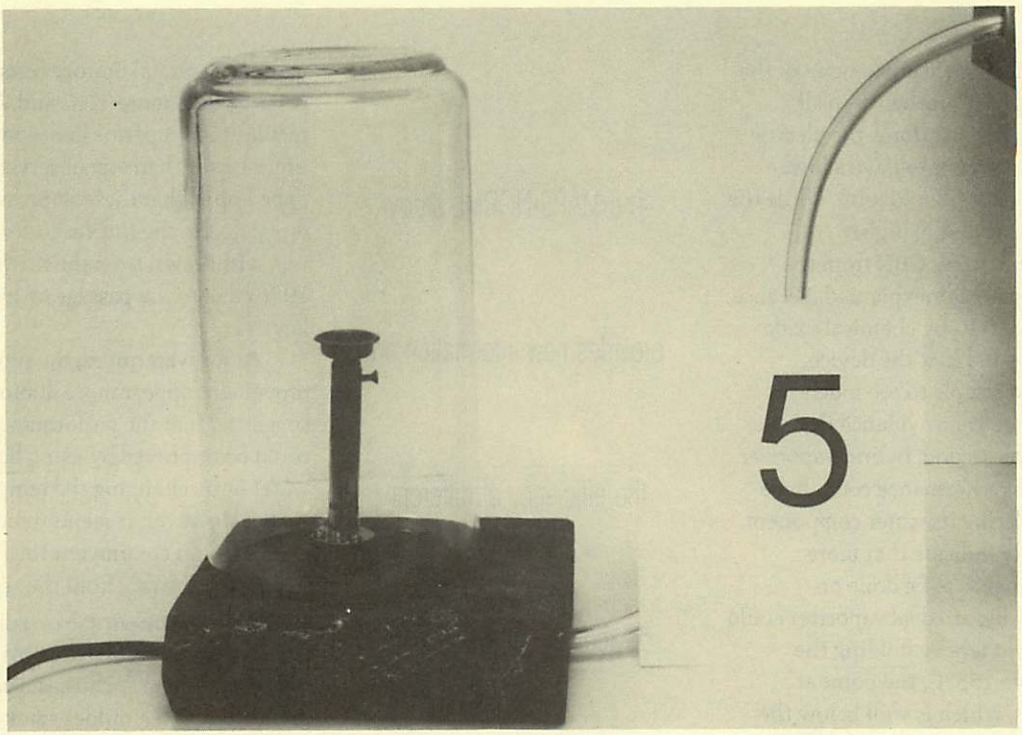
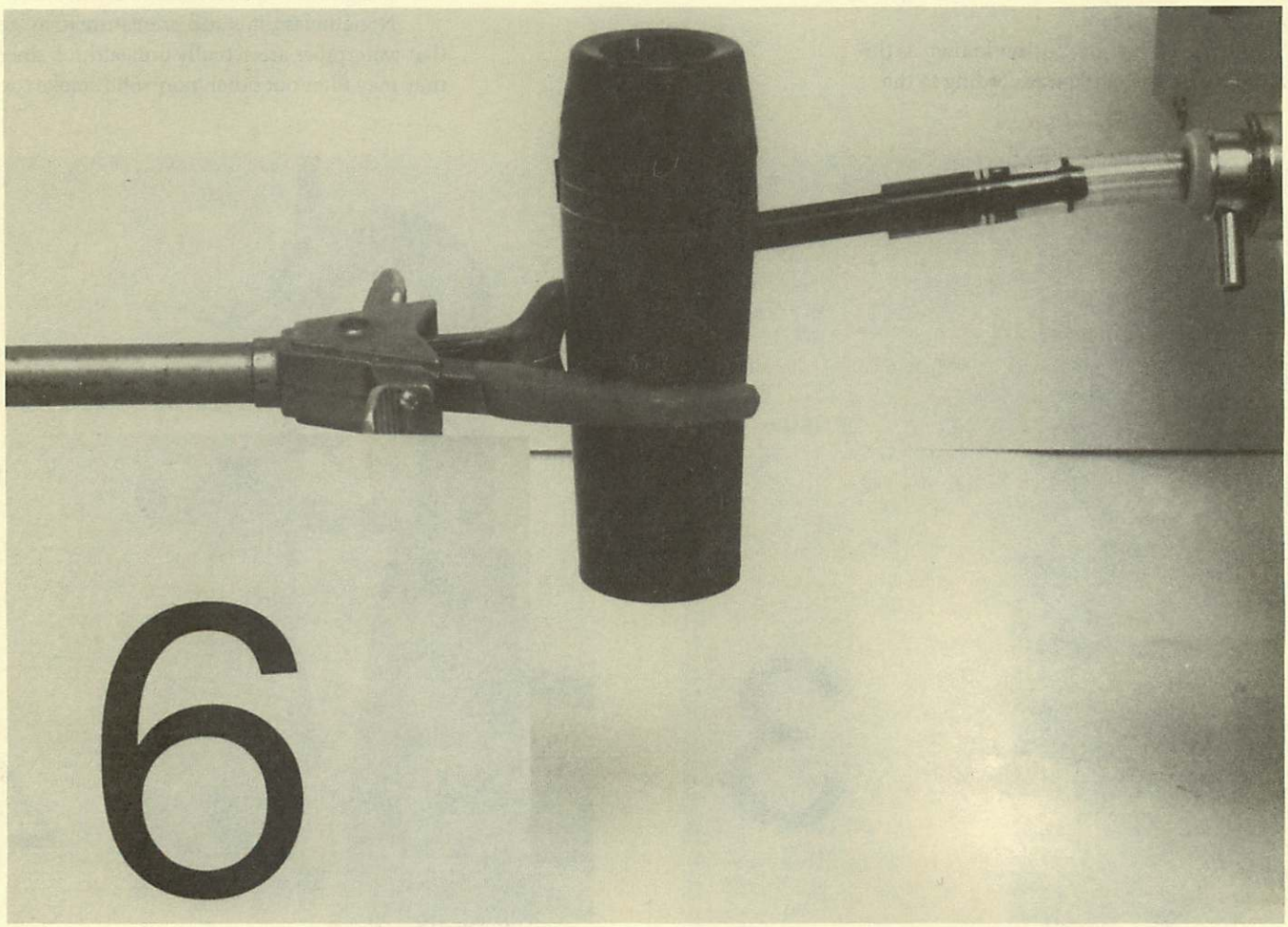


(PHOTOS)



was not analyzed in the study. Noxious gases known to occur in marijuana smoke include hydrogen cyanide, which incapacitates the lung's defensive cilia; volatile phenols, which contribute to the harshness of the taste; aldehydes, which promote cancer; and carbon monoxide, a known risk factor in heart disease. Previous studies indicate that water filtration may be quite effective in absorbing some of these [Nicholas Cozzi, Effects of Water filtration on Marijuana Smoke: A Literature Review, *MAPS Newsletter*, Vol. IV #2, 1993]. If so, waterpipes might still turn out to have net health benefits.

MAPS and California NORML are planning to undertake a second phase of the waterpipe study for the purpose of analyzing the gaseous phase of marijuana smoke.

In the meantime, the easiest way for most smokers to avoid harmful smoke toxins may be simply to smoke stronger marijuana. This strategy is apt to be more effective than any smoke filtration device. By simply replacing the low, 2.3% potency NIDA marijuana used in this study with high-quality 12%-sinsemilla, smokers could presumably reduce their tar intake by a factor of five while still achieving the same effect. Further improvements could be had by using pure THC or hash oil, which has been tested at potencies of 60%.

The notion that high-potency marijuana is less harmful directly contradicts official government propaganda, which maintains that marijuana has become more dangerous since the '60s due to increased potency. This claim appears to rest less on scientific evidence than on the desire to frighten the public. A careful analysis of government data by Dr. John Morgan has shown that the supposed increase in potency has been greatly exaggerated [American Marijuana Potency: Data Versus Conventional Wisdom, *NORML Reports* (1994)]. In any case, however, there is no good reason to presume that higher potency marijuana is more harmful, given the potential respiratory benefits of reduced smoke consumption. The hazards of excessive potency are purported to be an increased risk of acute overdose and greater susceptibility to dependency. However, both problems can be avoided if users adjust their dosage to potency. For most users, such hazards may well be outweighed by the benefits of reduced smoke consumption.

Research in Australia

The Australian government is currently conducting another study that may cast further light on the effects of potency variations. The study is designed to determine baseline THC, tar, and carbon monoxide levels from marijuana and marijuana-tobacco mixtures smoked through joints and waterpipes. The samples being tested come from police seizures in six different Australian states. Researchers say that they have observed "incredible" variations in tar and THC potency among different samples. Their report is expected shortly.

THC Transfer Rate

The MAPS-NORML study provides new information on the efficiency of different devices in delivering THC from marijuana to the user. Previous studies have shown that 60% - 80% of the THC burned in joints or waterpipes is lost in slipstream smoke, adhesion to the pipestem and bowl, pyrolysis, etc. [Mario Perez-Reyes, Marijuana Smoking: Factors that Influence the Bioavailability of Tetrahydrocannabinol, in C. Nora Chiang and Richard Hawks, ed., *Research findings on Smoking of Abused Substances*, NIDA Research Monograph 99, 1990]. The percentage of total THC delivered to the user is called the THC transfer rate.

The unfiltered joint scored surprisingly well in smoking efficiency, coming in second place with a transfer rate close to 20%. The portable waterpipe did slightly better, and the bong slightly worse. The other devices did notably worse. The vaporizers and electric waterpipe did especially poorly, with transfer rates less than one-third that of the top three devices. Thus, heavy smokers could literally be blowing most of their stash away with bad pipes.•

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why **marijuana** smoke harm reduction?

Dale **Gieringer**, Ph.D.

THE WATERPIPE STUDY WAS UNDERTAKEN AS A FIRST STEP toward marijuana harm reduction. It was motivated by concerns that, like tobacco, marijuana smoking poses hazards to respiratory health, such as increased risks of bronchitis, lung infection, and throat and neck cancers. These hazards are not caused by the psychoactive ingredients in marijuana, but by noxious vapors and solid particles, or tars, in the smoke produced by leaf combustion. In practice, these hazards can be eliminated by oral ingestion. However, smoking remains the most popular mode of consumption on account of its faster action, greater convenience, and easier adjustability of dosage. Surveys indicate that some two or three million Americans are daily marijuana smokers. Thousands of other Americans are currently smoking marijuana for medical purposes in the treatment of cancer, AIDS, glaucoma, and chronic pain and spasticity. To the extent that their health is already compromised, such patients may be especially vulnerable to respiratory infections caused by marijuana smoking.

The waterpipe study was undertaken as a first step toward marijuana harm reduction.

There accordingly appears to be a need for technology to reduce the respiratory hazards of marijuana. The most obvious fix is some form of smoke filtration device to reduce, suppress, or otherwise separate noxious by-products from the cannabinoids in the smokestream. Among the vast variety of pipes, bongs, chillums, hookahs and other marijuana smoking devices available, three basic technologies are in use: water filtration, cigarette filters and vaporizers. The first two of these have been shown to be of some value for tobacco. However, there has been virtually no published research on any devices when used with marijuana. We accordingly undertook the present study to find out which if any currently available technologies were effective, and which offered most promise for further development.

Our research was guided by the philosophy of harm reduction, a concept popularized by advocates of needle exchange, methadone maintenance, and similar drug treatment measures. Harm reductionists hold that drug use is to some degree inevitable, so it is better to mitigate the harmfulness of drugs than to aggravate it through harsh and futile law enforcement efforts. So far, harm reductionists have focused on hard drugs, the major source of drug abuse problems. However, there is no reason harm reduction efforts should not also be applied to marijuana.

Guiding Philosophy

Unfortunately, research in marijuana harm reduction has been stifled by prohibitionist policymakers, who mistrust efforts to mitigate the adverse effects of drugs on the grounds they make illicit drug use acceptable. Not surprisingly, it proved impossible for us to interest the National Institute on Drug Abuse in supporting our project. They reminded us that the tobacco industry had spent billions developing a smokeless cigarette, only to withdraw it in the face of consumer distaste and active hostility from the anti-tobacco lobby. Sadly, the reduction of smoking-related harm is viewed as a threat by many anti-drug zealots, insofar as it undermines their rationale for prohibiting drugs in the first place. Thus the anti-drug lobby has actively impeded the development of marijuana harm reduction technology by lobbying for anti-paraphernalia laws, which outlaw the

manufacture of devices for smoking controlled substances.

Adverse Effects

Harm reduction has equally little appeal to those marijuana enthusiasts who naively believe that marijuana, alone of all drugs, is a perfectly harmless herb. This delusion is quickly refuted by a review of the medical literature, which reveals extensive evidence of possible adverse effects of marijuana. From a physiological standpoint, these effects are mostly mild or of marginal significance, such as temporarily elevated heartbeat, slight and subtle impacts on immune cells, alleged changes in endocrine functioning, disputed and marginal influences on newborns, and so forth. Of considerably more consequence are the alleged psychological effects, including increased risk of accidents, impaired school and job performance, amotivation, heightened risk of drug abuse and sundry other social pathologies.

Nevertheless, from the standpoint of physical health, the single best established hazard of marijuana use appears to be an increased risk of lung disease from smoking. According to Dr. Lester Grinspoon, "After carefully monitoring the literature for more than two decades, we have concluded that the only well-confirmed deleterious physical effect of marijuana is harm to the pulmonary system."[1]

THIS SHOULD COME as no surprise to any naive non-smoker who has exploded in a paroxysm of coughing after inhaling his or her first toke of marijuana. Chemically, marijuana and tobacco smoke are quite similar, aside from their psychoactive ingredients: both arise from the combustion of leafy material, which produces a host of noxious gases and solid particulates, or tars, that are known to be hazardous to respiratory health.[2] Dating back to the British Indian Hemp Drugs Commission a century ago, observers have noted a high rate of bronchitis and other respiratory diseases among chronic ganja smokers in India, Jamaica and elsewhere;[3] however, interpretation of the data has been clouded by the subjects' high rate of tobacco use, making it impossible to determine whether cannabis itself was responsible. This issue has been resolved thanks to modern clinical research by Dr. Donald Tashkin at UCLA, who has followed separate cohorts of marijuana-only, tobacco-only, marijuana-and-tobacco, and non-smoking subjects. Dr. Tashkin's work indicates that heavy daily marijuana smokers are more susceptible than non-marijuana smokers to respiratory disorders such as coughing, bronchitis, impaired lung immune function, and potentially precancerous cell changes.[4]

Epidemiological Research

In the last couple of years, there has also emerged epidemiological evidence of marijuana's respiratory hazards. A prospective study of 902 subjects by the Kaiser Permanente Center found that daily marijuana-only smokers had a 19% higher rate of respiratory complaints than non-smokers.5 They also found a 30% higher rate of injuries, perhaps reflecting an increased risk of accidents. Surprisingly, those subjects who had used marijuana for the longest time (>15 years) showed no increase in respiratory illness but a higher risk of injuries, while those who had used marijuana for less than 15 years suffered more respiratory complaints, but not injuries! The Kaiser study was not large enough to detect changes in mortality, but a larger study is in progress.

In the meantime, an important, unsettled concern is that of lung cancer. Despite the fact that epidemiosmoking increases the risk of cancer, especially in the throat and upper respiratory tract.[6] To begin with, the tars from marijuana contain most of the same carcinogens as tobacco, to a greater or lesser extent.[7] It has been argued that marijuana is even more carcinogenic than tobacco because it contains some 50% more of the highly potent carcinogens known as polycyclic aromatic hydrocarbons, by-products of incomplete combustion which are thought to be a prime culprit in lung cancer. In reply, hempsters contend that tobacco is more dangerous because it contains far more radioactive carcinogens, particularly polonium-210.[8] However, this point seems moot in the light of experiments by the Leuchtenbergers and others, showing that marijuana tars, like those of tobacco, produce carcinogenic changes when applied to both animal and human lung tissue cultures.[9]

The most compelling evidence of marijuana's potential carcinogenicity comes from recent clinical reports of throat and neck cancer in young marijuana-using males. This was first discovered by oncologist Dr. Paul Donald at the University of California at Davis, who in examining six patients who had contracted throat and neck cancer at the unusually early age of under 40, found that every one had a history of marijuana use.[10] Although most of the patients also had other risk factors such as tobacco smoking or heavy drinking, marijuana use was the only one common to them all. Subsequent investigations by Dr. Donald and other oncologists have continued to find suspiciously high rates of marijuana use among younger throat, neck and tongue cancer patients, suggesting the possibility

The single best established hazard of marijuana use appears to be an increased risk of lung disease from smoking.

of a significant upsurge in upper respiratory tract cancers in coming years as the sixties generation ages.[11]

The link between marijuana and throat cancer seems especially compelling in light of Dr. Tashkin's work, which indicates that cannabis smoke tends to concentrate in the larger, upper passages of the respiratory tract.[12] In contrast, cigarette smoke is more likely to penetrate to the smaller, lower air passageways, where most tobacco-related lung cancers originate. It is still unclear whether marijuana plays a significant role in cancer of the lower lungs. However, Dr. Tashkin warns that the total tissue area in the upper respiratory passages is much smaller than that in the lower passages, so that marijuana smokers may well be exposing their throats to a proportionately much greater concentration of carcinogens. It is therefore possible that marijuana is a greater risk to the throat than cigarettes to the lungs. On the other hand, marijuana appears to be a much lesser factor in emphysema, which originates in the lower lungs.

Given the evident need to reduce the health risks of marijuana smoking, vaporization merits further research and development.

Marijuana Smoke vs. Tobacco Smoke

It is tempting to try to compare marijuana and cigarette smoking. An exact comparison is hard to make, given that marijuana and tobacco affect different parts of the respiratory system differently. Anti-marijuana propagandists like to say that one joint per day is equivalent to one pack a day of cigarettes. This myth misrepresents a study by Dr. Tashkin, which found that one-joint-per-day marijuana smokers experienced a "mild but significant" increase in airflow resistance in the large airways greater than that seen in persons smoking 16 cigarettes per day. However, the same study found that marijuana smokers did much better in other measures of respiratory health. A more accurate comparison based on studies by Dr. Tashkin's group is that marijuana smokers absorb four times as much tar in their lungs than cigarette smokers per weight smoked.[13] Given that a typical joint weighs about .4 - .5 grams, one-half as much as a tobacco cigarette, a rough equivalence is 2 cigarettes = 1 joint.

WITH THIS INFORMATION in mind, we undertook to explore various ways of filtering marijuana smoke. Waterpipes were the most obvious candidate, being widely available in head shops and popular with many users on account of the apparent mildness of their smoke. We were especially encouraged by research showing that waterpipes could be highly effective in filtering tobacco;[14] unfortunately, we were to discover that these results did not hold up for marijuana. A second candidate technology that would likewise prove disappointing was cigarette filters, which are widely available and can be easily adapted to marijuana by means of a simple homemade filter holder. We did not consider the more advanced "smokeless cigarette" developed by RJ Reynolds, due to the fact that it is not actually a smoke filtration device, but rather an inhaler for artificially flavored nicotine, which is of no use for marijuana. Instead, we turned our attention to vaporizers, which have been touted as a possible ideal solution to the cannabis smoking problem. Unfortunately, because vaporizers can't be used with tobacco, they are prohibited under US paraphernalia laws, and users must accordingly resort to homemade designs. We obtained one such device from the San Francisco Cannabis Buyers Club. Another was obtained from a Canadian supplier, who is selling them on that country's newly emerged, illegal but tolerated "gray market" in Vancouver. Although neither device performed close to the smokeless ideal, our study left reasonable hope that substantial improvement is possible. Given the evident need to reduce the health risks of marijuana smoking, vaporization merits further research and development.•

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2 One important issue that has not been settled is whether there are significant differences in chemistry between the government-supplied marijuana leaf used in laboratory studies and the sinsemilla bud that has become popular in recent decades.

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aids wasting syndrome protocol update

A decision from the NIH peer review committee is expected around September or October.

ALMOST FOUR YEARS HAVE PASSED since MAPS began assisting Dr. Donald Abrams, UC San Francisco, in the attempt to secure permission to conduct a clinical study comparing the medical use of smoked marijuana and dronabinol (Marinol, the oral THC capsule, Roxanne Laboratories, Columbus, OH) in the treatment of people suffering from the AIDS wasting syndrome. For anyone interested in the history of this long and wearisome saga, the entire tale can be found in back issues of the MAPS newsletter posted on our web site at http://www.maps.org. The brief summary is that Dr. Abrams' research proposal had been approved by the FDA and all the appropriate regulatory authorities. However, the study could not go forward because the National Institute on Drug Abuse (NIDA), which has a monopoly on the supply of marijuana that can legally be used in research, refused to provide any. According to NIDA, the protocol was "scientifically deficient." This rationale is transparently political and poor politics at that, since about 75% of U.S. voters support the medical use of marijuana when prescribed by a doctor.

The only ray of hope offered by Dr. Alan Leshner, the Director of NIDA, was an offer to reconsider NIDA's refusal to provide the required marijuana if and only if: a) the protocol was rewritten in the form of a grant application to the National Institutes of Health (NIH), b) was favorably reviewed by an NIH peer review committee and, c) government funding for the study was provided. This is a rather difficult hurdle to clear since only about 10-15% or less of all grant applications are funded. Nevertheless, in order to keep pressing ahead, MAPS contributed $4,000 and the Drug Policy Foundation contributed $1,000 to support the efforts of the staff of the San Francisco Community Consortium, of which Dr. Abrams is the research director, in the redesign of the experimental protocol.

The revised protocol which is discussed below was submitted for review in the NIH grant cycle beginning May 1, 1996. A decision from the NIH peer review committee is expected around September or October.

As stated in the protocol, "the Community Consortium is an association of HIV health care providers in the San Francisco Bay area and was established in March 1985 to encourage communication and collaboration between AIDS researchers at the University of California San Francisco AIDS Program at San Francisco General Hospital and front-line primary care physicians in practice in the community. Shortly after its inception, the Community Consortium developed into one of the nation's pioneer community-based clinical trials organizations. One of the Community Consortium's primary goals has always been to investigate agents that are in widespread use in the community in a controlled fashion in order to evaluate their safety and possible efficacy."

Specific aims of Dr. Abrams' study

"The primary aim of the investigation is to evaluate the safety and efficacy of smoked marijuana as an appetite stimulant for HIV-associated anorexia and weight loss. Dr. Abrams proposes to do this by conducting two related, sequential studies: a Phase I/II randomized, double-blind placebo-controlled, within-subjects evaluation of smoked marijuana conducted in an inpatient setting at the General Clinical Research Center at San Francisco General Hospital, and a Phase II/III randomized, open-label study of smoked marijuana versus dronabinol conducted as an outpatient study. The NIH grant application is a proposal to conduct only the initial outpatient component of these investigations.

The inpatient study will provide data on the effects of moderate (≈ 4%) THC-content marijuana on appetite and food intake, as well as safety data on immunologic function, HIV viral load, pulmonary function, endocrine function and neuropsychological functioning. Based on results of the inpatient study, Dr. Abrams plans to conduct an outpatient study that will provide comparative data on the effects of smoked marijuana to the licensed oral synthetic preparation, dronabinol. The outpatient study will also provide safety data on immunologic function, HIV viral load, pulmonary function and endocrine function when these agents are used to treat patients with HIV-associated anorexia and weight loss over several months.

As the public policy implications posed by the medical use of marijuana are significant, an inpatient study conducted under well-controlled, experimental conditions and an outpatient study conducted under "real world" conditions in primary care settings are needed to fully evaluate the safety and efficacy of this highly controversial therapy. •"

The revised protocol was submitted for review in the NIH grant cycle beginning May 1, 1996.

dramatic **progress** in washington state

Rick **Doblin**

In FEBRUARY 1996, MAPS sponsored a public opinion poll in Washington State that was designed to measure attitudes toward the medical use of marijuana. The poll cost $8,000, which MAPS raised from a generous donor. The poll was coordinated by Sharon Gilpin of Standard Communications and conducted by Evans/McDonough.

According to a major Seattle paper, the support for medical marijuana research was one of the "notable, and commendable" actions of a generally unproductive Legislative session.

The results of the poll were rather surprising, especially considering that 46% of the respondents identified themselves as born again Christians, a group one would assume to be skeptical about the medical use of marijuana. When the respondents were first asked whether they "favored or opposed making marijuana legally available for medical use if prescribed by a doctor," fully 78% indicated that they were in favor of doing so, 48% strongly in favor and 30% somewhat in favor. Only 11% were strongly opposed while 6% were somewhat opposed and 5% didn't know.

ONE RATHER ENJOYABLE PART of polling is that you can test the strength of attack arguments designed to weaken support for any proposition. For example, respondents were asked to respond to the argument that "some drug policy experts believe that legalization of marijuana for medical purposes in the first step toward total legalization." Respondents were also asked to consider the argument that "legalization of marijuana for medical purposes will make it too easy for other people to get marijuana and abuse it" and to react to the statement that "legalization of marijuana, even if it is just for medical purposes, sends the wrong message to young people." After being exposed to these ideas, respondents were asked once more whether they "favored or opposed making marijuana legally available for medical use if prescribed by a doctor." Support did drop, all the way from 78% to 75%. The poll demonstrated that support for the medical use of marijuana is substantial and rock solid in Washington State.

Legislation Introduced

These findings were particularly heartening to medical marijuana patient and advocate Joanna McKee, who had been trying to get the Washington State Legislature to address the medical marijuana issue. Joanna had found an ally in Democratic State Senator Jeanne Kohl, who agreed to introduce legislation that would authorize $130,000 to study the medical marijuana issue. The big breakthrough came when Republican Sen. Bob McCaslin agreed to co-sponsor the bill. The reason for his support arose out of a personal tragedy in that his wife had recently died of cancer. She had not tried marijuana but Sen. McCaslin said in an interview that "if he could have helped his wife he'd have gone out and bought some."

With bipartisan support for the appropriation, clear evidence that the public was supportive of the medical use of marijuana, and effective lobbying by medical marijuana patients, the Washington State Legislature approved the

appropriation. According to a major Seattle paper, the support for medical marijuana research was one of the "notable, and commendable" actions of a generally unproductive Legislative session.

State Allocates $130,000 for Research

Saturday, March 30, 1996 was a very special day for the medical marijuana issue. At 4:00 p.m., Governor Mike Lowry of the State of Washington signed the bill allocating $130,000 to study medical marijuana. Of this sum, $60,000 will be used by the Board of Pharmacy to study the medical uses of marijuana and $70,000 will go to Washington State University to study setting up a cultivation project to grow marijuana for medicinal purposes. The federal government has a monopoly over marijuana for scientific studies and currently refuses to supply it for research into the beneficial uses of marijuana.

Joanna McKee and I have been working closely with State Senator Kohl, the co-sponsor of the bill, in an attempt to make it simpler for the people at the Board of Pharmacy and Washington State University to conduct their studies. I've provided a written report discussing the issues that will need to be faced and listing the numerous contacts who can provide essential information such as the people at the FDA involved in regulating marijuana research and setting up a Drug Master File for marijuana, the two people who currently have DEA licenses to grow marijuana, the people who can consult on clinical research designs, etc.

Suggested Methodology

The strategy I've suggested is that the Board of Pharmacy try to use an N=1 methodology in which every patient acts as their own control and would receive marijuana, Marinol or other active drugs and a placebo in a double-blind, crossover design. This study design was suggested to me by the FDA over four years ago. The $60,000 allocated would be sufficient to enroll a substantial number of patients in such studies and would build a broad base of support for the research by including people with a variety of different diagnoses.

In regard to the cultivation project, I'm suggesting that Washington State U. start small in order to provide marijuana for a few research projects. In the long run, I pointed out that Washington State U. could become a major provider of marijuana for prescription use to patients all across the United States, especially if its marijuana is used in the studies that eventually convince the FDA to approve marijuana for prescription use.

Final reports are supposed to be completed before the end of the year. With the Board of Pharmacy and Washington State U. studies, Washington State leads the nation in trying to respond to the needs of seriously ill patients with compassion instead of empty rhetoric and gratuitous cruelty.•

Washington Governor Mike Lowry, WA State Senator Jeanne Kohl, Jimmy Wheeler and Joanna McKee

BOOK REVIEWS

the literature of **psychedelics**

Bob **Wallace**

WELCOME to this new column about available (and forthcoming) books on the topic of "mind-expanding" plants and compounds. We expect this will be a regular column. I'll generally cover both new books from many disciplines, and each time discuss some of the classics in particular fields. But in this first column I'll just cover some of the new books from 1995 and 1996. Future columns will also discuss classics from fields such as psychology, philosophy, history, religion, ethnobotany, neuropharmacology, and organic chemistry.

What's New

Flowers of Wiricuta: A Gringo's Journey To Shamanic Power by Tom Soloway Pinkson is a true story of the author's work with the Huichols and about his personal spiritual and shamanic development. Tom gives us many insights into Peyote, prayer, pilgrimage, and power. Chapters include Healing the Sacred Circle, Befriending the Darkness, Responsible Ecstasy, Sacred Marriage, and Today's Hunter: The Spiritual Warrior. (1995; Wakan Press 0-9647542-0-7 $14.95).

Strange Fruit: Alchemy and Religion, the Hidden Truth by Clark Heinrich presents the *Amanita* mushroom as the philosopher's stone and the body of Christ. It traces a path from Vedic and Tantric myths, through Moses and the prophets, to the quest for the Holy Grail and the alchemists, ending with the author's personal experiences with the *Amanita*. Poetic and outrageous. Many color photos. (1995; Bloomsbury [London] 0-7475-1548-4, 236 pages, $44.95*).

Religion and Psychoactive Sacraments: a Bibliographic Guide by Thomas B. Roberts provides a great reference to many books and papers on entheogens (psychedelics used in a religious context) and related topics. Includes extended excerpts plus bibliographic data; about one page per book. A must for research into the spiritual side of these compounds. (1995; Council on Spiritual Practices, 329 pages, $29.95).

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email: books@promind.com or http://www.promind.com

Three Halves of Ino Moxo was written by noted Peruvian author Cesar Calvo in 1981, but was recently translated into English by Kenneth A. Symington. It evokes the images and feelings of the *ayahuasca* jungle; colorful, dark, intense. High quality literature, translated by one who knows these realms well. Lyrical, mythical, the story of Calvo's search for Cordova-Rios, now Ino Moxo, and the three *ayahuascaros* who help him. Brings forth the worlds and realities of the plant sorcerers. Photos and glossary. (1995; Inner Traditions 0-89281-519-1, 271 pages, $14.95).

PharmakoPoeia: Plant Powers, Poisons, and Herbcraft by Dale Pendell features a range of scientific and practical information, plus some lovely poetry about psychedelic and other psychoactive plants. Topics include entheogens as personal allies, feeling comfortable with natural poisons, and useful tips on psychotropic plants as house guests. Beautiful stuff. This Volume I includes: tobaccos, alcohols, absinthe, opium, kava, *Salvia divinorum*, *Cannabis*, nitrous. (1995; Mercury House 1-56279-069-2, 302 pages, $16.95).

The Age of Entheogens & The Angels' Dictionary combines two books by Jonathan Ott. First, a radical history of the Pharmacratic Inquisition, the attempt to suppress the direct ecstatic experience of entheogens with *placebo* religious sacraments, and the coming of the Entheogenic Reformation. Plus, a delightful dictionary of sacred inebriants and their mind states, with definitions and quotes from classic drug literature. (1995; Natural Products 0-9614234-7-1 [paperback], 160 pages, $17.95).

On Drugs by David Lenson challenges the way we think about psychotropic compounds. How drugs affect philosophy, psychology, religion, literature, and (especially) consumerism; what this implies for public policy. Interesting user's perspective from a professor of comparative literature. A few chapters: Cannabis and the War Against Dreams; Acid metaphysics; Squares and Cubes: Drug Combinations. (1995; Univ. of Minnesota Press 0-8166-2710-X, 252 pages, $21.95).

The Politics of Consciousness by Steve Kubby speaks to external freedom from "voodoo" drug laws, and then to internal freedom using the wisdom of psychedelic plants. Topics include molecular theology; exopheromones; downloading the cosmic design; mushrooms as manna from heaven; visionary rites-of-passage; how belief creates reality; and healing cancer. Forward by Terence McKenna. (1995; Loompanics 1-55950-133-2, 160 pages, $18.95).

Sacred Mushrooms and The Law by Richard Glen Boire describes the federal and all state laws on psilocybin mushrooms and compounds. Special topics include the California law against spores; legal difference between mushrooms and their active compounds; and the Religious Freedom Restoration Act as defense for religious use. By a noted lawyer and author of the fine *Entheogen Law Review* newsletter. (1995; Spectral Mindustries, 36 pages, $5.95).

Integration, Issue 5 has papers from the First International Conference on Plants, Shamanism, and States of Consciousness. These include Shulgin on the Art of Seeing; Schultes on New World hallucinogens; Callaway, Airaksinen, and Gynther on endogenous harmala and indole alkaloids; Schaefer on Peyote use by Huichol; Furst on Huichol use of *Solanaceae* species; Ott on *ayahuasca* plants; Dennis McKenna on little known hallucinogenic plants; Samorini on the Bwiti religion and *Iboga*; Fericgla on hallucinogens as "adaptogens." (Bauer, Hanslmeier, Luna, et al [editors]; Bilwis-Verlag Eschenau, 128 pages, $29.95*).

The *Yearbook for Ethnomedicine, Issue 3* has many excellent papers; those in English include Charles Grob summarizing psychiatric research with hallucinogens; Marlene Dobkin de Rios on Amazon drug tourism; both on adolescent psychedelic suggestibility across cultures; Jonathan Ott on *ayahuasca* analogues for the New Millennium; J.C. Callaway summarizing *ayahuasca* pharmacology; Baker on problem-solving using psychedelics; Valencic on the Eleusian Mysteries; and Wright on the right to raves. From Germany; more papers in German. (Christian Rätsch & John Baker [editors] 1995; VWR 3-86135-030-0, 384 pages, $39.95*).

Worlds of Consciousness has papers from the 1992 First International Congress for the European College for the Study of Consciousness. Papers (all in English) include Hallucinogens in Cross-Cultural Perspective (Dobkin de Rios), Addiction and Transcendence as Altered States of Consciousness (Ralph Metzner), Structure-Activity Relationships of Classic Hallucinogens and their Analogues (Shulgin & Jacob), Thirty Years of Psychedelic Research (Yensen & Dryer), and seven more. (Schlichting & Leuner [editors] 1995; VWR 3-86135-406-3; 259 pages, $21.95*).

White Rabbit: a Psychedelic Reader contains reports from writers, artists, visionaries, and others about experiences with psychedelics and other drugs. From Lewis Carroll to William Burroughs, Charles Dickens to Philip K. Dick, and Florence Nightingale to Timothy Leary, these 38 excepts span centuries of mystical drug use. (John Miller & Randall Koral [editors] 1995; Chronicle 0-8118-0666-9, $13.95).

Voices from the Edge continues the fine series of interviews started by David Brown & Rebecca Novick in *Mavericks of the Mind*. Interviewees include Jerry Garcia, Alexander and Ann Shulgin, Jean Houston, Elizabeth Gips, Ram Dass, and nine other mind pioneers. Some talk about psychedelics; all are into new visions of mind/body/earth consciousness. (1995; Crossing Press 0-89594-732-3, 402 pages, $14.95)

Timothy Leary has a new book out, *Surfing the Consciousness Nets: My Lonely Quest for the Reliable Male Afrodesiac*. This intense computer-style graphic story and rant mixes drugs, sex, computers, and various wild ideas and images. Even at 75, Leary continues to push the bounds of mind and body. (1995; Last Gasp 0-86719-410-3, 128 pages, $16.95).

Plant Intoxicants: A Classic Text on the Use of Mind-Altering Plants is a reprint of Ernst von Bibra's 1855 book on coffees, teas, *Amanita*, *Datura*, coca, opium, *Cannabis*, khat, tobacco, betel, and others. Best scientific book of the time; also discusses social and economic issues. Re-typeset. Extensive technical notes and references by Jonathan Ott. Index. (1995, Inner Traditions 0-89281-496-9, 284 pages, $16.95).

Ethnobotany: Evolution of a Discipline, edited by Richard Evans Schultes and Siri von Reis, gives us a rich collection of 36 new essays by masters in the study of people and their plants, edited by father of the field. Sections on anthropology, medicine, psychology, religion, and other elements. Ethnopharmacology section with papers on hallucinogens and more by Albert Hofmann, Bo Holmstedt, Dennis McKenna, Gordon Wasson, and others. Scientific name index. (1995; Timber Press 0-931146-28-3, 416 pages, $49.95).

The *Psychedelic Sourcebook* by Will Beifuss provides an excellent annotated listing of many sources for plants, seeds, spores, publications, organizations, and other resources having to do with

psychedelics. Nice appendix with doses, conversions, and other data. (1995; Phanerothyme Press, 60 pages, $9.95).

Growing Gourmet and Medicinal Mushrooms by Paul Stamets continues where his *Mushroom Cultivator* left off. Mushroom natural history, culturing methods, permaculture, grain and sawdust spawn, design of grow rooms and farms, color plates, resource directory, bibliography, index. Details about visionary wood-chip species such as *P. cyanescens* and *azurescens*. (1996 [2nd edition]; Ten Speed Press 0-89815-608-4, 586 pages, $39.95).

Mushrooms: Poisons and Panaceas by Denis R. Benjamin covers the effects of mushrooms on human health. Includes sections on both the *Psilocybe* and *Amanita* mushrooms. Color photos, identification, range, toxicity, treatment. Good for naturalists and collectors as well as health professionals. (1995; W. H. Freeman 0-7167-2649-1, 448 pages, $34.95).

A Primer of Drug Action: Concise, Nontechnical Guide to Actions, Uses, and Side Effects of Psychoactive Drugs by Robert Julian is out in a new edition. Comprehensive, but readable; describes how various psychoactive drugs work, both recreational and psychotherapeutic, as well as associated neurotransmitters and receptors. Has a nice chapter on psychedelics, and a section on MAO inhibition. (1995 [7th edition]; W. H. Freeman 0-7167-2619-X, 522 pages, $19.95).

The DXM FAQ by Bill White tells how DXM (dextromethorphan), an over-the-counter cough remedy, provides several interesting mind-states when taken in larger doses. Describes the effects of DXM at different levels, problems and contraindications, and preparations (with a simple alkaloid kitchen extraction). Also some fascinating speculation on various interactions with the sigma, NMDA, glutamate, and PCP2 receptor families. Interesting reading. (1995; self-published, 188 pages, $27.95*). Also at http://oucsace.cd.ohiou.edu/personal/bwhite/dxm.html.

Drugs and Behavior by Fred Leavitt presents a good college text on mind drugs, both recreational and psychotherapeutic. Very complete, from neurotransmitters to social policy (the author is for legalization). Describes benefits and dangers of many drugs, including effects on memory, creativity, and sex. Organized by topic and effect, not by drug. Glossary, huge bibliography, substance and general indices. (1995 [3rd edition]; Sage Publications 0-8039-4784-4 [paperback], 546 pages; $29.95).

Drugs, Society, and Human Behavior by Oakley Ray & Charles Ksir gives us another good high school or college text on recreational drugs. Reasonable non-judgmental section on hallucinogens, mostly about LSD. Organized by drug, plus sections on basic drug actions, social policy, and drug education and treatment. Glossary and index. (1996; Mosby 0-8016-6563-9, 477 pages, $32.95).

Some other related new titles include: - *Best of High Times, Psychedelic Issue* - *Deadheads*, story of Grateful Dead followers - *The Shaman*, by Piers Vitebsky - *Legal Highs* has a new edition out - *The Drug Identification Bible*

All books are available from my company, *Mind Books*. A free catalog is also available. Call us at 800-829-8127 (or 707-829-8127); fax to 707-829-8100; email books@promind.com, visit our Web site at http://www.promind.com; or write to Mind Books at 321 S Main St #543, Sebastopol, CA 95472, USA.

Prices shown are publisher list prices, except those marked with * are Mind Books prices.

Bob Wallace and Mind Books

Bob recently started a mail-order book company, *Mind Books*, to provide a source for the many books related to psychedelics still in print. Bob has been working on this project for several years, after an earlier career in the software field. The DOS old timers out there might remember Bob's product PC-Write, and his pioneering work on the shareware concept. "The early days of the software field are like psychedelics today in many ways," says Bob. "There's great potential to extend and expand the mind using both these tools, but serious work on developing the psychedelics has just been resumed by a few forward-looking researchers, unlike software which has millions of developers worldwide." Bob's column will help MAPS members learn about the available books on psychedelics. The publisher and ISBN are included so readers can order these books from any source they prefer. If you wish to order from *Mind Books*, contact information is at the end of the column.

- Bob Wallace

"If you think there's a solution, you're part of the problem" - George Carlin

Dear Friends of Sasha and Ann:

You may or may not know that the Drug Enforcement Agency along with various other Federal, State, and local agency representatives showed up unannounced, with search warrants, at Sasha and Ann's home in Lafayette, California on October 27, 1994. There were approximately thirty persons in the raiding party along with eight vehicles that included a fire engine and marked police cars. The stunned Shulgins were informed that this was not a criminal action, but rather an "administrative investigation" to determine if Sasha was in regulatory compliance with the many stipulations of his DEA license that allows him to be in possession of, and to work with, Schedule I substances. Administrative and environmental infractions were found; as can be easily imagined in a former basement, now laboratory, that is as well known for its pet spiders as for its cornucopia of important research, and its seemingly unending creation of new molecular structures. And it's also fair to say that housekeeping is not one of Sasha's big priorities.

The DEA has now made its findings and taken the following action: 1) To terminate Sasha's license that allows him to work with Schedule I materials. 2) To fine him $25,000.00. The termination of the license seems "justifiable," given the rather long list of record keeping and administrative infractions. What is puzzling, however, is that in over 15 years of being licensed two prior, friendly, that is announced and scheduled, surveys and reviews of the very same lab and records produced no adverse comment. This, of course, was before the publication of PIHKAL.

The fine is attributed to a collection of unsolicited "anonymous drug samples" that people had sent to Sasha with the hope that he might test them sometime. There are those who think that such a testing program is beneficial. The DEA does not, and expressly forbids a licensee from doing so. The allowable fine is $25,000.00 per sample. Sasha and Ann have paid the fine, and have paid out another $15,000.00 in legal and related expenses. This $40,000.00 has come out of their retirement funds at very near the time that they are needed. Over Sasha's initial protest, a trust account has been set up, and a mail box rented. You may send your contributions to:

Alexander T. Shulgin Trust
Box 322
343 Soquel Ave.
Santa Cruz, CA 95062

Please make your checks or money orders payable to: Alexander T. Shulgin Trust

If you would like your contribution to be anonymous please say so and the trustee will honor your request. All other contributors will be acknowledged by returned mail and placed on a list to be given to Sasha and Ann. The trust will be maintained for one year, and monthly or periodic contributions are more than welcome.

You are requested to circulate and distribute this notice.

elc@netcom.com, trustee

Melatonin Dreams

There's been a lot of talk in the media lately about melatonin, a natural hormone made by the pineal gland. This hormone has been available in vitamin stores for the past two years and is currently used mostly for insomnia. I believe readers of MAPS would be interested in the fact that melatonin is chemically known as 5-methoxy-N-acetyl-tryptamine, with a structure not too unlike that of DMT (dimethyl-tryptamine) and other tryptamines.

I have used melatonin in my practice to treat insomniacs. Many of my patients report experiencing vivid dreams. I also have incredibly long, clear, and memorable dreams the nights I take this supplement. It especially seems that the morning dream goes on and on, almost like watching a double feature at the movie theater.

My theory is that melatonin, and related hallucinogenic metabolic compounds, are the chemicals responsible (at least partly) for inducing a dream state. J.C. Callaway also felt that tryptamines were involved with dreams when he published an article in 1988 entitled "A proposed mechanism for the visions of dream sleep," *Medical Hypotheses* 26:119-124.

Most of my patients report having pleasant dreams, often with complicated plots. One 70 year old woman, who previously rarely remembered her dreams, tells me she now dreams of people in her high school. However, no medicine is perfect. A small percentage of users have noted that occasionally a dream had been vividly bad — what could be called a nightmare.

I tell my patients on melatonin not to watch *Nightmare on Elm Street* or read a Stephen King novel before tucking under the covers.

Ray Sahelian, M.D.

Ray Sahelian, M.D. is the author of *Melatonin: Nature's Sleeping Pill* and Editor-in-Chief of *Melatonin Update* newsletter
Tel: 310-821-2409
dr.ray@ix.netcom.com

Please say something!

I have great appreciation and respect for the dedicated work that MAPS has done to support the decriminalization and rational use of the visionary medicines. The Autumn 1995 issue was very informative and valuable, as always. But I was deeply disturbed by the presentation of the MDMA test subjects' experiences. I find it difficult to comprehend how such a learned journal could present this text without any commentary on the obvious abuse of this most important compound by the contributing subjects.

Subject number one reported ingesting MDMA "two to four times a week" over a two year period. This pattern extrapolates out to something in the neighborhood of 300+ ingestions in two years! The second subject reported 200 ingestions over an undisclosed period of time.

I have been using and facilitating the use of visionary medicines for many years. I have always understood that MDMA should not be used more than once a month, which always seemed very level headed to me, especially given the lack of conclusive evidence regarding neurotoxicity vis a vis dosage and frequency of ingestion. Using this once a month model, these subjects have ingested enough MDMA to cover 20 to 30 years of (what I consider to be) safe and responsible use of this sacrament.

My advisors and mentors over the years are among the most well thought of and respected in the field, and are well known to MAPS, et al. While I don't want to criticize anyone's spiritual path, these reports need to be responded to firmly, to insure that no readers of the MAPS newsletter come to believe that such patterns of usage are appropriate or advisable under any circumstances.

I don't believe any human can take these amounts of MDMA without developing a tolerance for the compound, whether it's toxic for them or not. (Quite frankly, I believe that future research will prove that MDMA is not toxic used intelligently rather than impulsively.) Tolerance is the first step towards physical addiction and overuse/abuse is always a desecration of the sacred nature of the medicines. These perhaps unwitting abusers, no matter how well intentioned, only create more problems for those of us who seek to bring these important medicines back into the mainstream of psychopharmacology.

Please say something!!!!!

Editor's note:

You are right. The readers of the newsletter would have benefited from a statement in the Autumn 1995 issue indicating that such patterns are unusual and not recommended. Most supporters of the responsible use of MDMA for therapy or personal growth would agree with "less is more," and that an extended pattern of weekly (or more often) ingestion is unnecessary, possibly harmful and might constitute abuse. However, while such patterns are unusual and not recommended, we hesitate to label them as abuse without independently examining each individual's motivation and experience.

The ingestion of a psychoactive drug is a personal decision with unique consequences. The two individuals whose reported MDMA use seem to you to constitute abuse have as of yet not reported adverse effects, nor did the research reveal any harmful long-term functional or behavioral consequences. By volunteering for MDMA research, these two MDMA users have made a positive contribution toward the eventual acceptance of MDMA as a prescription medicine.•

UPCOMING EVENTS

Telluride Mushroom Conference, August 22-25, 1996

THE TELLURIDE MUSHROOM CONFERENCE is designed for persons interested in expanding their knowlege of edible, poisonous and psycho active wild mushrooms. Major consideration will be given to the cultivation of diverse mushroom species, emphasizing practical principles and techniques.

Professor Charles Grob, eminent author and lecturer, will address a plenary session of the Conference on Ayahuasca, Soul of the Vine.

The Conference will be held in Telluride, an historic Colorado mining town on the western slope of the Rocky Mountain Continental Divide. The forests in the Telluride area generally produce a wide variety of wild mushrooms, particularly edible species. Daily forays will be held in the surrounding mountains to collect edible and poisonous species and study their field characteristics.

Conference facilities include appropriate meeting rooms and campsites. More elaborate accommodations are available locally. Meat and non-meat nutritious meals will be served.

Telluride is located in southwest Colorado about 325 miles from Denver, 125 miles from Grand Junction, and 65 miles from Montrose, Colorado. The area is accessible by air, auto, bus and rail. Contact Telluride Central Reservation at 1-800-525-3455 for details on housing and travel [In Colorado call (303) 728-4430].

The late summer climate in the Colorado high country is lovely with warm, sunny days and cool nights. Warm clothing is required.

World Wide Web Page:
http://telluridemm.com/mushroom.html

Registration with meals: $235, without meals: $190. Fee covers admission to Conference programs. Add $10 for Telluride Mushroom Field Guide. Immediate registration is strongly recommended. Acceptance of late registration cannot be guaranteed.

For more information contact: Fungophile, Inc., P.O. Box 480503, Denver, CO 80248-0503, tel/fax: (303) 296-9359. •

Entheobotany shamanic plant science
A Multidsciplinary Conference on Plants, Shamanism and Ecstatic States
18–20 October 1996, Palace of Fine Arts Theatre, San Francisco, California

ENTHEOBOTANY is an independent, multidisciplinary, international scientific conference featuring 21 of the world's leading authorities on the science of shamanic vision-plants, also known as entheogens and plant-teachers; incorrectly called hallucinogens or psychedelics. The faculty is headed by Swiss chemist Albert Hofmann, famed discoverer of LSD and psilocybin, and includes also five other members of the 'Entheogenic Old Guard': Richard Evans Schultes, Professor Emeritus at Harvard University and retired Director of the Harvard Botanical Museum, Johannes Wilbert, Professor Emeritus at UCLA, Peter T. Furst, Professor Emeritus at SUNY Albany, Alexander T. Shulgin, Professor of Chemistry at UC Berkeley, and Bo Holmstedt, Professor Emeritus at Karolinska Institutet of Stockholm. Their 15 younger colleagues participating in the symposium include controversial 1993 Nobel Laureate (Chemistry) Kary B. Mullis, as famous for his acknowledgement of his use of LSD and other visionary drugs, as for his discovery of PCR (Polymerase Chain Reaction), key development in the area of DNA chemistry, for which he was also awarded the coveted Japan Prize in 1993. Also among the scientists presenting their latest research is Jonathan Ott, well-known writer and co-organizer of the meeting; Antonio Escohotado, famous writer and Professor at the National University in Madrid, Spain; Christian Rätsch, best-selling German writer, anthropologist and lecturer; and Italian researcher Giorgio Samorini of the Civic Museum in Rovereto, Italy. Top scientists from a dozen countries are represented in the all-star cast. Topics to be discussed include ayahuasca, famous visionary potion of the Amazonian rain forest, iboga and ibogaine, the African sacramental drug currently being tested at University of Miami as a possible cure for drug addiction, the peyote cactus recently legalized as a religious sacrament in the United States, psilocybin-containing mushrooms, entheogenic South American snuffs and their contained alkaloid bufotenine, along with the well-known visionary drugs LSD, mescaline, DMT and psilocybin. Entheobotany is directed both at specialists and at interested laypersons, and registration for the 8-session event costs $225. Food and hotel not included. Space limited, so register early. For further information contact: Entheobotany / Post Office Box 311 / Sierra Madre, California / USA—CA—91025–0311 / Voice/ Facsimile: 818—355–9585.

SUBSCRIPTION & RENEWAL

❑ YES! I would like to renew my membership.

❑ YES! I would like to join the Multidisciplinary Association for Psychedelic Studies.

US MEMBERS: ❑ $35 ❑ $100 ❑ $250 ❑ $ other_____ ❑ Students & low-income $20

*NON-US: ❑ $50 ❑ $115 ❑ $250 ❑ $ other_____ ❑ Students & low-income $35

❑ I am enclosing a check (No Eurocheques) ❑ Please charge my Mastercard/Visa (add $1)
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❑ I prefer to maximize my donation, please don't send my member premium.

❑ Check here if change of address. *Mail forwarding is expensive. Please notify MAPS of address changes promptly.*

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* Non-U.S. orders, please be sure to include postage.

AVAILABLE FROM MAPS

1. PURSUIT OF ECSTASY, Jerome Beck & Marsha Rosenbaum - 240 pages, autographed.....$18
2. ECSTASY AND THE DANCE CULTURE, Nicholas Saunders - 320 pages.....$18
3. LSD IN THE TREATMENT OF SUBSTANCE ABUSE PROTOCOL, Kurland, Yensen & Dryer.....$6
4. SMOKED MARIJUANA VS ORAL THC IN THE TREATMENT OF THE AIDS WASTING SYNDROME PROTOCOL, Dr. Donald Abrams.....$4
5. MDMA PSYCHOTHERAPY IN END-STAGE CANCER PATIENTS PROTOCOL - 42 pages.....$10
6. THE GOOD FRIDAY EXPERIMENT FOLLOW-UP, *article on psychedelics and experimental mysticism* by Rick Doblin, originally published in the August 1991 Journal of Transpersonal Psychology...$8
7. JOURNAL OF NERVOUS & MENTAL DISEASE PAPER: 20 PSYCHIATRISTS ABOUT THEIR OWN MDMA EXPERIENCES & REVISION MAGAZINE ARTICLE ON MDMA.....$8
8. COMPLETE SET OF MAPS NEWSLETTER BACK ISSUES, 1988-1995 .....$50
9. 1995 ESALEN CONFERENCE AUDIO TAPE, *Presentations by Charlie Grob, Rick Strassman, Richard Yensen, Rick Doblin, Jerry Beck, Mark Kleiman, Kit Bonson, Louis Seiden*.....$10
10. THANATOS TO EROS, Myron Stolaroff - 191 pages.....$25.95 for U.S. orders / $31.95 Non-U.S. (price for THANATOS TO EROS already includes shipping)
11. MARIJUANA – THE FORBIDDEN MEDICINE, Grinspoon & Bakalar - 175 pages.....$26

A Complete Set of MAPS Newsletter Back Issues – $50

Non-U.S. orders: You must include $6 per item for postage. Please, no checks on foreign banks.

MAPS MEMBERSHIP INFORMATION

MAPS is a membership-based organization working to assist psychedelic researchers around the world design, obtain governmental approval, fund, conduct and report on psychedelic research in humans.

Founded in 1986, MAPS is an IRS approved 501 (c)(3) non-profit corporation funded by tax-deductible donations from about 1,000 members.

MAPS' founder and current president, Rick Doblin, is currently in the Ph.D. program in Public Policy at Harvard's Kennedy School of Government and has previously graduated from Stan and Christina Grof's Holotropic Breathwork 3-year training program.

Sylvia Thyssen is responsible for member services and coordinates MAPS' outreach efforts. She is a Phi Beta Kappa graduate of the University of North Carolina at Chapel Hill, where she majored in Art History and French.

MAPS has previously funded basic scientific research in both humans and animals into the safety of MDMA (3,4-methylenedioxymethamphetamine, *Ecstasy*) and has opened a Drug Master File for MDMA at the U.S. Food and Drug Administration. MAPS is now focused primarily on assisting scientists to conduct human studies to generate essential information about the risks and psychotherapeutic benefits of MDMA, other psychedelics, and marijuana, with the goal of eventually gaining governmental approval for their medical uses.

Albert Einstein wrote: **"Imagination is more important than knowledge."** If you can even faintly imagine a cultural reintegration of the use of psychedelics and the states of mind they engender, please consider joining MAPS in supporting the expansion of scientific knowledge in this area. Progress is possible with the support of individuals who care enough to take individual and collective action. In addition to supporting research, your contributions will return to you the following benefits:

The MAPS Publications:
Each publication will report on MAPS research in progress. In addition to reporting on MAPS studies, the publications may focus on psychedelic research both in the U.S. and abroad and on conferences, books and articles of interest. Issues raised in letters and calls from members may be addressed, as may political developments that affect psychedelic research and usage.

General Members: $35.
(If outside U.S. add $15 postage.)
General members will receive MAPS publications, which appear on a quarterly basis, plus a current article relating to psychedelic drug research.

Supporting Members: $100.
(If outside U.S. add $15 postage.)
Supporting members will receive MAPS publications, plus the audio tape of the Psychedelic Research Research Panel at the May *1996 ITA Conference in Manaus, Brazil.*

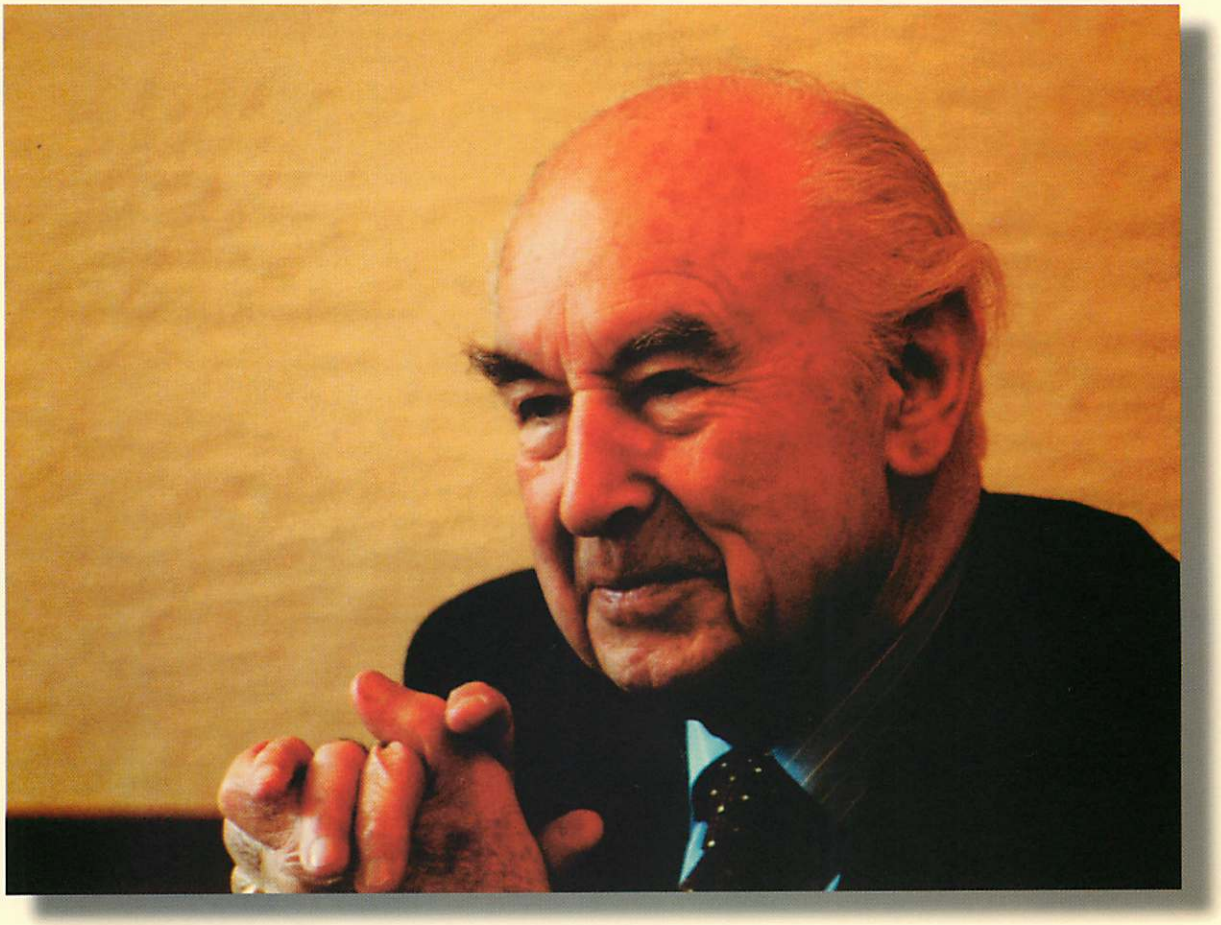
Patron: $250 or more.
Patrons members will receive MAPS publications, plus a complete set of MAPS back issues or the available MAPS-offered book of their choice. Patrons may also request research updates on matters of personal interest.

Rick Doblin, MAPS President

Sylvia Thyssen, Networks Coordinator

The future may teach us to exercise a direct influence,
by means of particular chemical substances,
on the amounts of energy and
their distribution in the mental apparatus.
It may be that there are
still undreamt-of possibilities of therapy.
— Sigmund Freud (1938)

(Unbeknownst to Dr. Freud, LSD was first synthesized in 1938 by Sandoz Pharmaceutical Company chemist Dr. Albert Hofmann.)



"Psychedelic experience can lead us
to the deepest depths and the highest heights,
to the boundries of that which humankind
is capable of experiencing."

– Dr. Albert Hofmann

...from a speech by Dr. Albert Hofmann to the
Conference of the European College for the Study of Consciousness,
delivered in Heidelberg, Germany on February 24, 1996,
not long after Dr. Hofmann's 90th birthday, January 11, 1996.

see pages 44, 46, and 53