

# MAAPS



SUMMER 1997 • VOLUME VII NUMBER 3

## FRONT COVER

NATURE OF MIND, panel 6 (detail),  
oil on wood, 8"x10", 1995 by Alex Grey.

## BACK COVER

NATURE OF MIND,  
1995-96, seven panels, oil on wood  
with sculpted, gilded frame, 68"x78"  
from the HAVE YOU SEEN GOD mandala  
collection.

"Many of my art works have been inspired by visionary voyages with  
entheogens. This particular altarpiece, Nature of Mind, arrived as a sequence of  
images, to my unsuspecting and uninebriated imagination early one morning. The  
altarpiece is a somewhat psychedelic homage to my years of Buddhist study and  
practice. As soon as I quickly drew one image, another replaced it until there was a  
complex seven stage journey of a wanderer discovering the spiritual path, having an  
introduction to their own true nature, embodying that truth and re-entering  
society. Whatever your spiritual practice is, may it take you to the highest Heavens  
where you come face to face with your divine source, and may the insights gleaned  
from such a journey be brought directly into your life and work."

— Alex Grey

A twelve page color booklet, *Nature of Mind*, details each panel, and features a  
poem written by Grey. Available for \$5 from the artist.

Many of our readers may be familiar with the visionary art of Alex Grey  
through his book *Sacred Mirrors* (published by Inner Traditions 1-800-246-8648).

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Inquiries regarding posters, T-shirts and original works  
available for sale are welcome.

Alex Grey

725 Union Street, Brooklyn, NY 11215



# MAPS

Bulletin of the Multidisciplinary Association for Psychedelic Studies

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**Rick Doblin, MAPS President**

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**The Interview with Dr. Albert Hofmann**  
has been postponed until the Fall 1997 issue  
of the MAPS Bulletin. We apologize for the delay.

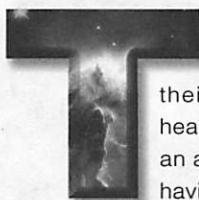
**MAPS' NEW ADDRESS**

MAPS (Multidisciplinary Association for Psychedelic Studies)  
2121 Commonwealth Avenue  
Suite 220  
Charlotte, NC 28205  
• Phone: (704) 334-1798  
• Fax: (704) 334-1799  
• Internet: [info@maps.org](mailto:info@maps.org)  
• [www.maps.org](http://www.maps.org)

ISSN 1080-8981

MAPS (Multidisciplinary Association for Psychedelic Studies) 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. MAPS has previously funded basic scientific research 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 government approval for their medical uses. Interested parties wishing to copy any portion of this newsletter are encouraged to do so and are kindly requested to credit MAPS including name and address. The MAPS newsletter is produced by a small group of dedicated staff and volunteers. Your participation, financial or otherwise, is welcome. © 1997 Multidisciplinary Association for Psychedelic Studies, Inc. (MAPS) 2121 Commonwealth Avenue, Suite 220, Charlotte, NC 28205. Phone: **(704) 334-1798**. Fax: **(704) 334-1799**. Internet: [info@maps.org](mailto:info@maps.org) and <http://www.maps.org>

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**TIME HORIZONS** is a concept that refers to the length of time that people consider relevant to their particular decisionmaking processes. I first heard the words used by a friend who was working as an aide to a U.S. Senator. He described Senators as having the longest time horizons of any elected officials

due to their six year term of office, making them more likely than any other elected officials to consider the longer-term effects of policies and laws.

I have been thinking of time horizons lately in reference to MAPS' agenda, in part because of a new research project that MAPS has initiated. As far as I know, this project, a 35 to 43 year follow-up study to Dr. Oscar Janiger's pioneering LSD research, is the longest-term follow-up to any psychedelic research project that has ever been conducted. From 1954-1962, Dr. Janiger administered up to several doses of LSD to nearly 800 people in the Los Angeles area. Subjects in Dr. Janiger's study came from all walks of life and were administered LSD in a non-therapeutic, naturalistic context designed to determine the essence of the LSD experience in terms of process rather than content. Sitting in Dr. Janiger's attic to this day are the files from this experiment which contain some minimal personal information about each of the subjects along with session reports filled out by many of the subjects after their LSD experiences. Dr. Janiger also conducted experiments into the effect of LSD on creativity using painters as subjects, and co-founded the Albert Hofmann Foundation (p. 37).

## **Letter from Rick Doblin, MAPS President**

MAPS is assisting Dr. Janiger by locating and interviewing the subjects from his study in order to determine what long-term effects, if any, they report from their LSD experiences. The areas of investigation have to do primarily with the impact of the experiment on emotional and spiritual development, persisting mental or physical side-effects, other drug use, and types of guidance about drug use that the subjects offered to their children and grandchildren. MAPS has hired a full-time researcher to conduct interviews with the subjects, a professional transcriber, and a private detective using only non-intrusive methods to help locate the subjects. About 20 interviews have already been conducted. Our preliminary observations are that the subjects vividly remember their LSD experiences, almost uniformly find them to have been of some lasting value, and do not suffer from persisting negative effects. From a political point of view, the subjects in this follow-up study break all the stereotypes about LSD users since they are in their sixties or older and took LSD before it was controversial. Their testimony will, I think, be of great value in communicating the potential benefits and risks of creating legal contexts for the administration of psychedelics within carefully controlled settings. You will be hearing more about this study as it progresses.

Time horizons have also been on my mind because the outcome of MAPS' multi-year efforts to conduct therapeutic research into the medical uses of marijuana and MDMA will be determined in the next few months. MAPS has been working for over five years to initiate research into the medical use of marijuana. A decision by the National Institute on Drug Abuse (NIDA) on a grant proposal from Dr. Donald Abrams, UC San Francisco, to research the use of marijuana in the treatment of the HIV-related wasting syndrome is due before the end of September (p.16). NIDA's decision about Dr. Ethan Russo's MAPS-supported proposal to study the use of marijuana in treatment-resistant migraine headache sufferers is expected in November (p.16).

Since its founding in 1986, MAPS has been working to initiate research into the therapeutic use of MDMA. The FDA's decision is expected this fall concerning the MAPS-funded research of Dr. Charles Grob, Harbor-UCLA Medical Center, into the use of MDMA in the treatment of pain and distress in cancer patients. MAPS has also been recently approached by Manuel Tancer, M.D. and Charles R. Schuster, M.D., Wayne State University, and Reese Jones, M.D., UC San Francisco, requesting permission to refer-

ence MAPS' FDA Drug Master File (DMF) for MDMA in their applications to the FDA for permission to conduct NIDA-funded studies of MDMA's sites of action in the brain and pharmacokinetics (p.5). MAPS' MDMA DMF contains the data from MAPS' FDA-required 28-day animal toxicity studies that are prerequisites for the conduct of human research with any compound. The DMF also contains detailed information about the synthesis and purity of the MDMA that David Nichols, Ph.D., the founder of the Heffter Research Institute (p.43), legally manufactured for MAPS in 1986. Dr. Nichols' MDMA was used in the animal toxicity studies as well as Dr. Grob's Phase 1 human research and will also be used in the research of Drs. Tancer, Schuster and Jones.

Dr. Schuster and I first met in 1985 in Geneva, when he was a consultant to the World Health Organization's International Convention on Psychotropic Substances, which was considering MDMA for international scheduling. I went to Geneva as an emissary of the MDMA therapeutic community to argue before the WHO for continued permission to conduct MDMA research legally, and to argue against the criminalization of MDMA in general. Dr. Schuster was in agreement with the need to continue with human research. Dr. Schuster's view was particularly important at the time because it was in his lab at the



University of Chicago that Dr. George Ricaurte had made the first discoveries of MDMA's neurotoxic potential. Needless to say, both my recommendations and Dr. Schuster's opinions about research were swept away in the hysteria of the worldwide War on Drugs. Dr. Schuster went on to become director of the National Institute on Drug Abuse and I went on to found MAPS.

It has been twelve years since I first met Dr. Schuster and almost as long since Dr. Jones and I first met. It is now particularly gratifying to grant them access to the MAPS FDA DMF, thereby assisting them in their respective efforts to conduct human research with MDMA.

I firmly believe that legal contexts will eventually be created for the beneficial uses of psychedelics and marijuana. The War on Drugs and its attendant pressures to limit research with

psychedelics and marijuana cannot be sustained forever in a democratic society committed to scientific and religious freedom and the balancing of the rights of the individual to life, liberty and the pursuit of happiness with the needs of society to protect itself from the harms of drug abuse. I am sobered, however, by the fact that the Religious Freedom Restoration Act of 1993 was considered unconstitutional by the U.S. Supreme Court in a June 25, 1997 decision. Social progress is often measured in decades, generations, centuries, even millennia, rather than months and years. MAPS will continue to utilize lengthy time horizons in its strategies and projects.

Time horizons have also been on my mind because of the recent first birthday of my daughter, Lilah. Now that I have two children, I am thinking more frequently in time increments of

decades and generations. I've also been thinking of the commotion I inadvertently created by publishing in a previous MAPS Bulletin a picture of my son Eden with an unidentified object on his nose that I mistakenly thought could be readily identified as a Cheerio. So many people speculated that Eden suffered from a birth defect that had something to do with chromosome damage resulting from psychedelics that I felt compelled to identify the nature of the bump on his nose in a subsequent issue. Now in this issue, in the interests of full disclosure and scientific integrity, I must confess that perhaps there is something running in my family tree. Note the picture of Lilah, also with a Cheerio on her face.

I wish you a wonderful summer and urge you to continue your generous support of MAPS. Progress is bound to be slow and MAPS needs the support of all of you for the very long run. With some good fortune, we can enjoy the present precious moments and also keep our eyes on the time horizons that stretch beyond our personal lives into the lives of our descendents, both direct and related only by our shared humanity, whom we will never meet but whose lives can nevertheless be impacted by our work. •

Rick Doblin, MAPS President, August 1997.



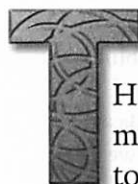
# Serotonin and dopamine system interactions in the reinforcing properties of psychostimulants: A research strategy

Manuel Tancer, M.D. and Charles R. Schuster, Ph.D.

Clinical Research Division on Substance Abuse

Department of Psychiatry and Behavioral Neurosciences

Wayne State University School of Medicine



THE MAIN GOAL of the experiments described in this proposal is to increase our understanding of the interaction between serotonin (5-HT) and dopamine (DA) systems in mediating the subjective, discriminative stimulus, and reinforcing effects of psychostimulant drugs in humans. This proposal will use three primary approaches to study DA/5-HT interactions: first, a drug with mixed DA/5-HT properties, 3,4-methylenedioxymethamphetamine (MDMA), will be compared to drugs with more selective DA (e.g., d-amphetamine) vs. 5-HT (e.g., d-fenfluramine) mechanisms of action; second, d-amphetamine and d-fenfluramine will be co-administered in such a way as to produce mixed DA/5-HT effects which will be compared to the effects of the compounds administered alone; and third, serotonin-mediated effects will be blocked either by fluoxetine or tryptophan depletion in order to isolate the effects of dopamine with the expectation that this blockade will have differential effects on amphetamine, fenfluramine and MDMA.

Although amphetamine and fenfluramine are similar structurally, they have significantly different subjective, discriminative stimulus and reinforcing effects. These differences in dependence-related effects are presumably related to the fact that amphetamine produces prominent effects on DA systems whereas fenfluramine's effects are mediated primarily by 5-HT systems. Interestingly, MDMA, which structurally is an amphetamine derivative, has prominent effects on both 5-HT and DA brain systems but unlike fenfluramine has abuse potential more like that of amphetamine. Thus, MDMA may be a useful compound for investigating the interactions among neurochemical systems as they relate to effects of drugs that are dependence-related.

Although most psychostimulants that are abused alter norepinephrine (NE), DA, and to a lesser degree 5-HT levels, there are compelling data that DA systems play the major role in the reinforcing properties and other dependence-

related effects of psychostimulant drugs. On the other hand, DA and 5-HT neurochemical systems are known to interact; for instance, recent studies have demonstrated a potentiation of impulse-dependent DA release by 5-HT. MDMA, whose effects have been attributed to its actions on 5-HT systems as well as DA has been shown in animal studies to share discriminative stimulus and reinforcing effects with amphetamine. On the other hand, humans have also reported that it produces hallucinogenic-like effects. Animal brain dialysis studies have shown that pretreatment with selective 5-HT reuptake inhibitors (SSRIs such as fluoxetine, Prozac) will prevent fenfluramine from producing 5-HT release. Similarly, the 5-HT releasing property of MDMA is blocked by pretreatment with the selective SSRIs. The SSRIs provides us with a useful tool for investigating in humans how the dependence related actions of MDMA are modified by manipulations of its effects on 5-HT.

**Specific Aim 1:**

To investigate the subjective, reinforcing, motor activating, and aggression modulating effects of two doses of MDMA (between 1.0 mg/kg and 2.5 mg/kg—see below) compared with placebo, 10 mg/70 kg and 20 mg/70 kg of d-amphetamine, and 15 mg/70 kg and 30 mg/70 kg of d-fenfluramine in recreational drug users. Subjective effects of drugs of abuse have provided important information about the abuse and dependence-producing properties of drugs. To date, there are no well designed, double-blind studies of MDMA compared with prototypical psychostimulants or 5-HT releasing drugs. Based on animal research and reports of its abuse, we are hypothesizing that MDMA will resemble d-amphetamine more than d-fenfluramine in terms of its mood-altering properties although it may produce additional hallucinogenic effects. In addition, we hypothesize that MDMA, like amphetamine, will increase motor activity. On the other hand, we hypothesize d-amphetamine and MDMA will differ in a laboratory test of aggression, the point subtraction aggression paradigm, with d-amphetamine at the doses being used increasing aggression and MDMA decreasing it.

**Specific Aim 2:**

To characterize the discriminative stimulus properties of MDMA in recreational drug users. Based upon the results of animal research we are hypothesizing that MDMA will share discriminative properties with d-amphetamine but not d-fenfluramine. Specifically we are hypothesizing that subjects trained to discriminate between placebo, d-amphetamine and d-fenfluramine will respond to MDMA as if it is d-amphetamine. Recreational drug users will be trained to discriminate 10 mg/70 kg d-amphetamine from 30 mg/70 kg d-fenfluramine and placebo and tested with two doses of MDMA (to be determined in pilot study) to evaluate its discriminative properties, i.e., whether it is more amphetamine-like or fenfluramine-like.

**Specific Aim 3:**

To systematically measure the interaction of d-amphetamine and d-fenfluramine in healthy volunteers. The hypothesis is that increasing 5-HT release by the administration of d-fenfluramine will decrease the subjective stimulant effects of d-amphetamine and d-amphetamine will attenuate the typical aversive subjective effects of d-fenfluramine. A secondary hypothesis is that some of these drug combinations will result in subjective effects that resemble MDMA (mixed stimulant and halluci-

nogenic effects). Subjects will receive a fixed dose of d-amphetamine (10 mg/70 kg) in combination with a range of d-fenfluramine doses (15 mg/70 kg, 30 mg/70 kg, and placebo). A second group of subjects will receive a fixed dose of d-fenfluramine (15 mg/70 kg) in combination with a range of d-amphetamine doses (10 mg/70 kg, 20 mg/70 kg, and placebo).

**Specific Aim 4:**

To evaluate the effect of pretreatment with fluoxetine on the behavioral and subjective effects of d-amphetamine, d-fenfluramine, and MDMA in recreational drug users. The hypothesis is that fluoxetine, by blocking the 5-HT transporter and thereby preventing the uptake of d-fenfluramine into neurons where it can release 5-HT, will block to a major degree its characteristic subjective effect profile. In contrast, pretreatment with fluoxetine will have only minor effects on the stimulant-like subjective and reinforcing effects of d-amphetamine. Although it is known that MDMA's effects on serotonergic neurons can be blocked by fluoxetine, we are hypothesizing that MDMA's stimulant-like and dependence-producing effects are mediated by DA, and that fluoxetine pretreatment would not significantly attenuate them. However, any of MDMA's effects which are mediated by 5-HT (e.g., changes in the LSD scale score of the ARCI, changes in the Hallucinogen Rating Scale), will be attenuated. Subjects will be randomized to receive pre-treatment with fluoxetine or placebo. Subjects in both groups will then be tested with single doses of placebo, d-fenfluramine (30 mg/70 kg), d-amphetamine (10 mg/70 kg), and MDMA (dose to be determined) under double-blind, balanced-order conditions. The subjective and reinforcing effects of the MDMA, d-amphetamine, d-fenfluramine and placebo will be compared across groups.

**Specific Aim 5:**

The tryptophan depletion paradigm, which transiently reduces brain 5-HT levels, will be used to investigate the effect of acute reduction in presynaptic 5-HT levels on the subjective and reinforcing properties of d-fenfluramine, d-amphetamine and MDMA. The hypothesis is that tryptophan depletion, but not sham depletion (tryptophan is added back to the amino-acid slurry), will attenuate the characteristic subjective and reinforcing effects of d-fenfluramine and produce only modest attenuation of the stimulant-like effects of d-amphetamine. As in the experiment with fluoxetine,

The main goal  
of the experiments  
described in this proposal  
is to increase our  
understanding of  
the interaction between  
serotonin (5-HT) and  
dopamine systems  
in mediating the  
subjective,  
discriminative stimulus,  
and reinforcing effects  
of psychostimulant  
drugs in humans.



the effects of depletion on MDMA's effects will be a function of which neurochemical system is mediating its dependence-related effects. We are hypothesizing that depletion of 5-HT will attenuate the hallucinogenic effects of MDMA but have little effect on the stimulant and reinforcing effects of MDMA. Volunteers will be randomly assigned to one of four groups. Each subject will undergo both tryptophan and sham depletion paradigms under double-blind conditions. At the nadir of plasma tryptophan levels, each of the groups will receive either d-amphetamine (10 mg/70 kg), d-fenfluramine (30 mg/70 kg), or MDMA (dose to be determined), or placebo.

#### **Specific Aim 6:**

In conjunction with the studies outlined above blood samples will be collected for the measurement of homovanillic acid (HVA), the principal metabolite of dopamine, as well as cortisol and prolactin. These measures will provide objective data about the neurochemical and neurohormonal effects of the various drugs alone and in combination. This will allow the correlation of drug induced mood and behavioral changes with the neurochemical and neurohormonal changes mediated by DA and 5-HT. This series of studies will provide novel and scientifically valuable information about the role of DA/5-HT interactions in the subjective, discriminative stimulus, and reinforcing effects of psychostimulant drugs in humans. In addition, these studies will provide objective data on the neurochemical, neurohormonal, subjective and reinforcing effects of MDMA under standardized laboratory conditions.

#### **Background and Significance**

Psychostimulant abuse is a major public health problem in the United States. The popularity of stimulant drugs goes in cycles and there is recent evidence of increased amphetamine and methamphetamine use in southern California (Baberg et al., 1996). 3,4-methylenedioxymethamphetamine (MDMA or Ecstasy) is a substituted amphetamine with both stimulant and hallucinogenic properties. In 1988, 39% of the students at a major United States university reported trying MDMA at least once (Peroutka, et al., 1987). A more recent NIDA report suggests that 2% of college students had taken MDMA within the past year (NIDA Caps 1993). Cuomo et al. (1994) reported an increase in the percentage of college students reporting having used MDMA at least once from 16% in 1986 to 24% in 1990 at a Southern University. MDMA is widely used at all-night parties ("raves") both

in the United States and the United Kingdom (Randall 1992a,b; Solowij et al., 1992). It has been reported that 13-18% second year university students in the UK had taken LSD, amphetamine, or MDMA (Webb et al., 1996).

There is compelling evidence for the importance of DA systems in mediating the reinforcing properties of d-amphetamine and cocaine (Giros et al., 1996; Di Chiara and Imperato, 1988; Ritz and Kuhar, 1989). However, in humans, blocking the DA system with pimozide does not reliably block the subjective effects of d-amphetamine, suggesting that the stimulant effects of d-amphetamine are not simply due to activation of DA systems (Brauer and de Wit, 1996). Likewise, Volkow et al. (1996) found that blockade of DA transporter by methylphenidate did not block the "high" from a second dose of methylphenidate and suggested that other neurotransmitter systems may be involved in the "high." Furthermore, manipulation of 5-HT systems have been found to modulate the stimulant and reinforcing properties of d-amphetamine (Porrino et al., 1989; Leccese and Lyness, 1984).

#### **Conflicting literature**

There is a large, often conflicting literature describing functional 5-HT and DA system interactions both in vitro and in vivo (Korsgaard et al., 1985; Carroll et al., 1990; Peltier and Schenk, 1993). Some studies report an inhibition of DA systems by 5-HT (see review by Kapur and Remington, 1996; Prisco et al., 1994) while others report a 5-HT facilitation of impulse-dependent DA release (Benloucif et al., 1993; Iyer & Bradberry, 1996).

In behavioral paradigms, it appears that increased 5-HT activity does decrease the reinforcing properties of d-amphetamine. For instance, acute administration of the 5-HT precursor L-tryptophan (Leccese and Lyness, 1984), the 5-HT releasing agent d-fenfluramine (Olds and Yuwiler, 1992; Fletcher, 1995), the direct 5-HT agonist quipazine (Leccese and Lyness, 1984), and the 5-HT reuptake inhibitor fluoxetine (Porrino et al., 1989) decreased the rate of amphetamine self-administration, while chemical 5-HT depletions enhance the rate of responding for amphetamine (Leccese and Lyness, 1984). Furthermore, the 5-HT antagonist metergoline (Lyness and Moore, 1983) enhanced d-amphetamine self-administration, while cyproheptidine and methysergide reduced self-administration frequency (Leccese and Lyness, 1984). This inhibitory interaction between 5-HT and DA systems was consistent

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of MDMA compared  
with prototypical  
psychostimulants or  
5-HT releasing drugs.

...there is  
no clear evidence  
that MDMA use  
results in any  
neurotoxicity  
in humans.

with a recent drug interaction study in humans in which a mutual antagonism of the mood altering properties of *D,L*-fenfluramine and phentermine were observed (Brauer et al., 1996). Interestingly, in a drug discrimination paradigm in rats, this combination was discriminated as more cocaine-like than either drug alone. This points to the importance of studying the interaction of *D*-amphetamine and fenfluramine in humans.

On the other hand, two studies in cocaine abusing human subjects report the opposite interaction. Satel et al., (1995) and Aronson et al. (1995) reported that tryptophan depletion, a procedure which acutely decreases 5-HT levels in the brain (Delgado et al., 1989; 1994) resulted in a decreased subjective response to intranasal administration of cocaine and to decreased cue-induced cocaine craving. Taken together, these different results may be a function of drug (cocaine versus *D*-amphetamine), different experimental paradigms, different brain regions being examined, different procedures, as well as different species. Nevertheless, this sort of conflicting data speaks to the need to conduct additional research in humans.

#### **Comparative studies**

Experimental methods have been developed in humans which permit assessment of subjective (Johanson and de Wit, 1989), discriminative stimulus (Preston and Bigelow, 1991), drug interaction, and reinforcing effects of drugs (Griffiths et al., 1996). There are also validated paradigms to assess their effects on behaviors such as activity and aggression (Cherek et al., 1986; Miczek and Haney, 1994) as well as neurohormonal and neurochemical effects. In this proposal the effects of *D*-amphetamine, *D*-fenfluramine, and MDMA alone and in combination will be compared using behavioral, subjective, neurohormonal and neurochemical measures.

*D*-Amphetamine is a prototypical psychostimulant drug which is used clinically in the treatment of narcolepsy and attention-deficit hyperactivity disorder. In humans it has positive subjective effects, increasing vigor, elation, arousal, and positive mood (Johanson and Uhlenhuth, 1980), is clearly discriminated from caffeine (Chait and Johanson, 1988) and fenfluramine (Chait et al., 1986), but not phenmetrazine (Chait et al., 1986), is reinforcing (Johanson and Uhlenhuth, 1980), and has a biphasic response on aggression (Cherek et al., 1986) with low doses increasing aggressive

responding and higher doses decreasing the aggressive responses.

*D*-Fenfluramine is a potent 5-HT releaser and reuptake blocker which has recently been approved by the FDA as a treatment for obesity. Much less research work has been done in humans with this more selective enantiomer than with its racemic (*D,L*-) form. Although the studies in this proposal will use *D*-fenfluramine, it is assumed that these effects will be similar to those produced by *D,L*-fenfluramine. *D,L*-Fenfluramine has been shown to have mildly aversive subjective effects (increased anxiety and confusion and decreased elation and positive mood scales on the POMS; Brauer et al., 1996), is discriminated from *D*-amphetamine (Chait et al., 1986), is not reinforcing in humans (Chait et al., 1987) or rhesus monkeys (Woods and Tessel, 1974). Although no clinical data from humans has indicated any long-term problems with fenfluramine, animals studies in rats, guinea pigs, and rhesus monkeys have indicated that there are long-term changes in 5-HT neurons that may even be irreversible in particular brain regions (Schuster et al 1986; Harvey and McMaster 1975; Neckers et al., 1976; Barnes et al., 1989). In monkeys the dose that produced these effects was 10 mg/kg/injection given twice daily for fourteen consecutive days. This dose is five times that necessary to produce a significant decrease in the monkeys eating behavior. Similar results have been obtained in rats at doses ranging 6.25 and 50 mg/kg/injection twice daily for four consecutive days. More recently, Ricaurte and his colleagues have shown similar long term effects on serotonin neurons following the repeated administration of *D*-fenfluramine which has recently been approved by the FDA for marketing as an anorectic medication. While these data must be taken seriously, it must be appreciated that world wide over 30 million people have been treated for obesity with the *D,L*-fenfluramine and 10 million with the *D* isomer. There is no credible evidence that at therapeutic doses fenfluramine produces any neurotoxic effects in humans. Because of its lack of abuse potential the Food and Drug Administration and the Drug Enforcement Administration have recently recommended that fenfluramine and its isomers be removed from the Controlled Substances Act.

The pharmacology of MDMA is well known from animal studies and there have been numerous studies comparing it to prototypic dopaminergic (e.g., amphetamine) and serotonin-

ergic (e.g., fenfluramine) drugs (for reviews, see Green et al., 1995; White et al., 1996). There is evidence that MDMA is self-administered in monkeys (Beardsley et al., 1986) suggesting human abuse liability. However, there are no well-controlled studies comparing the subjective (reinforcing) or objective (changes in temperature, heart rate or blood pressure) effects of MDMA in human subjects to other drugs, such as d-amphetamine and/or d-fenfluramine (McCann and Ricaurte, 1993; Grob et al., 1992; Liester et al., 1992). The only data that are available are retrospective subjective reports of symptoms experienced following MDMA ingestion (Greer and Talbert 1986; Downing 1986; Peroutka et al., 1988). In these reports, users describe a wide range of subjective effects ranging from "altered time perception" or a sense of "closeness" with other people, increased alertness, luminescence of objects, and decreased "hostility." It is important to note that the MDMA was usually taken in a social context in which people were told what effects they would experience. These expectations may have been of great importance in modulating the subjective experiences produced by MDMA. Common side effects or adverse effects reported by MDMA users include: insomnia, nausea, tight jaw muscles, dry mouth, diaphoresis, trouble concentrating, palpitations, tremor, and increased body temperature. Much less commonly, there are single case reports of liver failure, accidents, and cerebral hemorrhage (see Green et al., 1995 for review). Grob et al., (1996) have recently reported that low doses of MDMA (1 mg/kg) cause robust increases in prolactin and adrenocorticotropin hormone levels compared with placebo.

MDMA has more serotonergic activity than d-amphetamine and like fenfluramine, high doses have been associated with selective damage to serotonergic systems with a sparing of DA systems (Ricaurte et al., 1985; Ricaurte et al., 1988) in rats and non-human primates. Interestingly, in mice, MDMA caused DA not 5-HT neurotoxicity (Logan et al., 1988). Moreover, unlike other neurotoxins such as 1-methyl-1,2,3,6-tetrahydropyridine [MPTP] (Langston et al., 1983, 1984) which has been associated with severe depletion of dopamine and clinical symptoms of Parkinson's disease, there is no clear evidence that MDMA use results in any neurotoxicity in humans. Ricaurte and associates (1990) have reported decreased cerebral spinal fluid 5-HIAA (the primary serotonin metabolite) levels in subjects who had

previously taken MDMA (as well as other drugs)—although there were no physical or psychological symptoms associated with these changes nor was MDMA use verified or the potential influence of others factors controlled. Several human deaths have been reported following MDMA ingestion. The majority of the deaths have been attributed to underlying medical conditions, such as arrhythmias, accidents, and most recently to dehydration and hyperthermia at "rave" parties (Screaton et al., 1992; Henry et al., 1992).

#### Summary

MDMA is a widely used illicit drug in this country. The mechanism by which the drug exerts its unique effects in humans is not well understood and cannot be reliably extrapolated from the animal literature or retrospective reports in humans (Johanson and de Wit, 1989; Schuster, 1989). The studies in this application are designed to provide important information about the effects of MDMA in humans.

In the proposed studies, several subjective (Johanson and Uhlenhuth, 1980) and behavioral measures will be used to compare across drugs. In addition to standard subjective effects, the discriminative stimulus effects of amphetamine, fenfluramine, and MDMA will be compared. Drug discrimination procedures provide a powerful technique to classify and differentiate closely related compounds and provide important information concerning their mechanisms of action (Appel et al., 1991; Preston and Bigelow, 1991). MDMA is discriminated as amphetamine in d-amphetamine trained rats (Glennon et al., 1988), pigeons (Evans and Johanson 1986), and rhesus monkeys, (Kamien et al., 1986) but also as fenfluramine in fenfluramine-trained rats (Schechter 1986). In rats trained to discriminate MDMA, d-amphetamine did not substitute for MDMA, while fenfluramine partially substituted (Baker et al., 1995). Evans, et al. (1990), showed in a three-way discrimination (amphetamine, fenfluramine, placebo) in pigeons that MDMA had both amphetamine-like and fenfluramine-like effects with differences across individuals and across doses.

This study is being conducted in "recreational drug users." Individuals who have tried drugs of abuse but have not developed drug abuse problems are ideal from an ethical viewpoint since their failure to become drug abusers, even though they have passed through the age of risk for severe drug dependence (Anthony et al., 1994; Breslau et al., 1993) and

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have sampled some drugs of abuse, means that exposure to amphetamine in a laboratory study would be an insignificant risk factor. Amphetamine and fenfluramine are therapeutic drugs and are frequently given to naive patients as part of outpatient therapy with little evidence of iatrogenic dependence (Schuster, 1989). Finally, d-amphetamine in the 10 mg/70 kg to 35 mg/70 kg dose proposed in the present have been given to normal volunteers in previous studies with no reports of serious adverse reactions (Wolkin et al., 1987; Angrist et al., 1987; Heishman and Henningfield, 1991; Johanson and de Wit, 1989; Foltin and Fischman, 1991).

In addition to comparison studies using subjective, discriminative stimulus, and reinforcing effects, drug interaction studies may help elucidate the mechanism of action mediating various subjective, behavioral and physiological effects of drugs. In the present studies, 5-HT systems are being manipulated by acute treatments with fluoxetine (5-HT transporter inhibitor) and with tryptophan depletion. These studies, will provide important information regarding which effects of MDMA and d-amphetamine are mediated by serotonin. It might be expected for example that the activity increasing effects of MDMA would be unaffected by manipulations which decrease serotonin activity whereas any hallucinogenic effects of MDMA would be attenuated. •

Manuel Tancer, M.D. can be reached at:  
Department of Psychiatry and Behavioral Neurosciences  
Wayne State School of Medicine  
UHC-9B, 4201 St. Antoine  
Detroit, MI 48201  
E-mail: mtancer@med.wayne.edu

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**I** COMPLETED my one year research project at Yale in March and started to work in my laboratory in St. Petersburg, Russia in April of this year. Before I left Yale, I was only able to get Institutional Review Board (IRB) approval

underlying psychological mechanisms of ketamine-assisted psychotherapy of people with heroin dependency. MAPS arranged for the protocol to be reviewed and critiqued by several experts in drug abuse treatment research so that the results of the study

mechanisms of ketamine-assisted psychotherapy of alcoholic patients, which was carried out in 1995. This analysis will examine whether there are any correlations between treatment outcome and individual psychological traits and their changes caused

## From Yale to the lab in **St. Petersburg**

Evgeny Krupitsky, M.D., Ph.D., Leningrad Regional Center for Alcoholism and Drug Addiction Therapy

for my protocol of the study of ketamine-nimodipine interaction in alcoholic patients and to run the first patient in that study. I hope very much that Dr. Krystal's research team will continue the study. Also, a grant application submitted by Dr. Krystal and myself to the Civilian Research and Development Foundation is now being reviewed by the National Institute on Alcohol Abuse and Alcoholism (NIAAA). If we receive the grant we will conduct that study as a collaborative research project in parallel both in St. Petersburg and at Yale.

Upon my return to St. Petersburg I found the situation in my lab much worse than it was a year ago; the staff is paid very poorly and with delay, the budget is small, and it has been necessary to do a small repair in my office. The situation has gotten much worse on the whole in Russia within the last year, particularly after the presidential election.

Nevertheless, with support from MAPS, we are actively conducting the study of the clinical efficacy and

will be taken seriously in the United States. The staff of my laboratory began treating patients in the fall of 1996 when I was at Yale. At the present we have treated 15 patients (eight in the experimental group and seven in the control group). It is interesting to note that a very low non-hallucinogenic injected dose of ketamine given to the patients in the control group appeared to be quite effective for guided imagery and visualization during the psychotherapy. We hope to be able to inform MAPS Bulletin readers about the preliminary results of the first year of this three-year study in the fall of 1997.

Also, we are doing the statistical analysis of data collected in the previous MAPS-supported study of underlying psychological

by ketamine therapy. We hope this analysis will help us to define some individual indications for ketamine therapy as well as to better understand the underlying psychological mechanisms of treatment outcome.

We would like to express our deepest gratitude to MAPS for the support of our ketamine research which otherwise would not be possible. I am also grateful for the computer which MAPS presented to me when I was in the United States. That computer allowed me to work at home at nights and during the weekends, and also to access the Internet at home, which made my one year at Yale much more productive. •

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Dr. Krupitsky can be reached at [kru@lond.spb.su](mailto:kru@lond.spb.su)

MAPS donated \$8,000 to this study

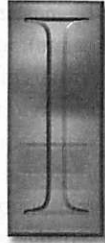
investigating the effectiveness

of ketamine-assisted psychotherapy

in the treatment of people with heroin dependency.

## A cognitive-psychological study of **ayahuasca**

Benny Shanon, Ph.D.  
Department of Psychology,  
Hebrew University



AM a cognitive psychologist and a philosopher. My empirical work is concerned with semantics and

natural language, thought processes and creativity, and the phenomenology of human consciousness. My philosophical work focuses on basic conceptual issues pertaining to cognition and the scientific study of mind. Until my encounter with ayahuasca I did not have any special interest in psychedelics nor any particular interest in or knowledge of Amerindian cultures. I came to ayahuasca by chance. In 1991, I was invited to participate in a scientific conference in Brazil. Being an avid traveler, after the conference I took off and travelled around the country. One thing led to another, and I found myself in Colônia Cinco Mil, the Daime [a syncretic religion bringing together elements of Christianity, Indian traditions and Afro-Brazilian folklore] community in the Amazonian state of Acre. I stayed with that community for a week, in the course of which I partook of ayahuasca four times. At the time I knew practically nothing about this psychoactive drink nor, in fact anything about the community which hosted me. Now a significant part of my research program is devoted to the study of ayahuasca and the psychology of altered states of consciousness. I would like to explain why.

MAPS has pledged  
\$5,000 to this research  
into the analysis of  
ayahuasca visions from  
a cognitive psychology  
perspective.

### Returning home

Whatever its context of use, ayahuasca is a powerful psychotropic agent. Its consumption usually induces vivid and magnificent visions as well as hallucinations in all other perceptual modalities. Pronounced non-perceptual cognitive effects are encountered as well. These include ideations, intellectual and personal insights, and mystical experiences. In addition, the brew has significant affective effects: after an initial phase of fear, one usually experiences great tranquility that often leads to euphoria and a sense of deep

self-fulfillment and profound happiness. When I returned to my own world after my initial trip and experiences at Colônia Cinco Mil, I immersed myself in reading whatever I could about ayahuasca. To my amazement, I discovered the images I had seen in my visions were of types similar to those reported by indigenous persons. As a cognitive psychologist, I was puzzled. How could I, a person with a totally different personal background, see what the Indians see? I realized that what may have presented itself was a manifestation of the universals of the human mind.

Cognitive psychologists are especially interested in such universals, for these are the determinants that define the basic feature of what make us human. Usually, the universals are of a formal or structural type—the deep syntactic structures of natural language, the basic operations of logic and reasoning, elementary schemes of categorization. But the commonalities presented by ayahuasca were different: they pertained to content. This presented a great puzzle to me. Could it be that serpents and felines, precious stones and palaces are also universals of the human

mind? Are there contents that are not culturally determined? Contemporary cognitive scientists are not prepared for affirmative answers to these questions. Nor is such a state of affairs to be accounted for by current neurophysiological theories of the brain.

**S**TUDYING THE scientific literature on ayahuasca, I further discovered that practically all of it pertained to either two clusters of disciplines. The first is that of the natural sciences—botany and ethnobotany, pharmacology and biochemistry and brain physiology; the second is that of the social sciences, notably anthropology. Important as they are, it seems to me that the two lines of research noted fail to touch upon some of the most crucial issues pertaining to ayahuasca. Both view ayahuasca from the outside, so to speak. Ayahuasca is intriguing because of the extraordinary experience it generates in people. Clearly this experience is psychological. The various natural sciences tell us what ayahuasca is made of and what brain events it may produce, but they say nothing—indeed they can say nothing—about the special experiences associated with the drink. The social sciences look at things from the outside too. Usually, anthropologists focus on the context of consumption but what they say about the phenomenon itself is quite limited.

Admittedly, ayahuasca

would not have been known to us in the West had it not been for the daring adventures of botanists and anthropologists. Yet, the real puzzles this brew presents pertain, I think, neither to botany nor to culture but rather to the human mind. As such, the study of ayahuasca belongs first and foremost to the domain of psychology, and more specifically cognitive psychology—the discipline investigating the workings of the human mind. While there have been some clinical psychological studies of ayahuasca, to date no cognitive investigation has been carried out.

#### **Research resumes**

What was further clear was that one cannot study the ayahuasca experience without extensive first hand acquaintance with it. After all, it would be strange to study dreams without having dreamt oneself, or to investigate music without having listened to various kinds of music.

Guided by the appreciation that the topic at hand should be studied from a cognitive-psychological perspective and on the basis of first hand experience, I decided to pursue the study of ayahuasca and to embark on an odyssey which was both personal and professional. First, I went for a short visit to Columbia. There in the Southern region of the Putumayo and the valley of Sibundoy I had my first encounters with ayahuasca in its native Indian context of use. Later from 1993 to 1995

I spent more than a year in Brazil and Peru. During this period I consumed ayahuasca in many different locales and contexts—traditional settings in the Amazon, healing sessions held by mestizo *curandeiros* (healers), indigenous rituals, rituals of the three syncretic religions União do Vegetal, Santo Daime and Barquinia, small groups of individual persons outside any institutional settings, and alone. Except for the first few sessions, all my sessions were summarized in writing immediately after the session ended. At times I also made tape recordings of sessions.

**I**N THE COURSE OF my stay in South America, I interviewed many users of ayahuasca regarding their experiences. At first, the interviews were conducted in a non-systematic fashion. Later, I returned to Brazil and Peru and employed a structured questionnaire. In it people were asked about the content of their visions, as well as other effects that the brew produced in them. The informants included indigenous and non-indigenous persons, medicine men and masters of ayahuasca ceremonies, people with long-time experience with the drink and ones who had taken it for the first time.

My study is couched in the appraisal that the bringing together of cognitive-psychological research and the study of ayahuasca benefits both fields of inquiry. The

conceptual framework and methodology of contemporary cognitive science allows a systematic analysis of the phenomenological data. With this, rule-like patterns in the ayahuasca experience may be defined and theoretical generalization about it may be made. On the other hand, the study of ayahuasca can contribute to cognitive psychology in that it presents new data pertaining to human consciousness, and thus new issues for investigation, new ways to look at things and perhaps new answers. As Aldous Huxley noted in conjunction with mescaline, the psychotropic agent reveals heretofore hidden and uncharted territories of the mind. With this, it may indicate that some features normally considered as defining characteristics of the human cognitive system need not necessarily hold. For instance, commonly made claims regarding human consciousness may be true only of “standard” consciousness, not of consciousness in general. But surely, any comprehensive theory of cognition has to encompass both the standard and the non-standard facets of the mind.

#### **Data analysis**

Currently, I am involved with the systematic analysis of the data I have collected. I have developed a codification system and all the data are now being coded and subjected to statistical analysis. The analysis is extensive, as it covers all aspects of the rich phenomenology of the



ayahuasca experience. Here I would like only to present a glimpse of one aspect of the data, that having to do with the interpersonal commonalities in the content of visions. The analysis at hand is based on two sets of data - the summary records of 70 sessions with myself and that of a group of 19 persons to whom I refer as independent drinkers. They are residents of Rio de Janeiro with an extensive familiarity with ayahuasca who at the present are not members of any institutionalized group. Having counted all the items indicated in my records, I ranked them by order of descending frequency. Likewise, I counted all items indicated in the interviews I had with the independent drinkers and for each item I counted the number of informants who reported having seen it; here, too, I generated a ranked list.

For my ayahuasca visions, the most frequent categories—those encountered in at least 17% of my ayahuasca sessions—were, in descending order: animals, beings (by this term I refer to creatures which are neither humans, nor animals, nor celestial ones), cities, palaces, birds, felines, serpents, artistic objects, celestial scenes, divine beings, landscapes, human beings, royalty and forests. The corresponding ranked list based on the interviews included all items reported by at least 47% of the members of the group. In descending order this list runs as follows:

beings, animals, palaces, human beings, serpents, ancient civilizations, birds, angels and divine beings, felines, forests, cities, landscapes and flowers. The similarity between the two lists is, I find, striking. First, note that except two—artistic objects and royalty—all the items on the list based on my experiences are also on the list based on the informant data. Second, except for two—ancient civilizations and flowers—all the items on the informant list are also on mine. It will be noted that there the category of ancient civilizations is very close to that of cities which appears very high on the list based on my own data.

**D**ATA I have collected from other subjects, not fully analyzed yet, corroborate these findings. In particular, we note that on the one hand the items reported by indigenous people and pertaining to the context of the forest—animals, birds and serpents—feature on both lists. Also appearing on both lists, are non-natural beings—the spirits from which ayahuasca derived its name. But also on both lists, and featuring very prominently, are palaces. On the basis of interviews, my impression is that this is actually true of residents of Amazonia. They too, very often, see magnificent palaces—items which are definitely not part of the Amazonian or South American milieu.

There is much more to

say about these and other data. It seems that strong support has been found for the hypothesis of universals which first drew me to the study of ayahuasca. Noting again that the two lists are based on two totally independent corpora of data, furnished from different populations and on the basis of sessions taking place in different settings and contexts, I allow myself to say that I find this most remarkable. The full analysis of the data, an attempt to find a cognitive modelling of them and a treatment of the various intriguing theoretical and philosophical issues raised by them are the subject of a book which I am now writing.

#### **Beyond data**

During my stay in South America many people who knew I am a university professor asked me whether my quest is personal or professional... The truth is that in all my academic engagements I have never separated the personal from the professional. Evidently, this is even more so with respect to this ayahuasca quest. There is no question that my engagement with this brew has had a profound personal effect on me. This is not the place to talk about this aspect of my odyssey. At this stage and context suffice it to say that a scientific analysis of the ayahuasca experience along the lines indicated here constitute only one facet of the study of this experience. It is a most important one and it fits our Western European

discourse, one which I value very much and in which my entire life is grounded. Yet, while attempting to advance the scientific enterprise, one should, I believe, always keep in mind its limitations. Objective scientific analysis is indispensable for the gaining of further understanding of the non-standard cognitive phenomena ayahuasca presents. At the same time, however, to have had ayahuasca and remain the Western European that one had been beforehand amounts to having missed some of the most essential and most precious things that the ayahuasca experience can offer. With this, however, one finds oneself outside the domain of cognitive psychology. One is led to the province of philosophical reflection and metaphysical speculation as well as to realms which are very personal and as such are beyond the context of public discourse. Some aspects of the ayahuasca experience are beyond the realms of any discourse whatsoever. With respect to these one can only acknowledge profound gratitude for a most wondrous and blessed gift that one has been fortunate to be presented with. And as Ludwig Wittgenstein has said, "What we cannot speak about we must pass over in silence."•

Benny Shanon, Ph.D.

Department of Psychology

Hebrew University

Mt. Scopus

91905 Jerusalem, Israel

E-mail: msshanon@pluto.mscc.huji.ac.il

# Cannabis in Acute Migraine Treatment Project

Ethan Russo, M.D., Neurologist,  
University of Montana  
Jeannine Mielke,  
University of Montana, Dept. of Psychology  
Laura Taylor Painter,  
Stuart Hall, Ph.D.,  
Brian Steele, Ph.D.,  
University of Montana, Dept. of Mathematics

THIS GROUP of researchers, with the aid of a \$3,500 grant from MAPS, has submitted a research proposal to the National Institutes of Health (NIH). The study was approved by the St. Patrick Hospital/Community Medical Center Joint Investigational Review Board, whose ruling was also accepted by the IRB of the University of Montana.

## Rationale

Cannabis, or marijuana, has been used for centuries for both symptomatic and prophylactic treatment of migraine. It was part of the Western pharmacopoeia for this indication even into the mid-twentieth century.

Current anecdotal studies continue to refer to its efficacy for this malady, while biochemical studies of THC and anandamide have provided a scientific basis for such treatment.

## Design

Thirty patients meeting International Headache Society (IHS) criteria of acute migraine with or without aura, and in whom treatment with subcutaneous sumatriptan has been ineffective or poorly tolerated, will be recruited. Exclusion criteria will include concomitant use of MAO inhibitor drugs, pregnancy, cardiac conditions, history of drug or

# Abrams protocol submitted anew

Donald Abrams, M.D.  
UC San Francisco

BELOW IS A SUMMARY of the protocol, "Short-term Effects of Cannabinoids in HIV Patients" which was submitted by Dr. Donald Abrams, et al., UC-San Francisco, to the National Institutes of Health (NIH) by a May 1, 1997 grant deadline. If accepted by the NIH, this study would cost nearly a million dollars and would take three years to complete. MAPS donated \$5,000 for the preparation of this grant application. NIH's decision regarding this application will be announced before the end of September, 1997.

## Summary

Our primary aim is to determine the safety/toxicity profile of cannabinoids in persons with HIV infection. We propose to do this by conducting a randomized, prospective study whose primary goal is to determine the short-term effects of smoked marijuana on the pharmacokinetics of indinavir, the immune system and the level of HIV-1 viral load in persons with HIV-1 infection. The study will be composed of three successive phases. The first phase will be a 4-day lead-in period in which baseline measurements are obtained. This will be followed immediately by a 21-day intervention phase in which subjects receive either marijuana cigarettes (Group A), dronabinol capsules (Group B), or placebo capsules

analgesic dependency.

After suitable informed consent, study patients will be randomized to receive study medications consisting of meperidine 1 mg./kg. I.M. along with hydroxyzine 50 mg. as an anti-emetic, or Marinol (dronabinol, synthetic THC) 10 mg. p.o., or an oral placebo capsule (Vitamin E), or alternatively, one or more inhalations of pre-sterilized, pyrolysed Cannabis, employing marijuana cigarettes with a standardized 4% THC content. The pyrolysed Cannabis dose will be titrated to the patients' responses. All patients will be monitored for one hour, at

which time a preliminary questionnaire regarding symptom relief, and a Folstein Mini-Mental State Examination will be performed. Blood samples for THC will be drawn at one and two hours in the dronabinol and placebo capsule groups and, and at ten minutes and one hour in the marijuana-treated patients. Folstein tests will be repeated at the two-hour mark. Patients will then be allowed to return home, with a designated driver, or via arranged transportation.

All patients will subsequently complete questionnaires at the four-hour, and twenty-four hour marks

employing visual analog scales to determine efficacy of their treatment with respect to pain levels, nausea and photophobia, and their perceived ability to engage in work or study activities.

The proposed budget for this study is \$145,500. After the review by a NIDA study section, the results of which will be known in November 1997, there are three possible outcomes. The study may be rejected outright, approved but not funded, or approved and funded. Should it be accepted, but not funded, the possibility remains that it could be completed through private funding sources. •

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Questions may be directed to:  
 Ethan Russo, M.D.  
 Dept. of Neurosciences  
 Western Montana Clinic  
 515 West Front St.  
 Missoula, MT 59807-7609  
 E-mail: ptm5739@montana.com

MAPS donated \$3,500  
 for the preparation of  
 Dr. Russo's application  
 to the NIH to study  
 the effects of cannabis  
 on migraine.

(Group C). Subjects in Group A will smoke one 4% THC-content marijuana cigarette three times daily, one hour prior to each meal. Group B and C subjects will receive dronabinol 2.5 mg or placebo three times daily, one hour prior to meals. In the last phase, subjects will be evaluated as out-patients (with no intervention) on days 28, 35 and 32. Subjects will be hospitalized in the General Clinical Research Center (GCRC) at San Francisco General Hospital for the first two phases of the trial (25 days) because, at present, legal use of smoked marijuana is restricted to medically supervised settings. The inpatient setting also permits us to measure plasma THC levels as a means to assess the total dose delivered, and to rigorously assess the safety

parameters and measures of possible efficacy, including appetite, food intake, body composition and weight. Eligible subjects will be currently receiving indinavir and will be experienced marijuana users. The primary outcomes are change from baseline in (1) HIV-1 viral load and (2) indinavir concentration (area under the curve). Because both indinavir and dronabinol are metabolized in the liver, interactions between these treatments could alter the concentration of indinavir, thus increasing its toxicity or decreasing its efficacy. In turn, lower indinavir concentration could result in an increase in viral load. We include Control Group B (dronabinol capsules) in order to simultaneously evaluate these outcomes in subjects treated

according to the current standard of care. We include Control Group C (placebo capsules) to establish baseline values under our experimental conditions. We will also summarize the short-term effects of smoked marijuana on variables associated with HIV-1 wasting syndrome by measuring changes over 21 days of use in endocrine function, appetite, energy intake, body composition and weight. If the current study demonstrates that smoked marijuana does not have the serious short-term side effects studied here, we would next research safety and efficacy of the chronic use of marijuana for HIV-associated anorexia and weight loss. These data will help to identify the most powerful measures to assess efficacy and provide estimates of effect size and variance. •

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Questions may be directed to:  
 Donald Abrams, M.D.  
 Community Consortium  
 3180 18th St., Suite 210  
 San Francisco, CA 94110

MAPS donated \$5,000  
 for the preparation of  
 Dr. Abram's application  
 to the NIH to study  
 the effects of cannabis  
 on persons with  
 HIV infection.



## Treatment of Childhood Schizophrenia Utilizing LSD and Psilocybin

Gary Fisher, Ph.D.

Now that the FDA has permitted research with LSD and psilocybin to resume, we feel it is important to share examples of a remarkable experiment, the results of which were not sufficiently taken into account because this line of research was prematurely halted in the mid-sixties due to political considerations. Childhood schizophrenia is still a difficult problem to treat and causes much suffering. It is a terrible shame that research done 35 years ago is still the last word on the use of psychedelics to treat these conditions.—Ed.

**T**HE RESEARCH DESCRIBED here was an investigation of the usefulness of LSD and psilocybin in treating severely disturbed children, the great majority of whom carried diagnoses of either childhood schizophrenia or early infantile autism. The work was carried out from April 1962 until June of 1963 at a state psychiatric institution. The children ranged in age from four years, ten months to twelve years, eleven months. The number of treatment sessions totalled eighty-six, each lasting usually eight hours, some up to twelve hours. Twelve children were treated with the number of sessions per child varying from one session to sixteen. The drug dosage\* varied from 50 to 400 micrograms of LSD and from 10 to 30 milligrams of psilocybin. A combination of both drugs was frequently used and the usual combination was 10 milligrams of psilocybin with 200 to 300 micrograms of LSD.

The work with the children followed the model of Hubbard which was described by Blewett and Chwelos in their monograph entitled *Handbook for the Therapeutic Use of LSD-25: Individual and Group Procedures*. The author had his training under Chwelos, beginning in 1959.

### Hypothesis

The working hypothesis of this study is that psychosis is a massive defensive system of repression-avoidance-denial in the service of protecting the individual from experiencing early childhood trauma. The repression is so massive that the individual ceases to experience himself with any validity. The individual exists isolated in a world without feelings and this world becomes meaningless. One of our little patients told me that he lived in a world of "no nothingness." It was hypothesized that the psychedelic drugs could break through this massive repression wherein the child would re-experience these traumatic events and release the pain bound to those experiences. He or she would acknowledge his own history. Further-

more, through experiencing the loving attention of the staff in a milieu of total acceptance, the child could begin to experience himself as a positive and valid person. The team consisted of a psychiatrist (who chose not to have an LSD experience but was medically responsible for the research), four psychology graduate students and three psychiatric nursing technicians. The author acted as lead therapist of this group. For any one session there were usually three to four staff, relieving each other throughout the day as the sessions were extremely intense and required very active participation by the staff. All staff had had their own experience with LSD and psilocybin, as it is accepted practice that in order to understand what was going on with the children one had to have had

\*LSD dosage are noted in micrograms, psilocybin are noted in milligrams. Morning pretreatment dosages of Librium (10 mg.) and methadrine (5 mg.) were given as well as 3 grams of dilantin the night before the treatment.

personal experiences with the drugs. As we progressed with the work it emerged that one staff person would become the primary therapist for each patient. Each session was continuously recorded for the verbalizations and behavior of the patient. Besides spending time with the patient during the treatment session itself, a total program had to be developed for each patient and that program communicated to all ward personnel to attempt consistency in the therapeutic approach. We were careful to include ward personnel who were not part of the treatment team in the ongoing progress of each patient and to enlist their cooperation in the development of a consistent attitude. As the ward personnel began to see the remarkable changes occurring in the children, they became involved and supportive in the ongoing care of each child.

#### **Ward conditions**

The ward in which these children lived was in a state of constant pandemonium. The ward housed some sixty children ranging in age from four to twelve who were the most severely disturbed children of a larger hospital population. There was constant screeching, fighting and destructive behavior. Many children were destructive towards the environment, to each other, to the staff and to themselves. The primary duty of the ward personnel was damage control. The noise level was always high, as many of the children were extremely hyperactive and vocal. Other children were very withdrawn, involved in repetitious physical motions and when interfered with would lash out at the intruder. There was little interactive or parallel play and any toys or material brought into the ward were soon destroyed. Feces smearing and random urinating were a constant problem. To say the least the environment was not conducive to good mental health.

#### **New behavior**

After nine months of the program and fifty-eight treatment sessions it was decided to continue the program with five patients of the initial twelve. The children discontinued from the program were characterized by a lack of speech and infantile autism and were the least responsive to treatment. They were extremely withdrawn and had no ability to relate to other children or adults. In spite of their severe limitations, all of them did have some marked response to the treatments. During the sessions they showed little responsiveness although some of them became hyperactive and were obviously having some sensory experiences and more interaction with the staff. One girl had a prolonged fear response. Marked changes occurred in the days following the sessions. They showed much more interest in relating to the treatment staff, became animated and playful and remarkably less withdrawn. One girl evidenced extreme frustration at not being able to verbally communicate as she had no language development. The youngest (four years old) and least developed child

kept trying to lead a treatment staff person down to the room where we did sessions. They all had interest in making physical contact with the treatment staff and one very autistic child became quite demanding to be held. This was all new behavior for these children. Consequently they all had behavior changes but their potential in relation to other patients was much more limited and we had limited time available to treat them.

Among the children with whom we discontinued treatment, one twelve year old girl had progressed so remarkably that she was able to attend public school during the day and return to the hospital in the evenings. It was felt that she had sufficiently

improved, was functioning satisfactorily in the school system and that further treatment was not crucial. Patty was the only patient who was not psychotic. She responded to the treatments more rapidly than the more disturbed patients. A short summary of her treatment will help illustrate the work.

#### **Patty's first session**

Patty had three sessions over a period of three months. Dosage for the sessions were 100 micrograms of LSD, 100 micrograms of LSD with 10 milligrams of psilocybin, and 200 micrograms of LSD. She was hospitalized because of her inability to function at home, in the school or in the community. Her behavior fluctuated from being withdrawn and uncommunicative to very aggressive and sadistic towards smaller children. She stole food and other items from other smaller children and when thwarted in her behavior had violent temper tantrums and had to be physically restrained and isolated. Although her IQ was tested at 72, her low functioning seemed to be caused by severe personality problems and it was estimated that her potential was near the normal range. During the first session she spent the entire seven hours regressing to an infantile oral state. She incessantly repeated, "I'm hungry" and when asked what she was hungry for, she did not reply but only restated her hunger. During the entire session she chewed and sucked on her clothes or others, her fingers, arms and anything or anyone she could reach. She was given an empty baby bottle with cotton stuffed in the nipple and she chewed and sucked on this for hours. It was clear that she was trying to draw nourishment from anything in her environment. During the session one staff member would sit with her, holding her hand or arm and gently hugging her or stroking her. We gave her constant tactile care. For about two hours she aggressively bit the nipple, stretching it and gnawing on it. She finally appeared to become exhausted and uncommunicative for almost an hour. In the latter stages she held hands with staff and smiled quietly without verbalizing. She appeared to be making genuine interpersonal contact.

#### **The second session**

In the month following her treatment Patty was much more subdued and did not want to talk a great deal about the first

The research described here was an investigation of the usefulness of LSD and psilocybin in treating severely disturbed children.

session. During the second session she spent a great deal of time sucking on the baby bottle but this time she said she wanted milk in it and we complied. She then went into a panic-like state and talked a great deal of her fear of being rejected by her parents. She insisted that we call them immediately and have them come and take her home. She was extremely anxious that she would be abandoned by them and at one time sadly said of her mother, "She doesn't love me." After some three hours of constant turmoil concerning her familial relationships and her severe agitation over the rejection by her parents, she slipped into a quiet state for a period of time. She then suckled on the milk bottle and when she took it out of her mouth she would repeat, "I am loved." After some four hours she said "I love my mother, my father, my brothers and my sisters, I never felt this way before. I love them." She said that she had never felt that she was loved and the feeling of being loved and loving that she was now experiencing was new to her. She then went into a state for about two hours which is best described as a deep trance state. She was completely still with no movement whatsoever, and was unresponsive to all verbal or tactile stimuli. She finally came out of it and started smiling but still remained unresponsive to any of our inquiries. After about another hour she got up and wanted to go for a walk outside. She was happy and smiling and occasionally would laugh out loud.

Following this session Patty again was much more subdued, her behavior changed remarkably in that her temper tantrums ceased and she was relaxed and content. She interacted with new maturity toward the staff and had a very positive relationship (it looked like adolescent adoration) with one of the male psychology students. They spent a good deal of time with each other.

#### **The third session**

The third session, two months later, was initially characterized by more oral regressive behavior. She asked for the baby bottle with milk and spent over two hours, biting on it, suckling it trying to swallow the whole bottle, but this behavior did not have a desperate quality to it. She seemed to be more playing with it, enjoying it, and her demeanor was quiet and content. She suckled for long periods and would drift off into a peaceful, tranquil state, completely relaxed, smiling at the sitters when making eye contact. She wanted to be quiet and we were quiet with her—touching her, hugging her, holding her hand when she reached out. She responded to visual stimulation such as a rose with delight and amazement. She thoroughly enjoyed the attention and affection of the staff. Again following the session she was much more mature, interested in relating to adults and wanted to go to school with kids her own age. Her temper tantrums and rage reactions and her stealing behavior had completely ceased. It was felt she was ready to try school off hospital grounds. She was

excited about this new situation and did not have any relapses.

Patty did not seem to experience fear of the new situation but was excited about the opportunity to be in new surroundings and she did very well. She continued to stay at the hospital after school hours and continued her supportive relationship with the staff. She became a very affectionate and loving child and her personality was fairly subdued and quiet.

#### **Timmy**

One ten year old severely autistic boy was continued on the program more as a challenge, as he was very resistant to abandoning his psychotic defenses. He was given a series of ten sessions

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over a period of ten months, with dosages up to 400 micrograms of LSD. Before treatment he was highly encapsulated, repeating a few phrases and displaying repetitive and catatonic posturing. His only contact with people was looking up their sleeves, he seemed to be checking if and how arms were attached. He would not allow himself to be touched and had no interaction whatsoever, other than attacking other children if they approached or touched him. His treatment sessions were characterized by agitation, fear, panic and anxiety. Occasionally he could relax and allow staff to hold him, rub him and gently feed him. He had long periods where he was totally out of contact with his surroundings. During a later session after some two hours of being out of contact, he sat up rather suddenly, his eyes widened with astonishment and he whispered, "I saw God." During later sessions he evidenced a much larger vocabulary and abandoned his echolalia and repetitive speech.

Timmy's first four sessions were almost exclusively devoted to biting, chewing and aggressive oral behavior. We observed this with all patients, evidencing extreme oral rage. In later sessions patients would attempt to eat us and everything in sight to fill the emptiness they felt. In spite of us not witnessing a lot of what we could identify as conflict resolution during the sessions, his behavior underwent a marked change. His physical attacking behavior subsided and he became interested in relating to other boys his age as well as the treatment staff. He wanted physical contact, became playful and enjoyed himself. His parents began taking him home for weekends due to these behavioral changes and they repeatedly told us that they were amazed at his improvement.

#### **Jenny**

This nine year old girl had eight sessions over a period of six months. Her IQ at age five was eighty-two. She had good verbal ability. Her behavior was impulsive, erratic and unpredictable. She was often very aggressive to other children, especially smaller ones, and attacked them viciously without provocation. When she attacked it was often with very flat affect, not associated with anger or retaliation. She was very oral, eating anything she could obtain and attempted to eat inedible objects. She would make

sexual advances to adult males. She was socially isolated, did not participate with others, and showed a pronounced inability to make any meaningful relationship with anyone, children or adults.

**J**ENNY'S SESSIONS were characterized by her reliving sexual abuse and her fear and alarm and ambivalence over the attention given her. She regressed back to her early infancy and gave repeated evidence of her neediness from her mother and her anger at not being properly cared for (both parents were alcoholics). She was extremely orally aggressive and had to be restrained a good deal as she acted out her anger by biting, scratching, pinching, kicking and attacking staff. Much of the time that she was acting out her affect was quite flat, other times she would be screaming and there was a great deal of conflict over toilet training and power struggles related to this event.

In later sessions Jenny became much more stabilized and she started verbally expressing her hatred of both males and females and wanted to kill babies and children. Behavior changes on the ward were significant. The affect became much more appropriate and she developed a buddy relationship with another one of the female patients, a twelve year old girl. Her erratic, aggressive behavior towards younger children completely subsided; she became much more interested in doing activities with her friend and interacting with adult ward personnel. She began to see herself as more grown up and took pleasure in her new identity. She went to school and was able to function satisfactorily in that setting. Her changes were remarkable and she became quite functional and was no longer a management problem.

**Stevie**

This nine year old, very small boy had a total of thirteen sessions over a ten month period. Prior to treatment Stevie was extremely withdrawn and isolated and responded to no one. He vacillated between extreme catatonia and excited catatonic rage reactions. He would become assaultive and destructive and especially physically aggressive towards younger and more helpless children. During these times he had to be placed in camisole (full straight-jacket) and seclusion. He never spoke to anyone, made no eye contact and lived exclusively in his own world. What was unique about this boy's psychedelic experiences was his ability to enjoy sensory experiences that are commonly experienced by the normal person. During the first two hours he would delight in the visual and auditory experiences and constantly comment about what he was experiencing.

We soon discovered Stevie had an extensive vocabulary which he never used in his usual state. He would say such things as "the music is following the designs," he would laugh and say, "I

love you, designs. Heart designs, ahhh, what a beautiful lady, a whole house full of changes." He rhythmically moved his body very gracefully to the music. He became extremely animated, smiling, sometimes giggling and appearing very much enchanted by his experiences. The long duration of this type of reaction was most unusual with these children. He would also become extremely quiet and peaceful, radiating a serene countenance that is witnessed when individuals are experiencing transcendental states. After the first few sessions he became very excited when told that he was going to have another session. He would run down to the treatment room and participate in preparing it by

setting out the things that we would typically bring - fruit, cookies, flowers, pictures, record albums and so forth. When the room was set up he would take a wash cloth, dampen it with cool water, fold it and lay down on the couch and cover his eyes with it, a ritual we would frequently use in attempting to get patients to travel inwardly. He would then want the music started. He was acting like a typical normal person in preparing themselves for a session.

In the second phase he would exhibit intense turmoil, conflict, fear and agitation. He indulged in the entire gamut of behaviors and emotions, biting, spitting, profuse and prolonged swearing and extreme hyperactivity, destructiveness and total catatonic withdrawal. He would carry on extended dialogues between two or possibly more people, evidencing conflict between his mother, father and himself. There was a great deal of anal and genital content to his conversation, with endless repetitions about "shit, piss, penis, nasty, black BM, death, black hearts, throw up, black breasts, black

diarrhea, chew it, afraid, burn it hurts." He would interrupt these dialogues by going to the bathroom, standing in front of the toilet, turning in a few circles and then urinating and when he ran out of urine he would continue this behavior twenty to twenty-five times. After an exhausting three to four hours he would appear very beaten up and would allow staff to sit with him, touch him and hold him, feed him and nurture him.

Touching moments would often occur with these small patients, near the end of one session a male sitter was sitting beside Stevie, holding his hand and Stevie opened his eyes and said, "Will you talk to me, David?," David said, "Yes Stevie" and after a moment said, "I don't know what to say?" to which Stevie replied, "Just talk to me with your eyes." This coming from a child who in his usual state was either catatonic or wildly destructive. Very often we had no idea how to interact with the children when they were obviously back in time wrestling with the demons of their pasts. They would be unaware of our presence and often the most we could do was to sit it out with them. Remarkable changes occurred with this boy. He started to relate to treatment staff and wanted to be touched and held. His manic

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and destructive behavior disappeared and he started relating to boys of his own age and older ones and struck up a bond with another boy on the program. They became good buddies. He became well enough to attend school and was able to function well in that setting. His parents were amazed at the changes and started to visit him and then began taking him home every weekend. He was very verbal, became very playful with the treatment staff and was behaving like a normal boy.

**Floyd**

This ten year old boy had a total of sixteen sessions over a period of eleven months. He had a history of extreme deprivation. His mother was an extremely agitated, narcissistic woman who made no effort to relate to him at all. For the first two years of his life, he was confined to a crib without any toys or any kind of stimulation. Prior to treatment he was constantly hyperactive and agitated, not wanting contact with others. He spent his days in the yard being completely involved in finding and looking at small bugs. When not in the yard he looked at two books which were about insects and bugs. When staff attempted to interact with him, he would only ask repetitive questions about bugs but was uninterested in any one responding to his questions. He appeared to be actively hallucinating much of the time. He would not carry on a verbal exchange.

In his first session Floyd had a remarkable response to the drug. Within thirty minutes he was obviously experiencing sensory changes and became relaxed and smiled a genuine human smile. His first words were, "What did you do with me? He's not dead yet." He looked at pictures in his book and said, "I'm not making it real, no I'm not." A staff member said "You're alive, aren't you?" to which he replied, "No, no, no, I can't be alive, this is too good." He looked back at the book and said, "Okay, it can't be, turn it off, turn it off, who's doing it." Looking at one of the staff he said, "Oh Judy, don't be real, don't be real." He touched another staff member, looked in his eyes and said, "Don't be real, don't be real, I've got to get out of here. I don't want to be alive, I am afraid of me, turn that off. Tom, don't be real. I'm not real no more. I'm blind. No, no, no, I *can* see." He then relaxed, looked at various staff members and said, "How come we are all the same?" He didn't ask this in an inquiring way but more as in a declarative way. He then drifted off, listening to the music and went into interior experiences. This lasted for some five hours. Finally, he started to become aware of his present time, became agitated and tense and started to cry, and sadly said, "I want outside." He kept repeating this phrase which we took to mean that the expanded experience he had was receding and he did not want to go back into his isolated world. This was a very painful time for the staff as well and we didn't know how to help him stay alive. This was a unique experience for us in that Floyd had such an immediate response and was able to leave his

psychotic defensive posturing and experience himself as a real living being.

During the next session, a month later, there was a similar reaction to the drug. After he started experiencing sensory changes he asked, "Is it real? Is the music real?" then incredulously stated, "We're real, are the feelings doing it?" He was told that having feelings made life real. He then repeatedly asked, "Is it real?" to which we gave affirmation. He then drifted off and started smacking his lips and making lots of movements with his tongue and lips. He said, "I am with Mommy, Daddy is here too, why don't you love me?" His speech then became incoherent and

he remained in this state for two hours. Finally he desperately started crying and said, "I want out. I want outside. I want out of here. Please, please, help me open the door, help me, help me, I'm real, I'm Floyd and I'm real. My own little boy." He then looked at staff and said, "Give me some more, please give me some more." We asked more of what and he replied, "Pills. Just give me some more, I want to get out." Staff told him that essentially he had to make himself real, that the pills let him know that he was real but that the pills wouldn't do it, that he had to do it. Floyd finally settled down out of this agitation and became very pensive and very, very sad looking. He went to a window, looked out and quietly said to himself, "Fountain View State Hospital. What a funny place to come back to." Obviously this was incredibly touching and the staff were tearful. The empathy we felt for him was deep, as we all had had the same feeling after coming out of a profound experience back to our usual normative reality.

The next four sessions were very similar to each other and markedly different from the earlier two. These sessions were characterized by his regression to earlier experiences where he had been physically abused and threatened. He repeatedly called the phrases, "I'll be good from now on. I'm sorry. I promise, don't hurt me, stop, stop, help me, help me." He frequently yelled, "Oh, oh, ouch, it hurts," and was physically trying to get away from being beaten. He would also have periods when he would attempt to strike out at the staff, smash himself against the wall and plead to be left alone. He was also very orally fixated and we gave him a baby bottle which he could suck, chew on and then violently fling away.

The seventh session was markedly different in that he did not appear to regress but rather stayed in contact with staff but became very belligerent, aggressive and sexually provocative. He would want to be cuddled by a female, rest his head on her breast and then make an aggressive biting gesture at her breast or suddenly start pounding her breast. He would also climb on a female, make undulating hip movements on her body and would attempt take his pants off. He would also approach a male, be sensual and want to be held and cuddled and then aggressively

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grab at the male's genitalia or scratch or bite his face. He would run around the room attempting to slap and punch everyone. He would growl and make guttural sounds, howl and become feral and aggressive.

The following three sessions were similar in many respects in that he acted out alternately oral aggression and his need to orally take in good things in the universe. At one time he took the author's fingers, sucked them, opened his mouth as wide as he could and attempted to swallow my hand. He put his hand on my elbow and pushed it in an attempt to eat my hand and arm. I said, "You are so empty you want to swallow me completely." His eyes became very wide and he vigorously nodded his head affirmatively acknowledging that's exactly what he wanted to do. He would also swing into seductive sexual behavior and alternate between being tender towards staff and then biting and trying to eat us. In subsequent sessions, he became obsessed with wanting to be taken to our homes. He would verbalize this precisely saying, "I am very unhappy here, I want to go to your home. I want you to take me to your house." Various staff would take him home after a session and he invariably was very calm, serene, extremely happy to be there and behaved admirably. He was affectionate, ate well, went to bed when told and evidenced none of his hyperactive, anxiety-ridden behavior. He also totally abandoned all preoccupation with bugs and stopped asking endless, meaningless questions.

**a**FTER A NUMBER of these home visits a lot of Floyd's session time was spent in trying to convince staff to let him live with them permanently. He started to attend school and was also able to function well in that setting. He developed a positive relationship with his teacher and developed intense relationships with three of the treatment staff and wanted to dominate their time. However, when they were with other patients he did not become aggressive to the other patients as he had earlier but patiently waited his turn. It was very painful for staff not to be able to meet all of his needs. He did start to relate to other children his age and had meaningful interaction with another boy his age but always preferred to be with the attending staff. His withdrawn, isolated behavior never reoccurred. He attended school and was well behaved on the ward, always looking out for staff to be with and to talk to.

#### **Nancy**

This eleven year old girl was the most difficult and challenging person we treated. When first introduced to me, she was in complete restraints twenty-four hours a day. She was in full camisole and her legs were tied to the bed. This was necessary due to her extreme self destructive behavior. If her hands were free, she would gouge out her eyes, hit herself in the head as hard as possible, bite her fingers, tear out her tongue. She was totally

emaciated, covered with swellings and bruises, black eyes in sunken sockets. She was incontinent and refused to eat. She was IV fed, she looked like a beaten up, starved, wild, eighty year old woman. She made no eye contact, did not respond to any physical stimuli, attempted to make guttural noises and spit, but unsuccessfully, as she was so exhausted. The attending physician felt that she would probably die. All known drugs had been tried. It was frightening to treat her with LSD, as my concern was her extremely frail physical condition and that she might die during a session.

Nancy was to be our first patient to treat and the physician's attitude was essentially that she was going to die anyway so we may as well attempt LSD as nothing else was available. I was fearful that this would be our first and last LSD session. She was given 200 micrograms of LSD. The session was very long and tumultuous. After thirty minutes she started intense screaming. She briefly stopped, muttered very softly, "I'm sorry" and went back to screaming. She looked petrified, made rocking motions, furtively looking around as though she were trying to avoid being attacked. She began to verbalize "Gary, hold on tight, hold on tight, hold me." She would scream, "Mummy, ow, oh, hurt, oh." She would go in and out of contact with her surroundings. She remained extremely agitated and frightened, alternating vehement screaming with animal growling. After about seven hours of this violent behavior and screaming, out of exasperation and exhaustion I said to her, "How long are you going to scream?" She stopped flailing about, became very quiet and still, looked at me very directly in the eyes and said very quietly, "I am going to have to hurt for a very long time, so just leave me alone." She then proceeded to flail around, resuming her screaming.

In the following session she was markedly different. She developed a voracious appetite, was very talkative with the staff and required no restraints. As she went by the dining room she stopped, looked in and said with amazement, "My God look at that, they're eating, that's nice." She then regally flourished her hand and said, "Let them eat." Later in the day she told one of the staff, "We went to see Dr. Fisher, Gary, didn't we? I had a camisole test. It was good." The next session, a week later, she was looking forward to the session, telling me in the early morning, "Let's get the test *now*." She was much more verbal and a great majority of the time was spent in regressing back to conflict with her grandfather. It was obvious she was reliving a sexual trauma, wailing and screaming, "No Grandpa, no, I can't stay like this. I can't do it, hurt Grandpa, hurt, bye Grandpa bye, I don't have to." She would moan and wail. She then began to attack herself and had to be restrained.

The following few sessions were characterized by extreme conflict over pleasure and pain, much of it sexual in nature. In her regressions she would evidence marked sensual/sexual pleasure,

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laughing, giggling and saying "Don't do it. Oh Honey, no fair. Oh Honey let go, let go. They will kill us. No more. Love me, love me." She would then alternate to fear and anguish, become agitated, start lashing out at herself. When physically held by staff she would bite, spit, claw and scratch at them. This alternation between indulgence and conflict went on hour after hour.

After five sessions, Nancy's ward behavior was totally different. She wanted lots of interaction with the treatment staff, became very demanding of attention and was jealous of other children getting attention. She became bossy, started ordering other children around and took on an "I'm in charge here" attitude. She wasn't hurtful to them, only making it clear that they were inferior and that she knew what was best for everyone. When another child was going to have a session, she would attempt to maneuver her way to the treatment room and when removed became verbally, but not physically, angry. When told one day that she couldn't have a "test" (her word for the session) whenever she wanted it, she said, "Oh, then let's talk. Let's go down to the visitor's room (where sessions were held) and talk." Once there she would lay down on the couch, close her eyes and tell us to be quiet. I went over, pulled her up and sat her in my usual chair and I lay down on the couch. She got quite indignant and told me, "You don't need help, I do. I want the test." She began evidencing behavior which indicated she considered having a session a privilege. She went on her best behavior when informed she was going to have the next session—helping other children, being polite and neat, smiling and being very charming. Prior to her seventh session one of the ward staff, Van, asked her what she was going to see during her next "test," she replied, "God and Van." He laughed and asked her how she could tell the difference. Very seriously she replied, "I'll show you. You'll be there and I'll show you." Van asked, "Where will that be?" She replied incredulously, "Why, in the visitor's room. That is the only place you can see God."

During the next few sessions, Nancy's behavior became quiet, she was always wanting to be in physical contact with one of the staff and especially with one of the males. She would pet and stroke his arm, softly caress his face, smile and sing softly. She wanted to be cuddled and not interrupted in her pleasure. Coming out of the session was usually stressful, she would cry and occasionally revert to soft biting. When told she couldn't bite, she would lick and kiss.

After five months of treatment the focus became on her self-destructive behavior. It was felt that she was no longer psychotic and was using her hitting herself as a way of manipulating and controlling staff for whatever she happened to want at that moment. This was a sure way of getting attention, it was very clear that she wanted to be the sole focus of staff's love, attention

and care. We decided that everytime she hit herself we would pinch her, step on her toes, and if we were outside, grab her and run her until she was exhausted. She was extremely indignant about this and gave up most of her self-destructive behavior. One day in a fit of pique she said, "Well I can't fool the A.M. staff anymore but I can still fool the P.M. staff." I looked at her directly and her mouth dropped open as in, "Oh, oh, I shouldn't have given that one away." That evening I met with the P.M. staff, made Nancy sit in the meeting, told them what she had said and clearly outlined how they all had to behave, just like the A.M. staff. She looked daggers at me but she knew that she had been

nailed. She then took to placing small pieces of paper on her hands, telling us that the paper prevented her from hitting herself. When we saw her with a piece of paper we would go over and knock it out of her hand and dare her with our stares, to do anything about it. She would often mutter, "God damn" and either pick the paper up or walk away. She then gave up the paper and started to carry kleenex around with her. When we would see this kleenex she would say, "Oh, I've got a cough" or "My nose is running and I need it," we would just look at her and mutter, "oh yea, I bet" and look at her with a message "How dumb do you think I am?" Soon she gave up the Kleenex routine.

The staffperson who was primarily working with Nancy left at the end of the fifth month and she was badly shaken by his departure. Her response was amazingly mature, she became depressed, sad and mournful and cried a great deal. She did not act out against herself or others. Another male student from the treatment staff, whom she knew well, took his place and she was

grateful for his attention. She would become frustrated at her lack of sufficient language in trying to describe her feelings to him. Sometimes she just held him and sobbed about her loss.

She began to attend school on half days and was able to adjust to the setting. It was hard for her to share adult attention and other children her age did not have her sophistication. She was very bright and didn't miss a thing. She had become affectionate and warm, loved to be physically touched, and smiled happily a great deal of the time. She had given up her self-destructive behavior and wanted to identify with the treatment staff and to be included in the grown-up world. Unfortunately she was often bored because there was a gross lack of stimulation available for her in the ward setting.

#### Jeannie

Jeannie\* was a girl who, when initially seen, lived in a totally encapsulated world. Her behavior consisted of hyperactive

\*The reader is referred to the author's article, Fisher, G; The psycholytic treatment of a childhood schizophrenic girl. *International J. of Social Psychiatry*; 1970, 16, 112-130. This paper is a fairly thorough description of sixteen treatment sessions of a twelve year old girl and describes the complexities and potential of this work which unfortunately is difficult to communicate in this present report.

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twirling, yelling a meaningless "word-salad," screaming, and violent attacks towards anyone who came within her personal space. She would work herself up into such manic frenzy that she would collapse in physical exhaustion. During her treatment course with psychedelic therapy Jeannie experienced a number of transcendental phenomena which established the core recovery from her psychosis.

**I**N SPITE of being blind, burdened with congenital dislocation of hips and knees and raised by a completely psychotic mother, this girl overcame horrendous madness in a devastatingly sterile and chaotic environment of a state hospital ward, to become one of the most tender, loving, compassionate and courageous persons the author has ever known. If Jeannie had had the opportunity to continue her sessions in a benign, safe and nurturing environment, she would have become a functionally superior human being. Our experience with this one girl was all the proof that was needed to attest to the dramatic usefulness of psychedelic drugs in treating the most seemingly intractable psychotic states.

It is most noteworthy to report that at least four of the children had identifiable transcendental experiences and were capable of communicating such experiences to us. It may be that some of the other children had similar experiences but were unable to communicate to us. However, given the age and degree of psychopathology of these children we were amazed that these spiritual experiences occurred.

#### **The work ends**

Our work was cut short by the political climate that developed after LSD hit the streets. Our project was closed down very quickly in mid 1963 and the staff associated with the project soon left. The abandonment of these children was an extremely painful experience for all of us. We were very surprised and touched with how supportive and accepting the children were of our departure when we said our good-byes. A follow-up was attempted ten years later but proved to be futile. The administration of the hospital was extremely agitated that the media would learn that LSD therapy was done there in the early sixties, as in the early seventies the political landscape around LSD was still very volatile.

To separate out the contribution of the drugs from our intense, devoted and caring commitment to these children was not an issue with which we struggled, although it was an issue often raised by other professionals. The author had worked for over four years with psychotic children in these same settings without drugs with very minimal success. The psychiatric technicians on staff had worked with these same children for many years, again without any significant results. It is only through personal experience with these compounds does one

appreciate the potential they offer. However, a strong cautionary word is offered. These materials are so potent that a person interested in using them must have very clear his intention and needs to have guides attend him who are experienced travelers in the realms of consciousness that are unfolded and revealed. We used to say that the most important ingredient in LSD was the person taking it. The second most important ingredient is the guide who sits with that person.

One issue that is generally not addressed in the literature is the vulnerability the psychedelic therapist feels which is inherent in this work. Often included in the expanded state of awareness achieved by the drug-taker is intimate knowledge of the therapist and his state of grace—or lack thereof. The therapist cannot hide from being "seen." Experienced therapists know this well (and hence the emergence of counter-transference) and one's vulnerability is total when sitting with a psychedelic voyager. We had not anticipated this phenomenon to occur with these children as they all appeared to be so disturbed and out of contact with "reality." We were amazed when, in sessions, they would tease us by mimicking us, sorely hitting our most vulnerable and protected spots. Happily, this was done with compassion, humor and acceptance, but nevertheless we got the message. Our humanity and humility were often tested and we were stunned by the children's perceptiveness and their ability to embrace us in our shame—we had so much and they had so little.

#### **Acknowledgment**

Invaluable work of the dedicated treatment staff is gratefully acknowledged: Con Cowan, Dave Dion, Bob Haynes, Phyllis Mesker, Tom Parsons, Ethel Pett, Suni Strom. The donation of LSD and psilocybin for the study by Sandoz Pharmaceuticals is also gratefully acknowledged. •

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Gary Fisher, Ph.D.  
1750 E. Ocean Blvd. #705  
Long Beach CA 90802

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## Ethical caring in psychedelic work

Kylea Taylor, M.S.



PSYCHEDELIC WORK is one powerful way to trigger transpersonal experiences. Transpersonal experiences are those

profound and often surprising moments in which we have access to a perspective larger than the one from which we usually operate. Methods and activities which have been found to elicit transpersonal experiences in some case are: Holotropic Breathwork and other methods of controlled breathing, fasting, meditation, body- and energy-work, EMDR, vision quests (combination of isolation, fasting, sleeplessness, nature's power), sensory deprivation, drumming (entrains the pulses of the body) and chanting (controls and paces the breath and elicits vibrational responses in the body with the tones). Even joggers have nonordinary states sometimes from the breathing and pushing past their limits.

Transpersonal experiences allow us to visit the past and the future, other points in space and other levels of experience; communicate with or inhabit other life forms; and feel the connections and oneness of creation. These experiences also have the potential to connect us to lost parts of ourselves: our bodies, feelings, intuitive abilities, or to some indefinable Higher Power or Spirit. The Institute for Transpersonal Psychology in Palo Alto, California, puts it this way, "transpersonal experiences generally have a profoundly transforming effect on the lives of those who experience them, bringing a new understanding of great love, compassion and non-ordinary kinds of knowing. They are then more fully aware of the distorting and pathological limitations of their ordinary selves that must be worked with and transformed for full psychological and spiritual maturity."

Ethical issues pertain to longings, feelings and motivations which resonate at our very

core. Powerful, shared experiences in the context of the psychedelic session and of transpersonal experience can bring to the surface compelling fears, needs, and longings in both the experiencer and the sitter. Our deepest yearnings, our fears and desires, and our assumptions are both catalyzed and framed by the psychedelic setting.

When we work under the magnifying glass of psychedelics as a sitter, we often get to view our unacknowledged material. Our unresolved issues tend to emerge in the form of countertransference. Ethical issues usually arise wherever there is a vulnerable experiencer and a sitter who is unconscious of how his or her longings, desires or fears are affecting the caregiving relationship. In a psychedelic session, there is usually a greater degree of vulnerability and transference on the part of the experiencer and a greater potential for unconscious countertransference on the part of the sitter.

### **Quantitative and qualitative differences in ethical psychedelic work**

There are differences between ethical issues that arise in professional psychedelic

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Kylea Taylor, 450 Jarvis Rd., Santa Cruz, CA 95065

phone: (408) 429-1732, E-mail: Kyleat@aol.com

work and those that typically arise in ordinary therapy. Some of these differences are quantitative. Since an experimenter is usually *more* vulnerable or *more* regressed, there is usually *more* need for careful attention to safety and boundary issues. Other differences are qualitative. For example, working with an experimenter who has an expanded consciousness during a multi-hour session is quite different in kind from working with an experimenter in an ordinary state of consciousness for a 50-minute office hour. Both the quantitative and the qualitative differences require a deeper willingness on the part of the sitter to engage in self-observation, self-reflection, and peer supervision. They also oblige the sitter to have certain special qualifications and competencies. We can outline three needs in working with people in psychedelic states that can, if not given a lot of conscious attention, produce a potential for betraying the trust of the experimenter.

- (1) The greater need for a safe setting for experiencers of nonordinary reality;
- (2) The need for an expanded paradigm which can contain the kinds of experiences people have in nonordinary states; and
- (3) The potential for stronger, more subtle, and more complicated transference and countertransference in psychedelic sessions.

**The greater need for a safe setting for persons experiencing nonordinary reality**

Experiencers of psychedelic states are more suggestible and vulnerable. They are more likely than those in ordinary psychotherapeutic work to experience age regression, to need therapeutic touch, and to feel strong personal desires, fears and spiritual longings. They may have great difficulty making the transition between ordinary and nonordinary reality when they are moving in either direction. Because of the expansive effect of psychedelics, experiencers are likely to have greater cognitive dissonance between this universal or comprehensive perspective and their usual world view. They may have more need for an understanding, supportive network and adjunctive resources than clients in ordinary therapy. Experiencers and sitters may need stronger and clearer ground rules for an adventure into nonordinary reality. Sitters also need personal familiarity with the substance they will be using with others. It will certainly be useful if they have had training and practice in when and how to

(as well as *when and how not to*) intervene verbally, non-verbally, or physically in the nonordinary state experiences of others.

**The need for an expanded paradigm**

There is a need for an expanded paradigm which can contain the kinds of experiences people have in nonordinary states of consciousness. Sitters need experience with a broad spectrum of the kinds of situations that may arise. Stanislav Grof has mapped an expanded territory of the psyche beyond the modern Western's world's biographical and biological psychology.<sup>1</sup> Shamanic traditions and ancient religions offer other maps. Grof and others have been clear that nonordinary states and perinatal and transpersonal experiences are not pathological, but actually are a natural way in which humans seek healing and wisdom.

**I**T WILL USUALLY BENEFIT the experiencers if their sitter has studied how psychedelic work fits into a conceptual framework of therapy. The openness of the sitter to extraordinary experiences is a key factor in how the experimenter accepts his or her own emerging material while having a psychedelic session. The degree to which the sitter accepts such experiences may play a large part in whether the experimenter can let these experiences develop, amplify, integrate. Some of the experiences that would be difficult for a sitter to affirm without an expanded paradigm include: past lives, ritual abuse, "demonic possession," ecstatic states, spiritual concepts, emotionally charged images or themes from other religions, reliving birth, UFO abductions, or existential suicidality. Adequate training to provide information for informed consent and to sit with psychedelic experiencers requires many personal therapeutic sessions as the experimenter in nonordinary states of consciousness.

At this point in time most active researchers seem to meet the unspoken prerequisite for involvement in professional sitting—they have integrated an expanded paradigm and have done prolonged, personal psychedelic work. But there is considerable precedent in the world for allowing theoretical learning to suffice on resumes for academic and medical professional employment. Steps need to be taken to ensure that if psychedelic research is someday adopted by mainstream science, the job qualifications for sitter will include that he or she has done effective, deep personal work in nonordinary states.

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### Personal issues of counter-transference: Money, Sex, and Power

Sitters in psychedelic work are called upon to examine their own personal and spiritual fears and desires and to take responsibility for doing what is necessary to keep these attachments to outcome from adversely affecting the experiencer. Experiential ethics training could prevent some ethical missteps. With systematic training about common ethical pitfalls and self-reflection on their own vulnerabilities to unethical behavior, sitters would increase their awareness and probably decrease the possibility of serious ethical problems. A thorough training would also include how to give and receive peer supervision in the area of ethics.

There has been much written about the ethical pitfalls into which therapists have stepped because of personal desires and fears that arose in the course of ordinary therapy. These personal issues usually have headings such as Money, Sex, and Power. Ethical missteps occur when we want something for ourselves even at the expense of the person for whom we are sitting. The Money area relates to feelings of insufficiency which move us in directions not best for our clients. We want a favor; we want money, we want self-esteem and in some way we feel insufficient to get these things without the client. In the Sex area, we want touch, or we want sex. In the Power area, we want to be seen as a healer; we want renown for the research results, we want the person to do it our way. We also want acknowledgment for knowing how the process should or will go, or knowing what's happening before it happens, as it's happening, or after it's over.

**O**UR FEARS, as well as our desires might cause us to take an ethical wrong turn. In the Money area (insufficiency) we fear we are not good enough. We may try in subtle ways to prove that to ourselves, to the experiencer or to the public (e.g., through publishing). In the Sex area, we may be scared of touching the person—afraid, perhaps, of our own inability to uphold appropriate professional boundaries. We might in such a case withhold touch even when the experiencer is regressed and needs a corrective nurturing experience.

In the Power area, we may be afraid of misusing power. We hold back actions that would be appropriate and helpful to the experiencer's process. These can be subtle examples. We may doubt, for example, that an

intervention is really what the experiencer needs. We may fear that it is really something we need. Oddly enough, it may be both. We may feel powerfully drawn to hold someone and it may be very appropriate in the context of the experiencer's process. If through need and fear of that need, the sitter *withholds the nurturing*, she is zealously oversteps the mark even while trying to be ethical. Either because of our personal fears or our personal desires, we can easily stray from the path of *right relationship* and miss doing what is in the best interests of the experiencer.

Let me here define what I mean by right relationship. The Buddhist concept of right relationship is akin to Jesus' injunction, Do unto others as you would have them do unto you. It implies that we take into account the bigger picture of how our intention and actions in relationship affect the other, and how that in turn affects still others in a rippling outward motion. It implies that we see also the effects on ourselves when we take certain actions toward others. In this definition the concept of others applies to persons and animals, but also to plants, ecosystems, planets, and numinous archetypes.

A seven center model<sup>2</sup> from yoga describes the areas of life experience. I combined it with the Buddhist idea that attachments (fears and desires) skew our sense of *right relationship* to each other and to Spirit to show how these attachments act in particular areas of caregiving experience. The model is designed to assist caregivers to identify with self-compassion their vulnerabilities in order to prevent harm to themselves and clients.

### Transpersonal issues of countertransference: Love, Truth, Insight, and Oneness

I have identified four additional areas of ethical issues that pertain to transpersonal or psychedelic work.<sup>2</sup> They are Love, Truth, Insight, and Oneness. Just as with the personal categories, these "spiritual" or transpersonal areas have desires and fears associated with them which might pull us off course in our caring relationship.

In the area of Love, a transpersonal love is often confused with a personal love. Angeles Arrien has written about *professional love*,<sup>3</sup> which is an open-handed, well-wishing, positive regard. As sitters, we could deviate from *professional love* because of desire to be personally cherished, or to be cherished as a spiritual guide. We could equally miss the mark because

**Personal Fears & Spiritual Fears**

Fear of losing self-identity  
Fear of losing God as *Other*

Fear of seeing  
Fear of losing denial  
Fear of misusing spiritual powers

Fear of punishment  
Fear of criticism  
Fear of responsibility  
Fear of being unmasked

Fear of intimacy  
Fear of separation  
Jealousy

Fear of losing control  
Fear of misusing power  
Fear of having no effect

Fear of transformative energy  
Fear of touching  
Fear of sexual contact

Fear of change  
Fear of insufficiency

**Personal Desires & Spiritual Longings**

Longing for union  
Longing for transcendence

Longing for mystical understanding  
Longing for psychic powers  
Desire to understand the therapeutic process

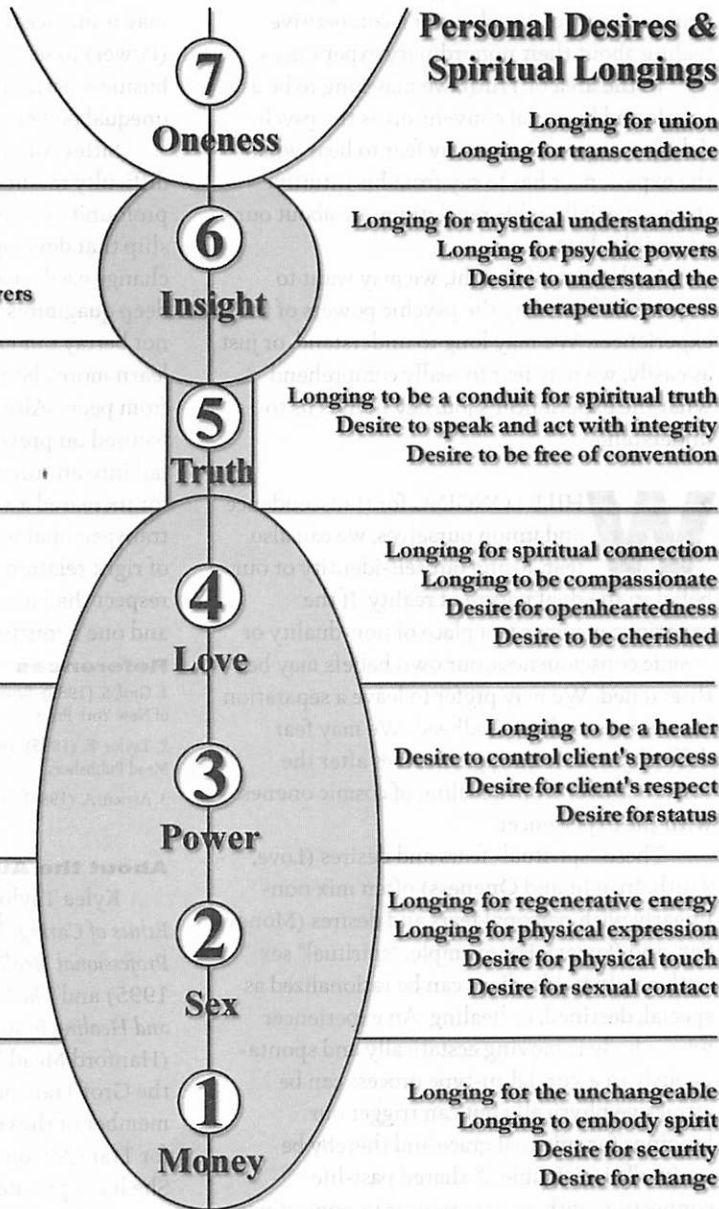
Longing to be a conduit for spiritual truth  
Desire to speak and act with integrity  
Desire to be free of convention

Longing for spiritual connection  
Longing to be compassionate  
Desire for openheartedness  
Desire to be cherished

Longing to be a healer  
Desire to control client's process  
Desire for client's respect  
Desire for status

Longing for regenerative energy  
Longing for physical expression  
Desire for physical touch  
Desire for sexual contact

Longing for the unchangeable  
Longing to embody spirit  
Desire for security  
Desire for change



**Caregiver Vulnerabilities to Ethical Misconduct**

of fear of intimacy. We might also experience spiritual envy of our client or a competitive feeling about their nonordinary experiences.

In the area of Truth, we may long to be unaffected by social convention as the psychedelic journeyer. Or, we may fear to hear what the experiencer has to say from his intuitive state, especially if his revelations are about our personal selves.

In the area of Insight, we may want to acquire in some way the psychic powers of the experiencer. We may long to understand, or just as easily, we may fear to really comprehend what the experiencer's journey invites us to understand.

**W**HILE LONGING for transcendence and union ourselves, we can also fear losing our self-identity or our belief in the dual nature of reality. If the experiencer comes to a place of non-duality or cosmic consciousness, our own beliefs may be threatened. We may prefer to leave a separation between us and the Godhead. We may fear difficulty in extricating ourselves after the session is over from a feeling of cosmic oneness with the experiencer.

These "spiritual" fears and desires (Love, Truth, Insight and Oneness) often mix nonlinearly with personal fears and desires (Money, Sex, and Power). For example, "spiritual" sex with a vulnerable client can be rationalized as special, destined, or healing. An experiencer whose body is moving ecstatically and spontaneously in a kundalini-type process can be attractive physically but can trigger our longings for spiritual grace and thereby be *spiritually* irresistible. A shared past-life connection with an experiencer in nonordinary states may "justify" certain otherwise unjustifiable actions in ordinary life. In yet another scenario, a sitter may misinterpret the devotion of an experiencer (transpersonal Love) as personal love. The sitter may therefore assume that a personal sexual (Sex) relationship is appropriate and wanted by the experiencer. In another example, an experiencer's and sitter's

shared vision (Insight) for transpersonal work may influence the researcher to use his influence (Power) to seek money from a client or enter a business partnership even when there is an unequal power relationship between the two.

Sitters often feel that they will have no difficulty maintaining ethical conduct. Yet the profound or intense sitter-experiencer relationship that develops in psychedelic work can change easily avoidable pitfalls into invisible, deep quagmires. The best insurance that we will not betray our client's trust is to be willing to learn more about ourselves to seek consultation from peers. Although in this article I have focused on preventing the consequences of the fall into an "unethical pit," the greater reward for increased awareness of ethics in transpersonal work is enjoying the quality of right relationship itself with the love and respect that are implied therein for self, other, and one's spiritual path. •

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#### About the Author

Kylea Taylor, M.S. is the author of *The Ethics of Caring: Honoring the Web of Life in Our Professional Healing Relationships* (Hanford Mead 1995) and *The Breathwork Experience: Exploration and Healing in Nonordinary States of Consciousness* (Hanford Mead 1994). Kylea is on the faculty of the Grof Transpersonal Training and is a member of the contract faculty of The Institute for Transpersonal Psychology in Palo Alto, CA. She has a private practice of consulting and training based in Santa Cruz, CA.

See <http://www.hanfordmead.com> for more information about ordering Kylea's books. The Grof Transpersonal Training website is <http://www.holotropic.com>. The Institute of Transpersonal Psychology website is <http://www.tmn.com/itp/>.



## Conference Highlights: Hallucinogenic Drugs in Experimental Psychiatric Research Vaals, Netherlands—March 13-15, 1997

Julie Holland, M.D.  
Bellevue Hospital, NYC  
Faculty, New York University Hospital Medical Center



**on** MARCH 13th through 15th, 1997  
at the Hotel Casteel Bloemendal in

Vaals, Netherlands, I attended a three day workshop entitled Hallucinogenic Drugs in Experimental Psychiatric Research. Having a long standing interest in MDMA (Ecstasy), psychedelics, and schizophrenia, this was one conference I was not about to miss. The workshop was quite small and limited to forty people, so I felt relieved when, after some petitioning, I was allowed to attend. The "Tryptic-Workshop" was organized by the Department of Psychiatry and Psychotherapy, Technical University of Aachen, Germany in collaboration with the Department of Psychiatry and Neuropsychology, University of Limburg, Maastricht, Netherlands and the Service de Psychiatrie, Centre Hospitalier Universitaire, Liege, Belgium.

The most impressive feature of this gathering, for me, was the professionalism of the presentations. Serious scientific studies had been performed or were in progress, and their findings were presented in a manner similar to many pharmacologic conferences which I have attended—totally above board, with no excuses or innuendos. The data presented was geared to a doctorate level of understanding, with the majority of the presentors and audience members being M.D.'s and Ph.D.'s.

### Opening event

The weekend opened with a wine and cheese 'getting to know you' party on Friday evening. At this point in the weekend I met some recent MAPS Bulletin contributors (Alex Gamma from Switzerland and John Halpern at Harvard) as well as the MAPS networks coordinator, Sylvia Thyssen. It was a pleasure to meet Sylvia after years of seeing her picture and carrying on an E-mail correspondence. I think it is important for MAPS members and other researchers to get a sense of what studies are going on, where, and by whom, and I found Sylvia to be a very able diplomat within the international psychedelic research community.

### Saturday morning

The proceedings were opened by Prof. Sass, who introduced the history of the tradition in Germany of experimental work with hallucino-

gens. Dr. Sass, a psychiatrist and psychopathologist, is not a specialist in psychedelics, but he is interested in the changes brought about by them. He described how the research tradition of working with hallucinogens has its roots in Heidelberg, with Kurt Beringer. Beringer described the effects of mescaline in detail in the 1927 *Künstliches Psychomodell* which established the groundwork for the experimental psychosis model.

Dr. Efi Gouzoulis-Mayfrank, a remarkable woman who is in the midst of performing MDE (methylene-dioxy-ethamphetamine, "Eve"), psilocybin and methamphetamine experiments, gave the first presentation. She reviewed the historical context of hallucinogen research, citing the mescaline phase of research as beginning in the late eighteen hundreds and giving way to the LSD phase beginning in 1943,

and then finally describing research with PCP in the nineteen fifties.

Gouzoulis-Mayfrank discussed the problems and challenges of interpreting symptoms in schizophrenia, which are quite complex and which represent a wide variability of sub-syndromes. She stressed that her research seeks to shed light on the onset of psychotic episodes, not schizophrenia as a whole, which she and others feel may be a syndrome, and not a disease.

#### 1943-1960's: The LSD phase

This phase of research was characterized by LSD, psilocybin, DMT, mescaline, phencyclidine and the anti-cholinergics. At the time, areas of interest in psychiatry were the model psychosis and the use of psychedelics for screening for latent schizophrenia. There was also a prevalence of psychoanalytically oriented research on consciousness and personality, research on religious experience and psychotherapy research. In 1962, Hollister argued against the hallucinogen experience as a model for psychosis, describing the ongoing debate of the appropriateness of hallucinogens as psychotomimetics (mimicking psychosis). This phase of research thrived until research was restricted in 1966 following the wide use and abuse of these drugs in non-research contexts.

#### On the term "hallucinogen"

I see that the term *hallucinogen* has come up more than once already, so I suppose I must acknowledge the ever present nomenclature debate: please understand that psychedelics are most frequently called hallucinogens in medicine, as in the title of the weekend conference. Hallucinogen is the accepted terminology in the American psychiatric diagnostic manual, for example. It is also an accepted legal term and the one used to group many scheduled drugs. The older term psychotomimetic was also used in both law and medicine, but much less so now. I, too, prefer the less pejorative term *psychedelic*, but the scientific research community at large, for the most part, seems only willing to discuss these neuromodulators as capable of creating models of psychosis, replete with hallucinations. Most of the presentations during the conference had to do with comparing acute drug intoxications with psychotic states found in illness, usually schizophrenia, and sometimes mania. There was some attention given to using these substances as treatments, certainly this was discussed with more enthusiasm privately than what was publically presented.

#### Classification systems

Dr. Karl-Artur Kovar delineated the different classes of psychotropes to be discussed over the weekend: under the heading of phenethylamines are stimulants like amphetamine and methamphetamine, hallucinogens such as mescaline, 2CB, DOM and entactogens such as MDMA, MDE, MDA and MBDB. Dr. Kovar referred to MDMA, MDA and MDE as the "Ecstasy group" and described the complexity of their mode of action. Of course, there are many other psychedelics which fall under different headings, such as tryptamines (DMT, 5 MeO-DMT, and others), phencyclohexylamines (PCP, ketamine and others), and indolalkylamines (LSD, psilocybin, ibogaine, bufotenine, and DMT). To confuse matters slightly, it should be noted that most of these indolalkylamines can also be classified as tryptamines, as there is a tryptamine subclass of indole derivatives. Psilocybin is 4-phosphoryloxy-DMT, and bufotenine is 5-hydroxy-N,N,DMT, and LSD, although not a tryptamine, does have a molecular structure that includes a tryptamine molecule. During the Q&A after Kovar's presentation, the fluoxetine effect on reversing the "neurotoxic effect" of MDMA seen in laboratory animals was brought up.

#### Prepulse inhibition (PPI) research

The next presenter was Mark Geyer, Ph.D., UC San Diego, who explained the effects of various compounds on a measurement called prepulse inhibition (PPI) of startle response. PPI is a great, non-invasive way to measure something called sensorimotor gating, which could show a deficit in how someone filters out stimuli. Habituation, the process of 'tuning out' a repetitive stimulus, is a precursor of selective attention. Most schizophrenics show deficits in habituating to stimuli and in learning from a cue (like a prepulse—a smaller stimulus given before the larger one, to warn the subject of an impending cause for startle). In rats, hallucinogens such as LSD, and glutamate antagonists (also called NMDA antagonists for the type of glutamate receptor they interact with) like PCP and ketamine all disrupt prepulse inhibition and retard the process of habituation. In contrast, the amphetamines enhance the startle response, and low dose MDMA enhances prepulse inhibition in rats. A member of the audience, Franz Vollenweider, who was to present his MDMA findings the next day, reported the information that MDMA has enhanced prepulse inhibition in human volunteers as well, at a dose of 1.7 milligrams

I am in the process  
of collecting case studies  
of people with  
schizophrenia who have  
experimented with MDMA,  
if anyone reading this  
would like to  
contact me,  
I would appreciate  
any leads.

per kilogram body weight. (This comes out to 119 mg. for a 150 pound individual. The commonly accepted 'recreational' dose of MDMA is 125 mg. initially, with an optional delayed 50 or 75 mg. "boost" dose.) These findings reported by Geyer and Vollenweider help to make the case that there may be a place for human studies with MDMA in the context of schizophrenia research. I have great hopes that low dose MDMA may help people with schizophrenia to pay closer attention, be less socially withdrawn and suspicious, perhaps talk more and connect with others. I have certainly seen and read of these effects when MDMA is used in people without this disease. Research was conducted in the past to suggest that schizophrenics can benefit from low dose amphetamines to combat their negative symptoms. The concern is, will MDMA make people with schizophrenia more psychotic? I am in the process of collecting case studies of people with schizophrenia who have experimented with MDMA, if anyone reading this would like to contact me, I would appreciate any leads.

#### **The APZ**

Later in the morning of the first day, we heard about various ways to measure altered states of consciousness (ASC), with special attention paid to the German APZ questionnaire as described by Adolf Dittrich of Basel, Switzerland.

Dittrich developed the APZ in 1975. It is a 159 item survey, designed to assess specific states of consciousness rather than personality. Questions are presented in the first person singular. It measures feelings of oceanic boundlessness, dread of ego-dissolution and visionary restructuralization. Dittrich drew parallels of these three to Huxley's *Heaven and Hell* and *Visions*. He went over the definition of altered state of consciousness and commonalities between ASCs achieved by different methods. He cited a recent study done with 339 subjects tested with DMT, psilocybin, THC, NO<sub>2</sub>, perceptual deprivation, hypnagogic states, autogenic training, sensory overload and hypnosis. Subjective reports, keyed by independent reviewers, correlated well with APZ results.

The instrument itself has been rigorously tested, and it is the standard in Europe for assessing ASC. It has been translated into English. Psychometrically improved versions have been designed that utilize visual analog scales. Several of the European presenters were using the APZ questionnaire as an outcome

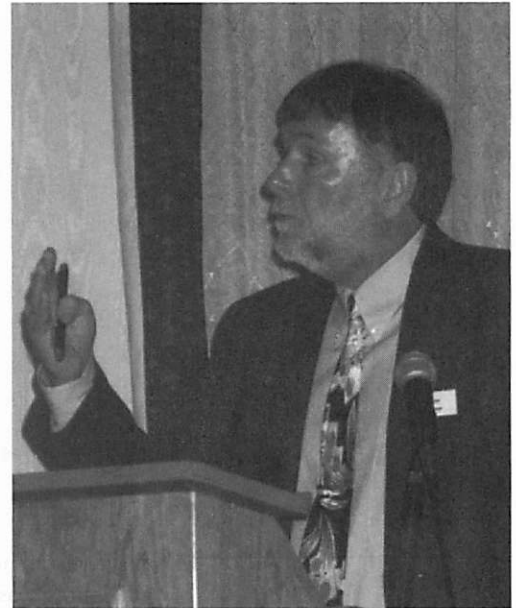
measurement of the subjects' experiences with study drugs. Unfortunately, no one was using Rick Strassman's Hallucinogen Rating Scale (HRS). According to Dittrich, the items in the HRS are not internationally accepted criteria and were tested in too few subjects. It has not been translated into German.

#### **On semantic networks**

After lunch there were two lectures on comparing schizophrenia with a psilocybin model of psychosis, with one looking at the analysis of facial expression and the other focusing on semantic networks and "loose associations," as tested by priming cues (related vs. unrelated words given before a test word, with the subject having to decide if it was a real or nonsense word). The results showed that in "psychosis" whether schizophrenic or psilocybin-induced, people widen their associations between words, so an indirect semantic primer will hasten the word choice much as a direct primer would ('lemon' before 'sweet' as opposed to 'black' before 'white'). This last study was eloquently presented by Dr. Manfred Spitzer, soon to be leaving Heidelberg to become the chairman of a different psychiatric department elsewhere in Germany. Dr. Spitzer also capped the conference with an intriguing and somewhat daring summary including the possibility of an actual beneficial state from these substances, specifically the evolutionary advantage of "loosened associations." He feels that a decreased anxiety state is conducive to inducing change via these new pathways, created by broader activations. His capping lecture did seem to allude to the horizons ahead, offering the possibility of treatment modalities involving psychedelics, and admitting that it was not fully discussed over the weekend but it was possible that "the use of hallucinogenic agents may actually have psychotherapeutic effects."

#### **The glutamate hypothesis**

The last two lectures of the first day covered familiar ground for me, the glutamate hypothesis of schizophrenia and experiments with NMDA type glutamate antagonists, specifically ketamine. Glutamate is the most abundant excitatory neurotransmitter in the brain, and the resulting intoxicated state that



Mark Geyer, Ph.D., San Diego



Dr. Manfred Spitzer, Heidelberg

ketamine brings is felt to be reminiscent of many symptoms of schizophrenia, creating not only paranoia, delusions, hallucinations (all positive symptoms) and disorganized speech, but also negative symptoms—the group of behaviors manifest by social and emotional withdrawal. It is felt by many schizophrenia researchers that the glutamate antagonists ketamine and especially PCP, offer the best model for schizophrenic psychosis, since they combine both

positive and negative symptoms. One thing intriguing was that when discussing other drugs such as psilocybin or mescaline, the European researchers routinely specified the correlation of their intoxications with the acutely psychotic state, but not the chronic residual phase, of schizophrenia. This is a differentiation not routinely made in American schizophrenia research, where we tend to clump schizophrenics into either “positive symptoms” or “negative symptoms” groups, and often specifically seek out one group or another for research subjects.

### Ketamine

Two American M.D.'s, John Krystal from Yale and Henry Holcombe from University of Maryland, spoke of their clinical studies giving ketamine to healthy volunteers and schizophrenics. This is pretty much standard schizophrenia research fare, but was included in the conference due to ketamine's ‘psychedelic’ status, I presume. Dr. Krystal also tied in some prepulse inhibition data, reporting that in healthy volunteers, ketamine attenuates the sensory gating, and decreases the prepulse inhibition, thus mimicking results seen in schizophrenics. Dr Holcombe, commenting on work begun by Carol Tamminga, also correlated an area with the most increase in cerebral blood flow during the ketamine induced state, with the same brain region recently identified in PET studies during active auditory hallucination—the left superior temporal cortex. He brought up a repeated question for researchers: what does it mean when an area of the brain is turned on under pharmacological conditions?

### Mescaline and SPECT brainmapping

Sunday morning gave us four lectures. Leo Hermle, a researcher from Göppingen, Germany presented some data from a 1989 study of twelve healthy volunteers (nine of which were M.D.'s) who had ingested 500 milligrams of mescaline and underwent cerebral blood flow

### COMMENTS BY SYLVIA THYSSEN, MAPS NETWORKS COORDINATOR

**T**HE PURPOSE of my attending this small gathering was twofold: to gain a better understanding of the type of research that is currently underway with psychedelic drugs in Germany, Switzerland and the United States, and to seek out new opportunities to stimulate psychedelic psychotherapy research. Traditions of research and approaches differ between Europe and America. This workshop's topics were very specifically focused on the use of psychedelic drugs in schizophrenia, or model psychosis, research. The 40 or so people attending were primarily psychiatrists and

psychiatry researchers. The forum's small size offered the opportunity for researchers to bring up yet-unpublished preliminary data and discuss more deeply aspects of their research. Many of the presenters utilized brain imaging technologies illustrated by slides. To tease out what relevance this has for MAPS' agenda was no small task.

American audience members' questions were focused on MDMA and the psychotherapy agenda. One mention of Prof. Hanscarl Leuner and his work with psycholytic psychotherapy was made during the intro-

ductory period of the workshop. When I talked with Prof. Sass, one of the organizers of the workshop, he suggested that Dr. Gouzoulis-Mayfrank's work may stimulate therapy research somewhat in Germany, since if a researcher there studies other aspects of psychedelics first, they may have a better chance of eventually gaining permission to do therapy research.

Manfred Spitzer wrapped up the workshop. He mentioned several times the psychotherapeutic applications of psychedelics and how they can enhance the psychotherapeutic process.

studies utilizing SPECT analysis (single positron emission computed tomography: it gives you the pretty color pictures of the brain's blood flow like PET does, but with less resolution). His results showed an increased frontal uptake and decreased occipital uptake with mescaline, as well as an improved left hemisphere performance over right on a facial recognition task. Mescaline seemed to reverse normal hemispheric asymmetry, but the phenomenon did not attain statistical significance.

The face/non-face decision picture was presented to one side of the brain or another with a specialized projection system called a tachistoscope. Dr. Hermle also presented some more recent data of eight male subjects who had ingested 140 milligrams of MDE and underwent sleep EEG's (electroencephalograph, a non-invasive brain wave study) and multiple psychological tests and assessments. All subjects showed an increased desire to communicate verbally, and seven out of eight showed a decrease in anxiety. One subject noted a "good, deep sadness" and unfortunately, one subject was noted to have hallucinations, delusions, and increased anxiety.

#### **REM suppression**

Efi Gouzoulis-Mayfrank followed Dr. Hermle's lecture with more details of the experiments she had performed with him

(published in 1992) and new data from an ongoing study begun in Summer 1995 comparing MDE, methamphetamine, psilocybin, and a placebo. Areas that were studied were some that are relevant in the study of endogenous psychosis: working memory, gating mechanism, alteration in psychological effects (thought disturbances) and brain metabolism. In this large study, eight subjects are needed for each compound, and each subject takes the compound on two different occasions, once at noon and another time at eleven p.m. Of note, those subjects taking the entactogen MDE at night experienced complete rapid eye movement (REM) suppression, as shown by their sleep EEGs. Few of these patients slept through the night after the eleven p.m. dose, as one might imagine. A similar picture of REM suppression was seen with the amphetamine group. The significance of this is not fully known, but it should be noted that antidepressant therapies often suppress REM stage sleep, and people with untreated depression show a



Dr. Leo Hermle, Göppingen

This raised the eyebrows of some of the presenters who focus on model psychosis or related research and have little knowledge of this aspect of psychedelics.

#### **MAPS as metaphor**

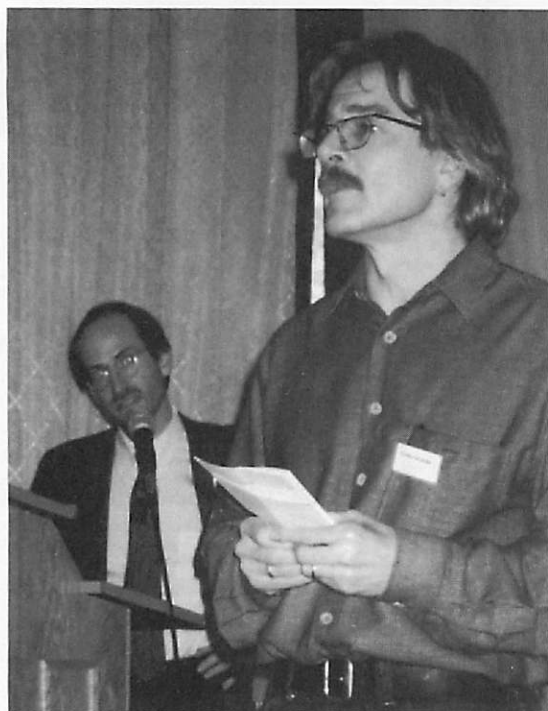
Surprisingly, Spitzer mentioned MAPS from the podium, noting that there were "representatives of MAPS" (just myself) at the workshop. He brought this up in the context of the metaphor of the map. He went on to elaborate considerably on this metaphor, mentioning neural-network models and the example of phantom pain. He explained how psychedelics are tools that can be used to

describe the maps of networks and brain regions and their interaction.

When we want to introduce changes into these maps, we want to learn more about which neuromodulators do what. Psychedelics can be useful for that. But mapping is one thing, changing and adapting the (brain) maps is another. Commenting on the next step, the possible therapeutic use of these agents, Spitzer went into detail. Change involves activating and forming new associations, which requires broad activation, an idea reminiscent of Grof's "non-specific amplifiers." Put

another way, "noise" is good for learning and reorganization. The concept of signal to noise ratio is an often used analogy in neurophysiology. As an example, anxious people have a narrow range of activation. To change anxiousness, an agent that introduces a state of broad activation—like a psychedelic drug—may be involved in the process of change.

This was a surprising and encouraging end to a workshop that wasn't designed to discuss the use of psychedelics outside of schizophrenia research. •



Dr. Franz X. Vollenweider, Zürich (foreground), and Dr. John Krystal, Yale

faster onset of REM when going to sleep than healthy normal volunteers. There are also abnormalities of REM sleep in schizophrenics, one being that even after sleep deprivation they do not compensate with more REM once allowed to sleep, as healthy volunteers do.

#### **PET brainmapping**

Franz Vollenweider, M.D. from Zürich, Switzerland, presented his PET data (cerebral glucose utilization studies) obtained under three experimental conditions: during exposure to ketamine, psilocybin and amphet-

amine. Dr. Vollenweider attempted to correlate different brain regions whose blood flow and glucose metabolism changed as a result of the intoxication, and map this onto various parameters or clusters of the APZ scale, such as oceanic boundlessness, dread of ego dissolution, or visionary restructuring. Dr. Vollenweider had mentioned from the audience during Holcombe's talk, that the area of interest that showed increased cerebral blood flow during mania, the anterior cingulate gyrus, also showed increased flow at a higher amphetamine dose. Other research of his that is currently underway, with the help of Alex Gamma, is PET and MDMA research, however, these results were not yet available.

#### **Receptor antagonists**

The last presentation by Dr. Schneider of Hanover, Germany involved intoxication of delta 9 THC (tetrahydrocannabinol) in healthy volunteers. He compared their results on a visual perception task of 3D inversion of familiar photographs with results from a group of schizophrenics, and found similarities in the groups' disturbances of internal regulation of perceptual processes. Also discussed was the concept of endogenous cannabis receptors, and the recently discovered (1992) endogenous ligand for these receptors, anandamide, and the current development of newer schizophrenic medications based on antagonizing these

receptors, such as SR14166A, a CBI receptor antagonist. Another promising new treatment for schizophrenia which was mentioned in an earlier talk by Mark Geyer was the compound MDL 100,907, currently undergoing clinical trials nationwide (including my home away from home, Bellevue). This is a specific 5HT<sub>2A</sub> antagonist, thus theoretically antagonizing such psychedelics as psilocybin (a presumed 2A and 2C agonist) and completely blocking the effects of DOI, a serotonin agonist which disrupts prepulse inhibition. MDL 100,907 is thus considered by some to be a "hallucinogen receptor antagonist," and has been shown to improve sensory motor gating.

#### **Reflections**

Again, you can see the focus of the conference was using these powerful substances as tools to study behavior, cognition, emotion, and to build treatments, but not exactly how every MAPS member would hope for. The general theme of this conference was that these psychedelic-induced states were models of unwanted behavior to be quantified and analyzed in order to provide understanding of and ideally treatment for those people suffering from psychiatric illnesses. The catch words for the weekend were definitely "model psychosis." I know this idea offends some MAPS members. You know these drugs have more to offer. I am just happy anyone anywhere is allowed to do these studies at all. I think they are crucial, they must be done, any work involving human consumption of psychedelics is inherently good work and anywhere to start is a good place.

After the talks had ended, the conference slowly shifted into the usual casual formation of small groups, where there was some talk of who has tried what drugs and what's the best way to take what. On the side, some of these researchers will acknowledge the benefits these drugs can give the average normal healthy volunteer, and some will even privately allow that these drugs have helped the scientists themselves to achieve desired states. The bravest ones will be doing both, publically. Amen. •

Julie Holland, M.D.  
175 East 96th St. Apt. 7J  
New York, NY 10128  
Private Practice: 31 W. 11th St.  
(212) 358-5808  
E-mail: jholland@inch.com

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\*Deceased

# THE HOFMANN REPORT

## MESSAGE FROM THE PRESIDENT:

We are pleased to acknowledge receipt of the complete and original collection of scientific research papers compiled as a result of Dr. Albert Hofmann's work on LSD and other compounds while Dr. Hofmann was employed at Sandoz Pharma. Currently, the AHF and MAPS are individually and collectively analyzing these papers for relevant documentation to support prospective researchers in providing federal agencies with documentation required to undertake projects requiring protocol methods and standards. Of course these papers are available to all persons who may benefit from their availability.

The Albert Hofmann Foundation sponsored the first of quarterly planned "In Gatherings." These social events are being held to encourage a more visible network for like minds to meet, share ideas and hopefully attract interested persons to get involved with the AHF and help turn our visions to reality. The first such gathering was held in Venice, California. It was held at our headquarters which since has been relocated to Pasadena. We were greatly pleased by the interest and support expressed by those attending. We are now planning the next such gathering for July, 1997. If you would be interested in attending any of these events, please call or write us so we will be sure to place you on our In Gathering mailing list.

Our new Pasadena location retains an improved staff enabling better communication with the public and closing the gaps suffered in the past.

Please note our new mailing address:

The Albert Hofmann Foundation

P.O. Box 94577, Pasadena, California 91109

Telephone: (310) 281-8110

FAX Line: (818) 793-7998

E-mail: [inlaguna@SPRYNET.com](mailto:inlaguna@SPRYNET.com)

In addition, we maintain a Laguna Beach, California address for special project donations and the Master File Fund. You may access this by writing to:

The Albert Hofmann Foundation

1278 Glenneyre Street, No. 173

Laguna Beach, California 92651

Our psychedelic museum/library is gaining much momentum and support. If you wish to donate personal collections to be held in trust by the Foundation for generations to come, we would be interested in discussing your materials and various methods for transferring your personal property to our non-profit 501(c)(3) corporation via tax credit vehicles. Much of what we have gathered thus far will be on display at the next In Gathering.

Once again, thank you for your continued interest and support.

Ron Brettin, President

**TRIBUTE TO WILLIS HARMAN,  
 PRESIDENT, INSTITUTE OF NOETIC SCIENCES;  
 AHF ADVISOR AND MEMBER OF  
 THE BOARD OF DIRECTORS**

On January 30, 1997, the world lost Willis Harman, one of its most dedicated and enthusiastic advocates committed to people around the globe reaching their full capacities as human beings. Through his own personal experience, he came to dramatically see and understand the true nature of man, and the enormous potential that lies within each and every one of us waiting to be realized. This understanding contained a full appreciation of the glory of our universe, and the garden of Eden that could be attained on earth if humans everywhere were willing to expand their consciousness to a full understanding of the nature of reality and of themselves.

Once a professor of Electrical Engineering at Stanford University, and having a brilliant mind, he was fully equipped not only to envision man's enormous possibilities, but saw clearly the obstructions we set in the way to prevent full realization. It was from this understanding, and an intense desire to do whatever he could to advance higher consciousness, that he took over the leadership of the Institute of Noetic Sciences. Under his direction, this Institute grew to a large, proficient organization of over 50,000 members, one of the most effective groups on the planet to reveal to the world humankind's ultimate capacities.

Over the years Willis became recognized as an outstanding speaker and lecturer, a profound thinker on the nature of man and his full attributes, particularly those that evade many of our mainstream scientists and political leaders and yet which are vitally essential to mankind's further evolution, if not survival. He has been an organizer of new movements, and a teacher and inspirer to those who worked closely with him. He has been author of many books and articles which one day must certainly turn out to be visionary forecasts of the solutions to humankind's most serious problems. There are many who mourn him all over the world, and are deeply saddened and concerned by the departure of such an important, influential figure.

Much information has been and is being put together on Willis, his life and his contributions. I will focus here on an area that was a great key to his life, and yet which he purposely held in reserve so as not to negatively influence the work or support of the Institute of Noetic Sciences. This was his work with psychedelics, which was a powerful instrumental factor in demonstrating to Willis our transpersonal nature and the presence of Divinity in the scheme of things.

Willis, through his own experience and observation of others, became very early convinced of the power of psychedelic agents as enormous mind openers, and powerful learning tools. In 1965 he and his cohorts Robert Mogar, Robert McKim, and James Fadiman had convinced San Francisco State College to set up The Institute of Psychedelic Research, whereby all the promising applications of psychedelics could be explored and evaluated. Unfortunately, the adverse publicity with regard to psychedelics became so powerful that the University withdrew. It was not long until research in all areas was abandoned in the United States. This happened despite the very promising results of the work of many investigators who had sufficient understanding and the requisite human qualities to employ them properly.

Willis was convinced that there were other means of exploration and demonstration that would confirm the same basic truths. As a matter of policy he elected to have IONS pursue these alternative approaches, and not be under the cloud of the stigma that had grown toward psychedelics. By this time the negative stigma associated with psychedelics was so powerful that researchers concerned about the future of their careers would not dare touch them, apart from a few dedicated individuals.



While numerous dynamics in our society led to the adverse evaluation and consequent legal prohibitions of even possessing such substances, it became clear in retrospect that psychedelics brought in too much reality and too bright a light of honesty for a self-centered, materialist world. The frightened, universal response was to ban them altogether, thereby avoiding the necessity of understanding extraordinary forms of experience, or exposing the unhealthy aspects of popular mainstream values. In due time, as more stability and understanding of transpersonal dimensions began to penetrate to knowledgeable persons, Willis became more willing to acknowledge the roots of his personal transformation. He accepted a position on the Board of Directors of the Albert Hofmann Foundation, subscribing to our goal of world education regarding the importance and potential of psychedelic substances, and the importance of resuming research in this very important field. He has made several public appearances describing his early personal experiences and research, particularly on creativity.

Before the advent of psychedelics, and while teaching Electrical Engineering at Stanford University, Willis had become quite fascinated with the field of extrasensory perception, and felt that investigations in this area would be the most effective way of alerting people to their remarkable, unrealized potentials. Then came along an astounding character by the name of Al Hubbard, who liked to call himself Doctor based on rather nefarious credentials. Al was addressed by his longtime closest friends as Captain. An almost instant rapport developed between Al and Willis. It was as if Al represented a wise, loving father. There was no question that his open, fun loving, often scurrilous behavior was a quite refreshing change from the university atmosphere. Al brought with him a considerable understanding of psychedelics and how to employ them effectively, and soon won Willis over. I had the good fortune to be present at one of Willis's remarkable openings, which took place during a drive returning from Death Valley.

Hubbard knew of Willis's attachment to extrasensory phenomena and the value he placed on it, a value Hubbard was determined to replace with much more deeply spiritual values. We were riding in a 1962 Malibu coupe, and Al was doing the driving. We made a brief stop. Starting up again, the keys were nowhere to be found. After much discussion and arguing, Al suggested that Willis look in his pocket. Much to his amazement, he came up with the keys. He was flabbergasted. He was immediately convinced that Al, through some form of psychokinesis, had transported them there to teach him a lesson. However the deed was actually accomplished, there is no question that an enormous impact was made on Willis, and his respect for Al and his teachings rapidly outgrew his interest in extrasensory phenomena, which is the outcome Al had wished.

On this day Willis opened completely to the ultimate nature of the Cosmos, with overwhelming realizations as to the true nature of Reality and of his own position in it. He and Al could not stop laughing as fresh understanding poured in yielding new ways of looking at things, and more satisfying ways of handling many aspects of life.

Stopping at an old, deserted community known as Swansee, some ten miles east of Lone Pine, Al left us to walk over and examine some of the old deserted buildings. Willis and I remained behind outside the car. Willis got my attention and pointed down to the ground. The edge of the shadow made by the cartop was moving slowly back and forth over the ground! We both knew that God was demonstrating His power. Simultaneously, Al was nowhere to be seen. We both immediately concluded that now since Al had proven to us beyond a doubt the reality of the existence of God, Al reincarnated, and it was now up to the two of us to take this remarkable message to the rest of the world. But this burden was somewhat removed from our shoulders when Al suddenly showed up again, and led us into many new adventures.

Willis was a very valuable member of the research team organized under Dr. Charles Savage, the Medical Director of the International Foundation for Advanced Study, which worked out rigorous research protocols to prove the effectiveness of psychedelic therapy. While initially support for more definitive research seemed forthcoming from

both psychiatric and government agencies, the interest in supporting this research evaporated with the growth of adverse publicity. A number of papers were published on the work completed at the Foundation, among which Willis was a prominent author. A hallmark paper which received the most widespread notice was a well-documented study on creativity: Harman, W. W., McKim, R. H., Mogar, R. E., Fadiman, J., and Stolaroff, M., "Psychedelic Agents in Creative Problem Solving: A Pilot Study," *Psychological Reports*, 19:211-227, 1966.

A major move in Willis's life came when he transferred in 1966 from the Department of Electrical Engineering at Stanford University to the Department of Engineering Economic Systems. This transfer was encouraged by Bill Linvill, the head of the latter department. Linvill was an unusually clear-minded visionary who recognized the importance of Willis's work and experience, and wished him as an ally in directing education into more fruitful channels. The result was that with Linvill's backing, Willis was appointed a year later to the position of Director, Educational Policy Research Center, Stanford Research Institute in Menlo Park, California.

The Educational Policy Research Center was sponsored by a contract with the U.S. Department of Education. A major objective was to conduct policy research leading to two ends: (1) determine how education can best be employed to prepare citizens for the evolving future, and (2) determine how education can be employed to "design" the kind of future the policy makers desire. This required a detailed examination of possible alternative futures and their consequences.

Harman's group developed a great deal of expertise on examining various alternatives ranging from the police state possibly resulting from riots to the enlightened state comprised of a majority of self-actualized people. These alternatives were examined as they applied to a large number of important parameters, all the way from meeting basic, essential needs to providing opportunities for individual growth and development. As the expertise of the group grew and important parameters were brought to light and considered, the interest in this work spread until Harman was in demand as a speaker on policy research around the world. Harman brought a refreshing new outlook on the potential of human development and the importance of such possibilities being recognized by mainstream science and policy makers in general.

Unfortunately, when the Republicans came into office, this work was canceled. However, by this time Willis had become sufficiently well recognized that he was the logical candidate to head up the newly formed Institute of Noetic Sciences, a position that he held until his recent death. This organization, through publishing periodicals, sponsoring important conferences and organizations, and through preparing or sponsoring the publication of important books, has effectively promulgated the vision that Willis Harman so devoutly pursued.

Readers of MAPS will be interested in Harman's views on the place of psychedelics in society. Here are some excerpts from statements he has made:

As an initial approach to the consideration of psychedelics, the public must become aware of the difference between psychedelics and "drugs" like crack, cocaine, amphetamines, and other hard drugs.

Psychedelics in their natural forms have been around for centuries, and the using cultures have developed effective procedures for obtaining benefits from them. It is time now to resume research with psychedelics, in both psychotherapy and religious settings. For research to proceed, it is necessary for those in control to realize that science must expand to true science, and not be locked to limited epistemologies such as currently dominate official science, epistemologies which blank out the vital areas to which psychedelics can offer greatly enhanced understanding.

Harman has stated, "In the long run, I believe we will see somewhat of a merging of health care, psychotherapy, and spiritual development. In a sane society, the psychedelics could play very useful roles as a facilitating agent in psychotherapy, and a sacrament in spiritual development."

Here are a few highlights from Willis's personal reflections:

Belief is an extremely important factor. The deeper the belief, the more profound effect on our perceptions, values, and behavior. Deeply held, unconscious beliefs are the most inhibiting, and at the same time the most liberating if they can be changed.

Total trust in the universe as a deep character trait can be scary but an ultimately deeply fulfilling way to live.

The richest possible life comes from putting your whole life in the service of the evolution of the whole. Such an attitude leads to the continual discovery of unexpected, fortuitous coincidences, to an unfolding beauty and harmony in life.

Willis repeatedly has emphasized the power of affirmations to re-program the deep inner belief system. Four effective ways of affirming can be done through meditation and different forms of prayer:

1. **Meditation.** Meditation can, among other things, bring relaxation and inner peace; can result in stilling the mind sufficiently to reveal what lies behind the surface clutter; permit exploring other states of consciousness and arrive at insight regarding the nature of spirit and universal consciousness. If this latter insight is powerful enough, it may be automatically affirmed and can change the core belief system. It is usually important to consciously affirm new insight to be sure that the deeper unconscious beliefs are brought into accord with it.

2. **Affirmative prayer.** Harman quotes Mark 11:24: "Whatever you ask in prayer, believe that you receive it and you will." This can work with external things, for self-transformation, and changing the deep inner beliefs.

3. **"Thy will be done."** This is a method of moving beyond the desires of the ego mind to affirm that you want what the higher Self wants, even though the conscious mind may not know and might even fight against what the higher Self desires.

4. **The prayer of gratitude.** It is important to deliberately allow feeling of gratitude to come to consciousness and, through the power of affirmation, affect our deep beliefs. Through experience, one learns that the more one perceives the positive—views with love and positive regard for all—the more it seems one gets in touch with the real reality. It is not a point to be argued with academics; only to be tried and the results observed.

At higher levels, there is far more connectedness with other persons, until at the highest there is only the One. At the highest level of I am, I am co-creator within the universal consciousness. The whole process is purposeful, fraught with meaning. We may not understand the meaning fully in our ordinary conscious awareness, but it is part of Western arrogance to assume that because we don't, there is no meaning.

It has been a great privilege to have known Willis, and to have shared many outstanding developments with him. The Albert Hofmann Foundation was very fortunate to have him serve on our Board of Directors, and obtain the benefit of his great wisdom and insightful suggestions contributing to our operations. If his belief system is accurate, then he is still busily helping all of us who remain behind who are open to his guidance.

**Acknowledgements.** We are very much indebted to Charlene Harman, Willis's wife, and Alise Agar at IONS for providing valuable background information for this article.

Myron Stolaroff, Editor

*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.*

We are endeavoring to provide and accomplish the following plans, and with earnest support and interest it should prove obtainable in the near future:

1. Establish a new and current FDA drug master file on LSD and psilocybin.
2. Obtain permanent residence of our current office site, to expand into a full library, archive, and museum, including gathering additional available materials world-wide.
3. Institute a program for "Friends of the Foundation."
4. Plan a Media Relations Center that will supply sound accurate information on psychedelics to the media, and rapidly counter erroneous information.
5. Provide news in the field through this publication (MAPS).
6. Open the Albert Hofmann Foundation Website.
7. Sponsor scientific and social conferences on psychedelics and related topics.

At the present time our staff, through the help of volunteers, is growing in numbers and competence. Our projects, like the Website and assessing the collection of Hofmann's papers received from Sandoz, are moving forward. We are currently operating in ideal space with ample room to store and catalog documents, operate all the necessary equipment to complete our electronic database, maintain good communications with those seeking further information. Through John Beresford we are setting in place the Albert Hofmann Museum, where initial exhibits will soon be available for viewing. Never before has financial assistance been so necessary and so immediately applicable to accomplishing our goals, a major one of which is to obtain permanent ownership of our current location. We urge you to become FRIENDS OF THE FOUNDATION by returning the information below:

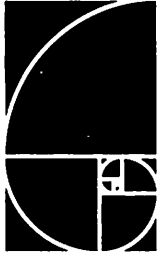
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I enclose my contribution of:  \$25.     \$50.     \$100.     other \_\_\_\_\_

Please mail to the Albert Hofmann Foundation, P. O. Box 94577, Pasadena, CA 91109.



## Heffter Research Institute

Research  
at the Frontiers  
of the Mind

THE HEFFTER RESEARCH INSTITUTE has now been officially incorporated for four years. Our major obstacle continues to be the lack of adequate funds to help support many deserving research projects. As the readers of this newsletter already know, one of the goals of the Heffter Institute is to develop a significant endowment so that the interest income from the endowment can be used to fund research in perpetuity. We still search for “angels” who can provide large gifts. On the one hand, there is an immediate need to fund research. Yet, on the other, our commitment to building an endowment means that some portion of every donation must be put aside. Hopefully, short term sacrifice will lead to long term funding stability, where fundraising will cease to be a necessary function of the board. During the past year, we did receive two donations totaling \$100,000 from donors who wish to remain anonymous. (While this seems like a great deal of money, credible scientific research is quite expensive. Two of the members of the Heffter board who conduct academic research collectively receive approximately \$750,000 per year to fund research.) Our last board meeting involved extensive discussion regarding how to utilize most effectively these donations. A small part of the money will be used to seed our endowment fund. We also plan to fund some small research projects, and are considering the possibility of sponsoring a scientific conference next year. It is a difficult decision process, wishing to fund things immediately, while at the same time

realizing that long term investment and institute development will ultimately lead to an endowment that provides long-term funding stability.

We have also put into place a mechanism for reviewing research proposals submitted to the Institute. Based on the peer review process employed by government agencies, it will ensure that funded projects meet high scientific standards, so that no funded project can be subjected to the criticism of flawed design, or improper controls, etc., the sorts of issues that destroyed the value of much of the LSD research carried out in past decades. This is a serious business to us, and it is our goal to get past the ridicule that this field suffered in the past and bring respectability, so that new young scientists, eager to venture into this exciting area, will not be deterred by fear of social and political pressures, or discouraged for lack of funds.

On that note we make a plea to you, that if you know folks who are sympathetic to this work, and who have expressed the wish to help create something that will continue on indefinitely as a powerful force in our society, a gift to the Heffter endowment may be the answer. Remember, The Heffter Institute is not just talking about research in our lifetime, but in the lifetimes of our children, and our children's children. Think of the incredible power of a gift that spans generations! Clearly we have survived our formative phase and donors may have confidence that their trust in the Heffter is well founded. Our “point man” for fundraising is presently Dennis McKenna, who can be reached at [Dennis@heffter.org](mailto:Dennis@heffter.org).

## Non-Anglo Entheography: Mini-Reviews of Non-English Publications

Jonathan Ott

# W

HILE WE CAN BE GRATEFUL that there is again considerable publishing activity on the subject of shamanic inebriants in the

United States—severally by academic presses, small presses [with numerous self-publishers], major trade-book houses—many books are being published in languages other than English, scarcely coming to the attention of aficionados in this country. There are welcome signs of the return of the 'drug book' section to the bookstores of the land—rudely displaced by a riot of substance abuse [sic] self-help manuals in the 1980s—and their ranks would swell, were English editions of Spanish, Italian, German, French and Portuguese books on this subject published. This in turn would stimulate the writing of more such books in other countries, by giving their authors access to the large and lucrative United States market, in which, moreover, direct marketing allows more opportunities in niche-markets or non-mainstream subject areas. Accordingly, in hopes of alerting would-be translators or publishers [and readers, too!] to promising non-English publications, I will contribute periodic columns with mini-reviews of titles I think are especially valuable and interesting. Where possible, I will include all salient ordering information, to facilitate their direct and expeditious acquisition.

### Spanish originals

*Historia Elemental de las Drogas* [Elementary History of Drugs], Antonio Escohotado, 1996. Editorial Anagrama [Pedro de la Creu, 58; 08034 Barcelona, Spain]. Sew-and-glue paperback; ISBN 84-339-0526-0; 244 pp.; 22 pp. index. This is a radical condensation of Escohotado's best-selling 1299-page, 3-volume *Historia General de las Drogas*. Since public-school education here all but assures a lifelong aversion to history, perhaps his big gun has little commercial prospect this side of the Atlantic; whereas this condensation with an excellent index fills the bill. This is a lively and well-written look at the history of drugs from pre- and proto-history through classical times to the Pharmacraic Inquisition, both ancient and modern, with special attention to the history of drug prohibition, which the author knows all-too-well, having written much of the longer

book in prison on a drug charge.

*Aprendiendo de las Drogas: Usos y Abusos, Prejuicios y Desafíos* [Learning from Drugs: Uses and Abuses, Prejudices and Challenges], Antonio Escohotado, 1995. Editorial Anagrama. [Im]Perfect-bound paperback; ISBN 84-339-1441-3; 250 pp.; 7 pp. index. A revised and updated version of a book which has had two previous iterations [*El Libro de los Venenos* of 1990 and *Para Una Fenomenología de las Drogas* of 1992], this is the inveterate epicure's guide to the pharmacological pleasures, based largely on rather extensive psychonautic bioassays by the author, whose assiduousness in this regard I have personally observed. Commencing with an objective look at dependency and toxicity, defining precisely what constitutes a drug, and rounded out with historical and ethnopharmacological background information, Escohotado describes the uses and effects of the full gamut of

pleasure drugs, broken down into three broad categories—sedatives, stimulants and visionary drugs. The author's philosophical and literary bent is manifest in a short epilogue.

*Plantas, Chamanismo y Estados de Consciencia* [Plants, Shamanism and States of Consciousness], Josep Maria Fericgla [Ed.], 1994. Los Libros de la Liebre de Marzo [Apartado de Correos 2215; 08080 Barcelona, Spain]. Sew-and-glue paperback; ISBN 84-87403-14-x; 255 pp.; no index; bibliographies to six of the seven papers. This is an anthology with papers by the editor Fericgla [who also contributed a preface], Alexander T. Shulgin, Richard Evans Schultes, this reviewer, C. Manuel Torres, Giorgio Samorini and James C. Callaway, loosely based on the eponymous October 1992 conference in San Luis Potosí, México [of which the recent Entheobotany meeting was the third installment]. Shulgin describes "The Art of Seeing" while Schultes gives an extensive review of psychoactive plants. Your reviewer covers the literature on Wasson's *soma* theory, and there are papers on Andean snuffs by Torres, Bwiti and *iboga* by Samorini, endogenous  $\beta$ -carbolines by Callaway and a theoretical construct of 'hallucinogens' as non-specific adaptogens by the editor Fericgla. This was the first volume in the ongoing series *Colección Cogniciones*, of which a Spanish translation of my *Pharmactheon* is the fifth publication.

*El Hongo y la Génesis de las Culturas* [The Mushroom and the Genesis of Cultures], Josep Maria Fericgla, 1994. Los Libros de la Liebre de Marzo. Sew-and-glue paperback; ISBN 84-87403-15-8 [non -14-x]; 211 pp.; no index; 5 pp. bibliography. A translation of the 1985 original in Catalán, this became the second volume in the *Cogniciones* series edited by Fericgla and inaugurated by the aforementioned book. Ardent mycophile Fericgla [in this sense like all Catalonians] begins by examining mythology and symbol systems for traces of primordial entheogen use, then following the Wassons, contrasts the *mycophilia* of the Catalonians, Italians, Basques, Slavs and Siberians with the *mycophobia* of the Castillian and Valencian Spaniards, the Germans, Greeks and we Anglo-Saxons. He then focuses specifically on Catalunya and *Amanita muscaria*, examining the ethnobotany and linguistics of this [in]famous mushroom. He describes his personal psychonautic bioassays of *Amanita muscaria* in the Pyrenées, and concludes with a fascinating report on traditional, ludicrous use of

this mushroom in rural Catalunya, a recent discovery absent from the original book.

*La Bala Perdida: William S. Burroughs en México* [Stray Bullet: William S. Burroughs in México], Jorge García-Robles, 1995. Ediciones del Milenio [Frontera 120-a; Col. Roma; México 06700, D.F., México]. [Im]Perfect-bound paperback; ISBN 968-7419-08-3; 112 pp.; no index or bibliography. This is a fascinating, authorized, biographical account of the three years [1949–1952] Burroughs spent in México, whence he had fled from legal problems in the United States. With the expected cast of beat characters—Neal Cassady, Jack Kerouac, Allen Ginsberg and others—the author paints a vivid picture of life in the Mexican capital at the time, and Burroughs' activities. Of course, the focus is on the Wilhelm Tell-style shooting death of his wife Joan Vollmer, which again landed Burroughs in hot water with the law, culminating in his flight from México on the heels of his high-flying lawyer—on to South America and his far-better known quixotic adventures in quest of *yajé*. This is a must for Burroughs fans!

*Huautla en Tiempo de Hippies* [Huautla in the Hippie Era], Filvaro Estrada, 1996. Editorial Grijalbo [Calz. San Bartolo Naucalpan, 282; Argentina Poniente 11230; Miguel Hidalgo, México, D.F., México]. [Im]Perfect-bound paperback; ISBN 970-05-0665-7; 147 pp.; 3 pp. index; no bibliography. This is a compact social history of entheogenic mycophagy in the 1960s in the Mazatec village of Huautla de Jiménez, Oaxaca, where R. Gordon Wasson rediscovered María Sabina's shamanic use of the psilocybian mushrooms in June 1955. Estrada is well-known for his 1977 biography of Sabina, now in its 8th printing in México and translated into many languages, including English [*María Sabina: Her Life and Chants*, Ross-Erikson, Santa Barbara, CA, 1981]. This book tells the basically sad story of the ravages of mushroomic tourism, a tale being repeated today with *péyotl* and *ayahuasca* elsewhere. Estrada also endeavors to put what happened in Huautla in the broader perspective of the times, and his book concludes with a brief letter from Albert Hofmann, the discoverer of psilocybin from Sabina's Huautla mushrooms.

#### **Recent Spanish reprints of books in English and periodicals**

*El Hongo Maravilloso Teonanácatl* [The Wondrous Mushroom Teonanácatl], R. Gordon Wasson, 1993. Fondo de Cultura Económica

[Carreterra Pichaco-Ajusco, 227; 14200 México, D.F., México]. Sew-and-glue paperback; ISBN 968-16-1563-8; 307 pp.; 6 pp. index; 16 pp. bibliography. This is the second printing in Spanish [7,000 total] of Wasson's seminal 1980 limited-edition original *The Wondrous Mushroom: Mycolatry in Mesoamerica*, now selling for US\$675.

*El Camino a Eleusis* [The Road to Eleusis], R. Gordon Wasson, Albert Hofmann and Carl A.P. Ruck, 1995. Fondo de Cultura Económica. Sew-and-glue paperback; ISBN 968-16-0655-8; 237 pp.; no index; footnote references. The English 1978 original now long out-of-print, this is the third printing of the Spanish translation [12,000 total], which features an Appendix translating our 1979 *Journal of Psychedelic Drugs* paper [11 (1-2): 145-146] coining the word *entheogen[ic]*.

*La Búsqueda de Perséfone* [Persephone's Quest], R. Gordon Wasson, Stella Kramrisch, Jonathan Ott, Carl A.P. Ruck, 1996. Fondo de Cultura Económica. Sew-and-glue paperback; ISBN 968-16-3695-3; 339 pp.; no index; footnote references. This is the second printing in Spanish [4,000 total] of the 1986 English original, still in print in paperback from Yale University Press.

*Plantas de los Dioses* [Plants of the Gods], Richard Evans Schultes and Albert Hofmann, 1993. Fondo de Cultura Económica. Smythe-sewn hardcover; ISBN 968-16-1023-7; 192 pp.; 5 pp. index, 2 pp. bibliography. This is the second hardcover printing in Spanish, identical to the 1979 out-of-print English original, though a 1992 paperback is now available from Healing Arts Press.

*Las Voces del Chamán* [Shamanic Voices], Joan Halifax, 1995. Editorial Diana [Roberto Gayol, 1219; México 03100, D.F., México]. [Im]Perfect-bound paper-back; ISBN 968-13-2782-9; 285 pp.; no index; 13 pp. bibliography. This is a welcome recent translation of the 1979 anthology of shamanic narratives by ethnographer Halifax, still available in English paperback from Arkana/Penguin.

*Hongos: Especies Alucinógenas* [Mushrooms: Psychedelic Fungi], Peter Furst, 1995. Editorial Diana. [Im]Perfect-bound paperback; ISBN 968-13-2869-8; 120 pp.; 4 pp. index; 1 p. bibliography. This is a new translation of Furst's 1986 [updated 1992] illustrated volume in *The Encyclopedia of Psychoactive Drugs* series aimed at laypersons, still available in English from Chelsea House.

*Takiwasi: Revista de Reflexión e Intercambio* [Takiwasi: Journal for Reflection and Interchange], Jacques Mabit [Ed.], 1992 onward. Takiwasi Centro de Rehabilitación e Investigación de las Medicinas Tradicionales [Prolongación Jirón Alerta, 466; Tarapoto, Perú; \$23/\$33 per annum (individuals; Latin America/elsewhere); institutions add \$20; (biennial); single/back issues \$15/\$17 (individuals); \$22/\$27 (institutions)]. [Im]Perfect-bound paperback; ISSN 1021-6685; 136-150 pp. [approx.]; no index; bibliographies to individual papers. The annual journal of the Franco/Peruvian 'substance abuse' [sic] treatment center Takiwasi, where *ayahuasca* and allied ethnomedicines are administered in a non-coercive intensive program for problematic

drug-habitueés, four numbers have been published, commencing in December 1992. Although the subject matter ranges far beyond shamanic inebriants, each issue has contained at least a couple of articles on entheobotany of *ayahuasca*, *San Pedro*, *Cannabis*, *iboga*, etc. While the articles are exclusively in Spanish, with the third number commenced Appendices with abstracts in Portuguese, French and English, and with the fourth number a much-needed, but still too-short list of recommended publications. It is hoped both the abstract section and books and periodicals section will be greatly expanded. Takiwasi is developing nicely as a vital Spanish-language periodical focusing on contemporary therapeutic applications of visionary ethnomedicines, well-produced and with a broad, eclectic scope. The editors have wisely chosen to publish in book form English translations of extracts of the early volumes, and solicited my editorial advice in this regard. I eagerly await the appearance of this valuable book which, hopefully, will have an index.

#### Italian Originals, Non-English Translation

*Gli Allucinogeni nel Mito* [Hallucinogens in Mythology], Giorgio Samorini, 1995. Nautilus [C.P. 1311; 10100 Torino, Italy; Lire 20,000]. Sew-and-glue paperback; no ISBN; 172 pp.; no index; 25 pp. bibliography. Giorgio Samorini, one of the world's leading experts on entheogenic ethnopharmacognosy, here offers a fascinating review of entheobotany of various psychoactive plants, centered on their mythology, especially origin myths. There are chapters on *ayahuasca*, *péyotl*, *Cannabis*, Solanaceae [*Datura*, *Mandragora*, *Nicotiana* spp.], snuff powders, *iboga* [on which he has done original research], *San Pedro*, *jurema*, *kava*, *Amanita* and *Psilocybe* species, stimulants [*coca*, coffee, tea, *cola*] and alcoholic beverage plants [the vine and wines; *maguény* and *pulque*]. A good bibliography rounds out this original book, although such a concentration of interesting data surely merits a detailed index, sadly absent—why do so few authors or publishers deign to favor the reader with an index? Is it too much to ask?

*Funghetti* [Liberty Caps], Silvio Pagani [pseudonym for Giorgio Samorini], 1993. Nautilus [Lire 4,000]. Stapled booklet with dust-jacket; no ISBN; 36 pp.; no index; no bibliography. This is the First European popular book on entheomycology, contemporaneous with Jochen Gartz' *Narrenschwämme*, which was recently translated into English [assuming one does not count the British Isles as Europe; and the 1977 *A Guide to British Psilocybin Mushrooms*]. Samorini, a true expert in the field [who recently wowed the sophisticated American audience at the Entheobotany conference in San Francisco, November 1996, with some 'New Perspectives in Ethnomycology'] has produced an inexpensive, accurate and interesting look at Europe's diminutive Liberty Cap mushroom, *Psilocybe semilanceata*. Even including 4 pages of nice color photographs at a bargain price [though the crude line drawing had better been replaced with an index or bibliography], he covers ancient and modern history, effects, field identification and use as pharmactheon, concluding with comments on the contemporary Pharmacraic Inquisition resulting in misclassifying his beloved "little mushrooms" *funghetti* as narcotics.



*Le Droghe degli Dei: Veleni Sacri, Estasi Divine* [Drugs of the Gods: Sacred Poisons, Divine Ecstasy], Philippe de Félice, 1990. ECIG [Via Cafiario, 19/10; 16124 Genova, Italy; Lire 38,000]. Sew-and-glue paperback; ISBN 88-7545-393-4; 333 pp.; no index; 11 pp. bibliography and footnote references. This recent translation of de Félice's pioneering 1936 *Poisons Sacrés, Ivresses Divines: Essai sur Quelques Formes Inférieurs de la Mystique* [Sacred Poisons, Divine Inebriations: An Essay on Certain Inferior (sic) Forms of Mysticism; reprinted in facsimile in 1970 by Éditions Albin Michel; 22, rue Huyghens; Paris, France] makes this recondite work again available. Although marred by a bias against inebriants, as evinced by the oxymoronic title, sacred 'poisons,' so-called 'inferior' forms of mysticism, de Félice was the first systematically to call attention to this overlooked aspect of religion. In this sense, he was only following Baudelaire's colossal error, in having characterized inebriation as 'artificial paradises,' which clearly won the day in the Francophone world. Even Lewin's monumental *Phantastica* of 1924 was criminally mistitled *Les "Paradis Artificiels"* in the 1928 French translation, and Havelock Ellis likewise had characterized *péyotl* as "a new artificial paradise." Nonetheless, there is much of interest here, with coverage of opium, *coca*, *kava*, *ayahuasca*, tobacco, *Cannabis*, *qat*, *péyotl*, archaic wines, with speculations regarding *soma*, Dionysian inebriation, Celtic and Germanic inebriants. It is unpardonable that the Italian publishers should have prescinded even the sketchy, 6-page index of the original—why?

#### Italian reprints and new periodicals

*Alla Scoperta Dei Misteri Eleusini* [Unveiling the Eleusinian Mysteries], R. Gordon Wasson, Albert Hofmann, Carl A.P. Ruck, 1996. Libri Urta—Apogeo [Viale Papiniano, 38; 20123 Milano, Italy; Lire 24,000]. Sew-and-glue paperback; ISBN 88-7303-149-8; 126 pp.; no index; footnote references. This is a well-produced, new Italian translation of the 1978 English classic [*vide supra* for Spanish translation], much in demand in English [signed copies of the original \$12.95 trade edition have commanded up to \$1,000 on the rare-book market, and even the contemporaneous \$4.95 paperback is scarce as hens' teeth!]. It requires no special business acumen to descry the potential value of an English reprint!

*L'Hachisch* [Hashish], Jacques-Joseph Moreau [de Tours], 1996. Sensibili alle Foglie [Via Enrico del Pozzo, 5/a; 00146 Roma, Italy; Lire 23,000]. 122 pp. I have not seen this recent Italian translation [and abridgement, judging from the number of pages] of Moreau's pioneering 1845 treatise *Du Hachisch et de l'Aliénation Mentale: Études Psychologiques* [On Hashish and Mental Illness: Psychological Studies; reprinted in facsimile by Collection "Esquirol" (3, rue Eugene Delacroix; Paris 16, France, 1970)], never translated into English [though a short excerpt appeared in the recent anthology *White Rabbit: A Psychedelic [sic] Reader* (Chronicle Books, SF, 1995)]. It is devoutly to be wished someone will take a cue from the Italians, and give the avid *Cannabinophile* market an English translation of this seminal book.

*Altrove* [Elsewhere] Claudio Barbieri *et alii* [Eds.], 1993 onward. Nautilus [C.P. 1311; 10100 Torino, Italy; Lire 16,000 *per annum*].

Sew-and-glue paperback; no ISBN or ISSN; 152 pp.; no indices; marginalia references to individual articles. This well-produced Italian yearbook, directed to laypersons and specialists alike, was launched successfully in 1993 by the active Società Italiana per lo Studio degli Stati di Coscienza [SISSC], and now three numbers have been produced. The inaugural issue focused on mushrooms, *San Pedro*, *ayahuasca* and general topics on alternate states; the second on *Cannabis*, visionary Solanaceae and *ayahuasca*; the third on empathogens/MDMA, snuffs and other topics. The clean and innovative graphic design, sew-and-glue bindings and high editorial standards should be emulated on this side of the Atlantic, instead of the sleazy, 'psychedelic' publications which are still contributing to the ill repute of entheobotany in the United States.

*Eleusis: Bollettino D'Informazione SISSC* [Eleusis: SISSC Information Bulletin], Giorgio Samorini [Editor in Chief], 1995 onward. SISSC [Lago Santa Caterina, 43; 38068 Rovereto, Trento, Italy; Lire 40,000 *per annum* (three issues)]. Stapled paperback; no ISBN or ISSN; 60 pp. approx.; no index; bibliographies to individual papers. What I said above in re-emulation applies also to *Eleusis*, a bilingual [Italian/English] triennial periodical by the same SISSC which launched *Altrove*. Besides interesting articles, advertises for publications, plus music and book reviews, *Eleusis* also features superb in-depth 'Psychoactive Cards' on recondite visionary plants, including detailed botanical, ecological, entheobotanical, phytochemical, pharmacological and psychonautic data, culminating in detailed bibliographies. Plants featured in the five numbers extant are: *Acorus calamus*, *Carpobrotus [Mesembryanthemum] edulis*, *Inocybe aeruginascens*, *Salvia divinorum* and *Scopolia carniolica*. There is also an excellent section on bibliographic novelties. This fine periodical replaces the previous newsletter of the SISSC, of which 8 numbers were published, between February 1992 and November 1994 [*vide infra*], and may be expanded and converted to bilingual Spanish/English for more international distribution.

*Percorsi Psichedelici* [Psychedelic Trips], Gilberto Camilla, *et alii* [Eds.], 1995. Edizioni Grafton 9 [Via Paradiso, 3; 40122 Bologna, Italy; Lire 12,000]. Sew-and-glue paperback; no ISBN; 102 pp.; no index; references to individual articles. This is a compilation of 14 articles selected from the defunct newsletter of the SISSC [*vide supra*], not nearly as elegantly produced as *Altrove* or *Eleusis*. Nevertheless, this is a valuable anthology of interesting papers on Maria Sabina, Santo Daime, Bwiti, pharmahuasca and other topics of psychonautic orientation.

*Bibliografia Italiana su Allucinogeni e Cannabis* [Italian Bibliography on Hallucinogens and Cannabis], Carlo Buono *et alii* [Eds.], 1994. Edizioni Grafton 9 [*vide supra*; Lire 7,000]. Stapled booklet; no ISBN; 68 pp.; all bibliography. The SISSC has also produced this useful bibliography of Italian-language publications on entheobotany, with special emphasis on *Cannabis*. Given in chronological order [with the requisite author index], most entries are extensively annotated, and sub-divided into texts, university texts and articles; with the last further subdivided into: psychological and psychiatric studies; medical and pharmacological studies; chemical and biochemical studies; mushrooms;

Solanaceae; *Cannabis*; Gramineae/ergot and miscellaneous. While the center of gravity here is the Italian language, this booklet will be of interest to all serious scholars of entheobotany.

#### German originals and non-English translation

*María Sabina: Botin der Heiligen Pilze* [María Sabina: Apostle of the Sacred Mushrooms], Roger Liggenstorfer and Christian Rätsch [Eds.], 1996. Nachtschatten Verlag [Ritter Quai 2-4; CH-4502 Solothurn, Switzerland; DM48, SFR48, ös442; limited hardcover (500 copies) DM98, SFR98, ös902]. [Im]Perfect-bound paperback, ISBN 3-907080-11-4; Smythe-sewn hardcover, ISBN 3-907080-12-2; [hors commerce set of 20 half-leatherbound authors' copies]; 272 pp.; no index; 25 pp. bibliography. This is the second German translation of Filvaro Estrada's seminal 1977 biography of María Sabina; unlike its 1980 predecessor, greatly expanded by addition of a second part—a second book, really—with 15 papers by various specialists, an extensive bibliography, an 8-page section of color plates and an introduction by Albert Hofmann, to whom the book is dedicated in honor of his 90th birthday. Here we have everything from Mexican entheomycology to pharmacology and psychotherapy to the description of a novel psilocybian mushroom. The nicely-produced book is graced throughout with innumerable fascinating marginalia quotations and illustrations, and its only obvious defect—familiar theme here—is the lack of an index, devoutly to be rued in the case of a book like this, with such an eclectic, multidisciplinary treasure-trove of information. Incorporating a reprint of Henry Munn's fine 1981 English translation of Estrada's book, we need an *indexed* translation of this greatly-expanded and updated version.

*Ürbock: Bier Jenseits von Hopfen und Malz* [Ürbock: Beer Beyond Hops and Malt], Christian Rätsch, 1996. AT Verlag [Bahnhofstraße, 39-34; 5001 Aarau, Switzerland; DM48, SFR48, ös355]. Smythe-sewn hardcover; ISBN 3-85502-553-3; 224 pp.; 5 pp. index; 18 pp. bibliography. I had commented in my 1993 *Pharmacotheon* that a *desideratum* of entheobotany was a study of numerous psychotropic additives to alcoholic beverages in antiquity, and now German ethnographer Rätsch has admirably tackled the brewer's side of the equation. This lovely, lavishly-illustrated oversized book commences with a survey of beers, then goes straight to the malt of the beverage, "The Secret: The Additives," with an 11-page table of herbal, mineral, even animal additives to beers, noting presumed active principles and their putative effects, and respective cultural background of each. While much of this information is sketchy and sometimes speculative and even improbable, this can in great measure be ascribed to the new territory being broken here, and it is to be hoped that this layperson-directed book will serve as a guide to some enterprising graduate students who might explore these "twice five miles of fertile ground" in more detail. Rätsch examines the mandrake beer of ancient Egypt, the Eleusinian *kykeon* [here rather loosely called a beer, as consumption immediately followed preparation with no time for fermentation] and various traditional beers of Africa, Asia and the Americas, heralding the arrival of the 'hemp beer era' and the "Psychedelic Beers of the Future," in furtherance of which he proffers recipes for *Cannabis*, henbane ["The Genuine Pilsener"] and mandrake beers, with all

the requisite psychonautic bioassay data, of course! Now, who will start scratching the surface of the 'secret' ingredients of the wines of Yahweh and Dionysus... not to mention the quintessence of the very *quinta essencia*, psychoactive additives to liqueurs and other distilled alcohols? We wait with 'bated, if not alcoholic, breath!

*Pflanzen der Liebe* [Plants of Love], Christian Rätsch, 1995. AT Verlag [DM48, SFR48, ös375]. Smythe-sewn hardcover; ISBN 3-85502-524-x; 208 pp.; 8 pp. index; 1 pp. bibliography. Just when we were suspecting Rätsch was spending too much time bioassaying in his *Psychedelische Bierstube*, he has also compiled a lavishly-illustrated layperson's guide to the aphrodisiacs [dedicated, significantly, to his partner and collaborator Dr. Claudia Müller-Ebeling, with whom he had coauthored the 1986 *Isoldens Liebestrank*, 'Isolde's Philtre']! This very attractive book, with a foreword by Albert Hofmann, reviews the major putative aphrodisiacs, especially plants, with a 113-species 'Plant Lexicon' modeled after the 1978 *Medicines from the Earth* and 1979 *Plants of the Gods* [McGraw-Hill], with color illustrations and brief notes on each species, 3-4 *per page*. Having the audacity to inquire "Who Needs Aphrodisiacs?" [mayhap we ought ask the dedicatee!], Rätsch proceeds to review the most important such in a dozen chapters, with the now-familiar cast of characters—*Cannabis*, opium, thornapple, ginseng, mandrake, henbane, yohimbe, *coca*, etc., concluding [could there be any doubt?] with some of his favorite recipes, although the aphronautic bioassay data is concupiscent by its absence! Students take note! Aphrobotany, like entheobotany, can be particularly rewarding in the pharmacological dimension of requisite field work, especially when compared to study of epidemiology, environmental chemistry, or competing ethnopharmacognostical subspecialties like dart- and arrow-poisons, ordeal poisons, purgatives/emetics, vesicants, *zombi* powders, *anaphrodisiacs* and suchlike delicacies!

*Räucherstoffe: Der Atem des Drachen* [Fumatories: The Dragon's Breath], Christian Rätsch, 1996. AT Verlag [DM48, SFR48, ös355]. Smythe-sewn hardcover; ISBN 3-85502-545-2; 231 pp.; 2 pp. botanical 'pseudoindex'; 8 pp. bibliography. Never again will I suspect Rätsch of spending too much time in psychonautic or aphronautic bioassays; or in anything else but writing! Herewith yet another lovely, illustrated volume on fumatories, published in the same year as the above-reviewed *Ürbock* and scarcely a year after *Pflanzen der Liebe*, with which this book makes a sort of coffee-table trilogy. This time we have 73 mini-chapters of diverse fumatories—70 plants or plant-groups; two animals [ambergris from whales and various molluscs] and one mineral [sulfur]—giving common and scientific names, beautiful classical illustrations and ethnopharmacognostical details. Some 15 of the plant chapters feature well-known psychotropic species: *Atropa*, *Hyoscyamus*, *Mandragora* spp.; *Artemisia*, *Salvia*, *Thuja* spp.; *Ledum*, *Rhododendron* spp.; *Cannabis* spp.; *Erythroxylum* spp.; *Theobroma cacao*; *Acorus* spp.; *Papaver somniferum*; and *Peganum harmala*. Most of the remaining chapters describe manifold resinous plants such as species of: *Abies*, *Acacia*, *Bursera*, *Cedrus*, *Commiphora*, *Cupressus*, *Eucalyptus*, *Juniperus*, *Liquidambar*, *Myroxylon*, *Pinus* and *Styrax*. There is a 22-page introductory section covering visionary uses of

fumatories, medicinal applications, and ritual uses in archaic cultures of Palæogæa and Neogæa [the latter focusing on the Maya, Râtsch's anthropological specialty]. There is a central 16-page color-plate section; 106 mini-portraits of various fumatory resins, roots, barks, seeds, leaves, etc., plus 16 plant photographs, all of good quality. There is a practical 20-page use section, with the obligatory Râtsch-Rezepte [recipes], and a 2-page, 207-species botanical index, inexplicably lacking in page citations—just scientific names of various organisms! This is an inexcusable oversight, as is lack of a general index to all the lore catalogued here. The book ends with a useful 8-page bibliography of 322 sources.

*Heimische Pflanzen der Götter* [Native Plants of the Gods], Erwin Bauereiß, 1995. Raymond Martin Verlag [D-91459 Markt Erlbach, Germany; DM33]. [Im]Perfect-bound paperback; ISBN 3-88631-218-6; 240 pp.; no index; 20 pp. bibliography. For Europeans interested in 'homey' sacred plants, or all those interested in European entheobotany, horticulturist Bauereiß has compiled an anthology dealing mainly with the well-known solanaceous ingredients of sorceress' philtres—thornapple, deadly nightshade, henbane, mandrake—but including also fascinating data on lesser-known inebriants like *Scopolia*, *Aconitum*, hemlock, darnel, mistletoe, *Ledum palustre*; and old favorites like opium, *Amanita* and *Psilocybe* mushrooms, *Cannabis*, ergot and others. There is a typographically-minuscule bibliography of 20 pages, and 16 pages of lovely color photographs; but the 5-page advert section had better been employed for a much-needed index to this wealth of recondite lore. This is indeed, as subtitled, *A Handbook for Sorcerers and Magicians*. Bauereiß has also self-published a series of stapled booklets on *Stechapfel* [Thornapple; 1993, DM8]; *Bilsenkraut* [Henbane; 1995; DM8]; *Die Eibe* [The Yew, by Reinhold Jordan; 1995; DM8]; *Amanita* [1995; DM8] and others, all available directly from the author, who also sells seeds of these and many other plants, especially solanaceous inebriants [Wurzel-Verlag; Markgrafstraße, 21; 91438 Bad Windsheim, Germany].

*Das Hanf Handbuch* [The Hemp Handbook], Hai and Ronald Rippchen [Eds.], 1994. Medienexperimente and Nachtschatten Verlag [Alte Schmiede; D-69488 Löhrbach, Germany; Ritter Quai 2-4; CH-4502 Solothurn, Switzerland; DM30, SFR32, Ös250]. [Im]Perfect-bound paperback; ISBN 3-925817-73-5; 288 pp.; no index; scant references. Albeit rather cheaply and inelegantly produced [some text is even crudely blacked-out by pen], this is nevertheless an interesting and multidisciplinary look at *Cannabis*. The publishers are to be commended, also, for printing the book on a lovely, 50% hemp and 50% recycled paper, still unavailable as book stock in the U.S. This is in keeping with the political orientation of the book, and is doubtless a nice stimulus to the market for hemp book papers. The chapters range widely from botany and chemistry to horticulture, psychonautic bioassay, pharmacology, medicinal use, artistic and political aspects.

#### German translations and periodicals

*Pflanzen der Götter* [Plants of the Gods], Richard Evans Schultes and Albert Hofmann, 1995. AT Verlag [DM48, SFR48, Ös375].

Smythe-sewn hardcover; ISBN 3-85502-543-6; 191 pp.; 4 pp. index; 2 pp. bibliography. We've here the second German edition of the classic 1979 coffee-table book on entheobotany by the two deans of the field, beautifully reproduced and very nicely clothbound.

*Jahrbuch für Ethnomedizin und Bewusstseinsforschung* [Yearbook for Ethnomedicine and the Study of Consciousness], Christian Râtsch and John Baker [Eds.], 1992 onward. VWB [Postfach 11 03 68; 1000 Berlin 61, Germany; DM48 per annum for subscription; back/individual issues DM58]. [Im]Perfect-bound paperbacks; ISSN 0942-1408; ISBN 3-927408-81-6/-85-9 [1 and 2]; 3-86135-030-0/-031-9 [3 and 4]; 200-400 pp.; no index; bibliographies to individual papers. With four issues published and fifth in press, the bilingual [German/English] Yearbook is firmly established as the premier German periodical on entheobotany, exceeding in quality, frequency and quantity the sporadic *Integration*. With an eclectic, multidisciplinary scope, there is something here for all students of consciousness, and especially valuable is the extensive space given to book reviews and lists of recent publications and conferences. There are generally more English than German articles, and the latter always have extensive English summaries, and vice versa.

*Curare: Zeitschrift für Ethnomedizin* [Curare: Journal for Ethnomedicine], Arbeitsgemeinschaft für Ethnomedizin, 1995 [ongoing and preceding]. VWB [DM86 per annum (two issues); individual issues DM48]. [Im]Perfect-bound paperbacks; ISSN 0344-8622; 300 pp. [approx.]; no index; bibliographies to individual papers. The continuation of the journal *Ethnomedizin*, now in its 18th biennial volume, *Curare* has become ever more a journal of entheogenic ethnomedicine, and in Volume 18(1): 1-264, 1995 presented a special issue on "Mushrooms, Shamanism and the Facets of Consciousness," edited by Christian Râtsch. Unfortunately, 10 of 12 papers were in German, but of course having English abstracts, and the two papers in English were both lengthy—T.G. Schurr's 35-page review of *Amanita muscaria* in Siberian shamanism; and my own 27-page review of *Salvia divinorum* ethnopharmacognosy and human pharmacology. There are always extensive book and conference reviews and salient announcements, and Râtsch is preparing yet another special issue on shamanism.

*Integration: Zeitschrift für Geistbewegende Pflanzen und Kultur* [Integration: Journal for Mind-Moving Plants and Culture], Herman de Vries *et alii* [Eds.], 1991 onward. Bilwis-Verlag [Eschenau, 29; D-97478 Knetzgau, Germany; DM110/DM122 (domestic/foreign), \$75 (three-issue subscription, one per annum)]. Sew-and-glue paperbacks; ISSN 0939-4958; 80-128 pp.; no index; bibliographies to individual papers. Launched in 1991 and with five numbers published [the most recent being No. 6, which appeared in 1996 dated 1995; the second, 1992 issue was numbered 2&3], *Integration* is a bilingual [German/English] yearbook of entheobotany, of which this reviewer is an editor. Although nicely printed on beautiful paper, the clean and solid design by Karl Duschek has been consistently marred by amateurish composition and, as co-editor, I must confess that with regard

to consistency, typographical errors, etc., the editorial quality has been poor. On the other hand, each number features at least several pages of color illustrations, with the first number graced by Pablo Amarango's ayahuasca art [2,4 and 6 with color plates of mushrooms; only No. 5 lacked color plates], and there have been bonuses, like the black-and-white mini-poster of *Psilocybe semilanceata* in 2&3. There have also been many fascinating articles by leading experts, though some would not have passed peer-review in a more conventional journal. Should the composition and copy-editing of *Integration* be placed in the hands of professionals, it could begin to realize its considerable potential.

#### French original

*Fumée Clandestine: Il Était une Fois le Cannabis* [Clandestine Smoke: Once Upon a Time There Was Cannabis], Jean-Pierre Galland, 1993. Les Éditions du Léopard [9, pass. Dagorno; 75020 Paris, France; FF195]. Sew-and-glue paperback; ISBN 2-9507264-0-2; 288 pp.; 5 pp. index; no bibliography. After a long dry spell, from Moreau, Gautier and Baudelaire to Rouhier, de Félice, Michaux and Heim, entheobotanical books are again appearing in French, and Léopard is clearly specializing in this area. Galland's book, like the *Hanf Handbuch* reviewed above, is also a typographical and design patchwork—though more elegant and better illustrated. It deals mainly with European, especially French, politics, with scanty scientific and historical background information, and a concluding section on *Cannabis* in Afghanistan, Morocco, Lebanon, Africa, India, Jamaica, Colombia and the U.S. This book is of particular interest to students of the European scene and those working against prohibition, but the nice illustrations and quite good index give it a broader appeal. Léopard has also recently published an unillustrated translation of Jack Herer's *L'Empereur est Nu. Fumée Clandestine II* [336 pp.] was published in 1995.

#### French translations

*Les Plantes des Dieux* [Plants of the Gods], Richard Evans Schultes and Albert Hofmann, 1993. Les Éditions du Léopard [FF195]. Sew-and-glue paperback; ISBN 2-9507264-2-9; 192 pp.; 5 pp. index; no bibliography. Léopard has also published a paperback reprint of the classic 1979 coffee-table book which, however, suffers from low-resolution [300 dpi laser-printer] 'typography.'

*Histoire Élémentaire des Drogues* [Elementary History of Drugs], Antonio Escohotado, 1995. Les Éditions du Léopard [FF90]. Sew-and-glue paperback; ISBN 2-910718-02-6; 232 pp.; 14 pp. index; no bibliography. Since there is already a French translation of Escohotado's highly-condensed *Elementary History of Drugs*, can the larger English-language market long continue to be left out?

*Les Champignons Hallucinants* [The Hallucinatory Mushrooms], Fernando Benítez, 1995. Les Éditions du Léopard. 112 pp. This recent translation, which I haven't seen, of Benítez' well-known *Los Hongos Alucinantes* [now in its 6th printing in México and originally part of his monumental *Los Indios de México*] includes

also extracts from the French translation of Filvaro Estrada's biography of María Sabina, a text by the lateentheomycologist Roger Heim, and a translation of an article by Gilberto Camilla from the inaugural issue of *Altrove* [vide supra].

#### Portuguese Originals

*União do Vegetal. Hoasca: Fundamentos e Objetivos* [União do Vegetal. Hoasca: Fundamentals and Objectives], Centro Espírita Beneficente União do Vegetal, 1989. Centro de Memória e Documentação [no address, not sold openly]. Sew-and-glue paperback; no ISBN; 141 pp.; no index; 3 pp. bibliography. The UDV, largest of the syncretic *ayahuasca* churches in Brasil, published this brief history and doctrine of the church, founded in 1961 by José Gabriel da Costa. The bulk of the book is given over to appendices on the pharmacology of *chá hoasca*, and details of the official studies made of the organization in the wake of unsuccessful attempts to illegalize its sacramental use of the potion. It concludes with the articles of incorporation of the UDV and a brief 4-page glossary and 27-item bibliography.

*Guiado Pela Lua: Xamanismo e Uso Ritual da Ayahuasca no Culto do Santo Daime* [Guided by the Moon: Shamanism and the Ritual Use of Ayahuasca in the Santo Daime Cult], Edward MacRae, 1992. Editôra Brasiliense [Av. Marquês de São Vicente, 1771; 01139 São Paulo, SP, Brasil]. Sew-and-glue paperback; ISBN 85-11-07035-4; 165 pp.; no index; 3 pp. bibliography. Edward MacRae is at once an anthropologist and a member of the Santo Daime religion, so this is a curious sort of insider's/outsider's look at this fascinating syncretic *ayahuasca* religion, like UDV representative of the Entheogenic Reformation of Christianity in South America. MacRae discusses shamanism in general and *ayahuasca* shamanism in particular, then gives the history of Santo Daime, tracing it back to founder Raimundo Irineu Serra's days as a rubber-tapper in Amazonia in the 1920s and 1930s. Like the UDV book reviewed above, he gives the story of the two legal attempts to prohibit the *ayahuasca* religions in Brasil, particularly referring to the adoption of *Cannabis* as a secondary sacrament by some Santo Daime groups, which seems to have provoked the legal problems. After some details of the ritual use of *daime* or *ayahuasca* in Santo Daime, MacRae concludes with 12 pages of hymns by Mestre Irineu—the singing of hymns and accompanying dancing is one of the most apparent differences between *Daimista* and *Vegetalista* liturgy. While the book has a brief bibliography, it would have benefited greatly by the addition of at least a few pages of index. Since MacRae is of British/Brasilian extraction, as his surname makes manifest, perhaps we might hope for an English edition prepared directly by him.♦

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Jonathan Ott  
Natural Products Co.  
Apartado Postal 532  
Xalapa, Veracruz, México

## BOOK REVIEWS

June Riedlinger, R.Ph., Pharm.D.

Basara, L.R. and  
Montagne, M.

***Searching for Magic  
Bullets: Orphan Drugs,  
Consumer Activism,  
and Pharmaceutical  
Development.***

New York: Haworth Press,  
1994, 266 pp., illustrations  
and appendices, \$39.95  
(hardcover), \$14.95  
(softcover).

Bleidt, B. and  
Montagne, M. (eds.)  
***Clinical Research In  
Pharmaceutical  
Development.***

New York: Marcel Dekker,  
1996, 384 pp., illustrations  
and appendices, \$135.00  
(hardcover).

TWO recent books by Michael Montagne and co-authors present valuable information to MAPS readers on the drug discovery, development, and approval process in the U.S., which has great implications for the future therapeutic use of psychedelic drugs.

*Searching for Magic Bullets* is written for the general public, and it reveals the quest of consumers, health professionals, and drug developers to find safer and faster methods of bringing new medications to the marketplace. The current U.S. drug development and approval process is explored, identifying its strengths and weaknesses, and describing mechanisms by which patients and consumer support groups evade this process as they search for new treatments.

The book is divided into three parts. The first five chapters outline the drug development and approval process, its historical background and modern problems and concerns with it. Illustrations of the process of drug discovery portray Dr. Robert Raffauf (co-author of *The Healing Forest*) in the field and in his laboratory.

The role of the FDA in approving new medications is described and recent changes in the approval process are detailed. The next three chapters provide a case study of the whole process by focusing on the development and approval of orphan drugs. The final three chapters describe how and why consumers evade the traditional system and process to seek alternative treatments from nontraditional sources. Information is provided on empowering both health consumers and professionals in searching for solutions to health problems.

*Clinical Research in Pharmaceutical Development* is a technical textbook and multidisciplinary resource that examines the role of the clinical research process in development and approval of new pharmaceutical agents. It provides both a theoretical foundation and practical application to the creation of novel drugs.

There are three sections, along with a keynote chapter by Albert Hofmann. The first section outlines, in three chapters, the U.S. drug development process, a briefer but more technical version of what is covered in *Searching for Magic Bullets*. The second section introduces in detail the clinical drug research process, and the planning, coordinating and monitoring of clinical trials in five information-packed chapters. It includes many useful forms and tools for documentation of clinical trial data. The third section consists of four chapters that discuss the social, ethical, legal and marketing

aspects of clinical drug development.

The keynote chapter that leads off the book is a wonderful description of the role of both planned research and chance discovery in pharmaceutical development, portrayed by the 40-year career of Albert Hofmann. Dr. Hofmann is known to MAPS readers for his discovery of LSD and isolation of psilocybin, but he is also responsible for developing a wide variety of products for the Sandoz Pharmaceutical company, including one of their most popular products, *Hydergine*. His research developing innumerable compounds shows the true consequence of basic research: only a very small portion of the experimental products that are synthesized in the laboratory and come to a clinical trial prove to be therapeutically useful in humans.

Besides the insight provided by his amazing career, this chapter guides us through the drug discovery process along four paths.

(1) From the ancient sources of folk medicine and from the study of the active principles of medicinal plants.

(2) From modern biological research, from the investigation of substances with physiological activity.

(3) From the pharmacological screening of a very large number of synthetic compounds and natural materials.

(4) From the observed effects of drugs in the patient.

Yet, Dr. Hofmann points out that "today we can say of many drugs that we know how they act and in what way, but we are still quite unable to say why they act as they do. There are no known laws defining the relation between chemical constitution and pharmacological effects. All knowledge of the relations between chemical structure and pharmacological action is ultimately based on empirical data."

He also notes that "not only is it impossible to predict the biological activity of a substance from its chemical structure, it is also impossible to predict its activity in human beings from the pattern of activity demonstrated in laboratory animals."

Dr. Hofmann's remarks serve to show that pharmaceutical research does not and can not always proceed as rigidly along a planned approach as might appear from publications in scientific and technical journals, but that chance, or rather what Walpole called "serendipity" very often contributes much more to success and will probably continue to do so in the future. •

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June Riedlinger, R.Ph., Pharm.D.  
MA College of Pharmacy and Allied  
Health Science  
179 Longwood Ave.  
Boston, MA 02115-5896  
E-mail: jreidlinger@mcp.edu

# The Literature of Psychedelics

## N E W B O O K S

### **Entheogens and the Future of Religion**

*Robert Forte (editor)*

An exciting new book on spiritual benefits of entheogens, especially to our society. Includes essays by Albert Hofmann, Alexander and Ann Shulgin, Terence McKenna, Dale Pendell, Tom Roberts, David Steindl-Rast, Rick Strassman, Eric Sterling, Bob Jesse, and others, and interviews with R. Gordon Wasson and Jack Kornfield. Huston Smith says "These essays constitute the best single inquiry into the religious significance of chemically occasioned mystical experiences that has yet appeared." (1997, Council on Spiritual Practices 1-889725-01-3, 191 page paperback, \$14.95)

### **Textbook of Transpersonal Psychiatry and Psychology**

*Scotton, Chinen, & Battista*

Two main sections: on the theory of transpersonal psychology, from both Western and cross-cultural perspectives; and on clinical practice, with diagnosis, therapy (includes spiritual emergency, near-death experience, religious persons), psychopharmacology, special techniques, and ethics. Includes a great chapter on psychedelic therapy by Drs. Gary Bravo and Charles Grob. Guide to literature, index. (1996, Harper Collins 0-465-09530-5, 463 page hardback, \$54.95)

### **Psycholytic and Psychedelic Therapy Research 1931-1994: A Complete International Bibliography**

*Torsten Passie*

Preface by Prof. Hanscarl Leuner. Includes 687 scientific publications, an overview of Psycholytic (low dose) and Psychedelic (high dose) therapy, and a complete subject index organized by substance, setting, method and treatment result. Hardcover also available. (1997, Laurentius Publishers 3-931614-84-0, 102 page paperback, \$25.95)

### **The Chemistry of Mind-Altering Drugs: History, Pharmacology, and Cultural Context**

*Daniel M. Perrine*

Combines basic and advanced chemical theory with history, pharmacology, and some ethnography. Chapters are organized by drug class: opioids, depressants, stimulants, antipsychotics and antidepressants, psychedelics, dissociatives

and cannabinoids. The psychedelics chapter includes much on LSD history, uses, synthesis, and structure; also psilocybin, tryptamines, mescaline, other phenethylamines, and MDMA. Many references and notes, structures, basic chemistry appendix, index. (1996, American Chemical Society 0-8412-3253-9, 490 page paperback, \$49.95)

### **Brain Mechanisms and Psychotropic Drugs**

*Andrius Baskys & Gary Remington (editors)*

Includes sections on basic physiology, neurotransmitters (with a chapter on serotonin and dopamine), and psychotropic drugs (antidepressants, mood stabilizers, neuroleptics, benzodiazepines, nootropics). Chapter references and index. (1996, CRC Press 0-8493-8386-2, 273 page hardback, \$109.95)

### **On Aztec Botanical Names**

*Blas Pablo Reko*

Important early work by a pioneer of Mexican ethnobotany who helped identify *ololiuhqui* as psychedelic morning glory seeds and *teonanácatl* as the sacred mushroom. Translation and commentary by Jonathan Ott. (1996 edition of 1919 work, VWB 3-86135-426-8, 60 page booklet, \$9.95)

### **The Ibogaine Story: Report on the Staten Island Project**

*Paul De Rienzo & Dana Beal*

Several themes weave through this personal narrative about the use of ibogaine for treatment of heroin, cocaine, alcohol and other addictions, and the politics involved. Includes the cultural history of addictive drug use and of Iboga use and technical speculation on receptor mechanisms of ibogaine and beta-carbolines. Among the six appendices is the book Haoma and Harmaline, about the cultural and linguistic history of *Peganum harmala*. (1997, Autonomedia 1-57027-029-5, 348 page large paperback, \$15.95)

### **To Seed the New Planet: A Story of Self-Realization and Divine Union through Psychedelic Transformation in Nature**

*John Walker*

The story of one man's search for enlightenment and community in Northern California. Through psychedelics and otherwise means, he reaches insights about planetary ecology, the relationships between local and global commu-

nities and his nature as a spiritual being and as an aspect of the Eternal One. Interesting writing and dialog. (1996, Beyond All Publications 0-9645262-9-8, 236 page paperback; \$12.95)

### **Toltecs of the New Millennium**

*Victor Sanchez*

A compelling spiritual autobiography by an anthropologist who studies the Wirrarika in Mexico and then finds manifested an alteration of reality. He examines the way substances such as LSD and peyote generate religious states of consciousness. Publisher's Weekly says, "An interesting read and a revealing examination of sacred territory." (1996, Bear & Co. 1-879181-35-5, 228 page paperback, \$13.95)

### **Hallucinogenic and Poisonous Mushroom Field Guide**

*Gary Menser*

Hip pocket field guide to 24 active mushroom species in the United States plus eight similar poisonous species to avoid. Includes identification key, descriptions, drawings, color photos; background on mycology, a large glossary and a bibliography. *Psilocybin Mushrooms of the World* by Paul Stamets is a better first book for field identification. (1996, Ronin Publishing 0-914171-89-5, 152 page small paperback, \$14.95)

## N E W F I C T I O N

### **Ecstasy Club**

*Douglas Rushkoff*

A fast-paced novel about a small group that takes over a warehouse in Oakland, put on wild raves, and experiment with psychedelics, electronics and reality. Their ultimate goal: "to rebirth ourselves as pure consciousness, breaking through time itself." First, they must fight the local police, "Plugged" magazine, and a mysterious agency and its mind virus. Fun action, although it has some inaccurate (even dangerous) passing comments about psychedelics. (1997, HarperEdge 0-06-017309-2, 320 page hardback, \$16.95)

### **Ecstasy**

*Irvine Welsh*

British fiction in the form of three novellas about "e" and the rave scene. The last one is perhaps best, about a "chemical romance" between an acid party addict named Lloyd and straight-peg Heather who learns about

the "e" experience. Black humor and surreal imagination. (1996, Norton 0-393-31581-9, 282 page paperback, \$12.95)

## N E W E D I T I O N S

### **Psychedelic Prayers and Other Meditations**

*Timothy Leary*

Poems/prayers by Leary, based on the *tao te ching*, to read before, during, and after psychedelic sessions. Designed to help invoke pure energy flow, cellular consciousness, and external and internal sensations. New edition has nice graphics and introductions by Ralph Metzner, Michael Horowitz, and Rosemary Woodruff Leary. (1966/1996, Ronin Publishing 0-914171-84-4, 142 page paperback, \$12.95)

### **The Scientist:**

#### **A Metaphysical Autobiography**

*John Lilly*

Autobiography of a pioneer of dolphin research and research into altered states catalyzed by psychedelics and isolation tanks. By disassociating the mind from the body, often with ketamine, Lilly explores unusual mental spaces. He self-programs the mind—and reality—with new beliefs, exploring previously uncharted territories of pure thought. New edition with new introduction, bibliography. (1988/1996, Ronin Publishing 0-914171-72-0, 248 page paperback, \$14.95)

### **The Drug Identification Bible**

*Tim Marnell*

Several interesting sections: prescription drug markings; controlled prescription drug photos and descriptions; 111 pages of great color photos of illicit drug compounds, plants, and paraphernalia; descriptions of illicit drugs with street names, prices, history, sources, distribution, how used, and effects; useful chapter on legal highs; slang dictionary; bibliography. (1997 3rd edition, Drug Identification Bible 0-9635626-2-2, 729 page paperback, \$34.95)

## P E R I O D I C A L S

### **Eleusis: Bulletin of the Italian Society for the Study of States of Consciousness**

*Giorgio Samorini, Ed.*

*(Some papers are in Italian; the ones below are all in English.)*



Bob Wallace, Mind Books

*Eleusis*, Issue 4: *Salvia divinorum* review (Jonathan Ott); ketamine therapy for alcoholism (Krupitsky); fly agaric use in the 1880's, new African root with ergot alkaloids (Samorini). (1996, 58 page large booklet, \$8.95)

*Eleusis*, Issue 5: Josep Ferigla on ayahuasca imagery; Samorini on visionary eye drops; Francesco Festi on *Scopolia carniolica*; European *Solanaceae* species and ranges. (1996, 60 page large booklet, \$8.95)

*Eleusis*, Issue 6: Gartz, Samorini and Festi discuss a reported mushroom fatality; ethnobotany and pharmacology of *Ledum palustre* and other *Ericaceae*; experiments with *Salvia divinorum*. (1997, 52 page large booklet, \$8.95)

**Integration, Issue 6**  
This issue of the German journal has several good papers in English: Toward the Rational Use of Substances from Mind-Manifesting Plants; Stamets and Gartz on a new Pacific Coast psilocybin mushroom; four more papers

on entheogenic mushrooms; Reflections on the Kava Experience. (1995, 80 page large paperback, \$29.95)

**The Entheogen Review, Issues no. 1-4**

*Jim DeKorne*  
The Review quietly collects and shares reports of first-hand experiments with many visionary plants. Many ayahuasca experiments, alkaloid extractions and other recipes, *Amanita* use, natural lysergics, other exotic plants. (1996, 75 page large booklet, \$19.95)

**Where to get these books**

All books may be ordered from *Mind Books*, the author's company; of course many are available from other good sources. To contact *Mind Books*, call: 800-829-8127 or 707-829-8127, fax: 707-829-8100  
E-mail: books@promind.com  
Web site: www.promind.com  
or write: Mind Books, 321 S Main St, #543, Sebastopol, CA 95472. •

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**ANNOUNCEMENTS**

**NEW EDITION IN PRINT**

**Psychedelic Drugs Reconsidered**

*Lester Grinspoon and James B. Bakalar*  
published by The Lindesmith Center, June 1997.

ISBN: 0-9641568-5-7, 385 pages, paper. \$12.95 plus \$3.95 shipping and handling. To order, call Bookworld distributors at 1-800-444-2524, all major credit cards accepted. •

**ADVANCE NOTICE**

**THE SECRET CHIEF: Publication Imminent**

**The Secret Chief: conversations with a pioneer of the underground psychedelic therapy movement.**

*Myron Stolaroff*

With: Forward by Albert Hofmann, Prologue by Stan Grof, Tribute by Ann Shulgin, Epilogue by Sasha Shulgin.

Cover price for *The Secret Chief* has been set at \$10.95. it should go to press in August and be available in September 1997. A hard-back edition is being planned as well. Information about *The Secret Chief* will be available online at <http://www.maps.org/secretchief/>. The cost of ordering it from MAPS will be \$10.95 plus \$3.00 shipping and handling. Quantity discounts will be available. Please contact Carla at MAPS, (704) 334-1798, to order this book. •

**On television**

THE UNITED STATES BROADCAST of the BBC show *Psychedelic Science* is tentatively scheduled to air on the A&E channel August 27th or 28th, 1997. •

**MAPS Forum**

E-mail List: MAPS-Forum allows MAPS members to interact with each other and with international experts in the psychedelic field. To subscribe, send e-mail to [majordomo@maps.org](mailto:majordomo@maps.org) with "subscribe maps-forum Your Name youremailaddress" (without the quotes) in the message field. •

**APA recognizes research in the field of psychedelics**

A YOUNG INVESTIGATOR AWARD from the American Psychiatric Association (APA) was recently presented to John Halpern, M.D. for a psychedelic-related research proposal. In conjunction with the 150th Annual Meeting of the APA in San Diego, CA on May 18, 1997, Halpern presented at the "Research Colloquium for Young Investigators" a research abstract to study for neurocognitive deficits in a peyote-consuming population. •

**Erratum**

IN THE LAST ISSUE of the MAPS Bulletin, Spring 1997, Vol. 7 No. 2, the report on the 1997 Entheobotany Conference missed mentioning two presentations: New Frontiers of Ethnomycology by Giorgio Samorini, and Ethnopharmacognosy of Psilocybian Mushrooms by Jochen Gartz. Both talks were very well-received and we sincerely regret having missed reporting on them. Videotapes (VHS) from the conference are available from Entheobotany, P.O. Box 311, Sierra Madre, CA 91025-0311, USA; phone/fax: 818-355-9585. •



**Hello from Carla Higdon –  
MAPS' new staff member**

(we hope, permanently)

SOME OF YOU who have received memos or talked with me on the phone may be wondering who I am. Actually, I have been involved with MAPS for two years on both a volunteer and part-time basis. Now, I am here for a trial period of six months to promote new memberships and to provide administrative support for all of you members who are already with us. So, if you have MAPS related questions, direct them to me and I will do my best to provide you with answers, though I am still in the process of getting acquainted with things.

MAPS' growing membership and an increasing number of projects have mandated some organizational restructuring around here, so we are all wearing different hats these days. Rick is working at home and Sylvia and I are in a new office. This is an experiment and, in order for things to continue in this way, we need to increase membership by approximately one thousand. If we succeed, my position will become permanent and you will be seeing more of me.

I am truly delighted to be at MAPS and have the opportunity to contribute to the advancement of medical marijuana and psychedelic research. The systematic banning of psychedelics in the United States and around the world is, in my opinion, one of the great shortcomings of modern culture. How much more arduous is the quest for our divine origins without legal access to these tools that allow us a window of opportunity to glimpse our own perfection. In my own experience, psychedelics have been a source of wonder, wisdom, and growth, a sacred gift to take along on the long journey of life. •



**National Institute of Mental Health  
researcher studies co-administration  
of antidepressants and entheogens**

*Bonson KR, Buckholtz JW, Murphy DL  
(1995). CHRONIC ADMINISTRATION OF SEROTON-  
ERGIC ANTIDEPRESSANTS ATTENUATES THE  
SUBJECTIVE EFFECTS OF LSD IN HUMANS.  
Neuropsychopharmacology 14(6):425-436.*

FOR THOSE WHO DON'T have easy access to a medical library, the bottom line of this paper, and a companion one in another journal, was this:

In people who had taken an SSRI or an MAOI for 3 weeks or more, there was a reduction or an abolishment of their response to LSD. In contrast, people who had been taking a tricyclic antidepressant or lithium for 3 weeks or more had a potentiated response to LSD, usually to an unpleasant degree. Actually, there were some reports of what happens once people had gone off their antidepressant and then took LSD—the change in response to LSD returned to normal after a couple of weeks off the medication. In addition, there was one person who reported on the effects of Prozac (fluoxetine) after only one week's administration and then taking LSD—there was a potentiation of the response (in a good way).

**Personal accounts requested**

Although I am no longer collecting data on the interactions of classic antidepressants and LSD (since these papers are published), I am still collecting data on the interactions of antidepressants with other entheogenic substances, particularly psilocybin and MDMA. I am also trying to work up an appropriate interview for documenting the combined use of LSD and MDMA ("candyflipping"). If any MAPS reader either has personal information on these topics, or has a friend with information, I would be very happy to send along a questionnaire (by E-mail or by postal service). All information is kept confidential and you can use a pseudonym as long as I have a reliable way to contact you. •

Thanks—Kit Bonson, Ph.D., NIMH  
E-mail: [kbsonson@codon.nih.gov](mailto:kbsonson@codon.nih.gov)

## S U B S C R I P T I O N   &amp;   R E N E W A L



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## A V A I L A B L E   F R O M   M A P S

1. PURSUIT OF ECSTASY, Jerome Beck & Marsha Rosenbaum - 240 pp, autographed: \$18/\$24\*
2. ECSTASY: DANCE, TRANCE AND TRANSFORMATION, Nicholas Saunders - 281 pp: \$18/\$24\*
3. LSD IN THE TREATMENT OF SUBSTANCE ABUSE PROTOCOL, Kurland, Yensen & Dryer: \$6/\$9\*
4. SMOKED MARIJUANA VS ORAL THC IN THE TREATMENT OF THE AIDS WASTING SYNDROME PROTOCOL, Dr. Donald Abrams: \$4/\$7\*
5. MDMA PSYCHOTHERAPY IN END-STAGE CANCER PATIENTS PROTOCOL - 42 pp: \$10/\$13\*
6. THE GOOD FRIDAY EXPERIMENT FOLLOW-UP, *article on psychedelics & experimental mysticism* by Rick Doblin, originally published in August '91 Journal of Transpersonal Psychology: \$8/\$11\*
7. JOURNAL OF NERVOUS & MENTAL DISEASE PAPER: 20 PSYCHIATRISTS ABOUT THEIR OWN MDMA EXPERIENCES & REVISION MAGAZINE ARTICLE ON MDMA: \$8/\$11\*
8. COMPLETE SET OF MAPS PUBLICATION BACK ISSUES, 1988-1996: \$55/\$80\*
9. PSYCHOLYTIC AND PSYCHEDELIC RESEARCH 1931-1995: A COMPLETE INTERNATIONAL BIBLIOGRAPHY, Torsten Passie - 102 pp: \$24/\$29\*



\* Indicates price for orders from outside the U.S. Please do not send checks on foreign banks.

## MAPS MEMBERSHIP INFORMATION

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

Founded in 1986, MAPS is an IRS approved 501 (c)(3) non-profit corporation funded by tax-deductible donations from 1,400 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 Bulletin:

Each Bulletin will report on MAPS research in progress. In addition to reporting on MAPS studies, the Bulletin may focus on psychedelic research both in the United States 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—\$99

(If outside U.S. add \$15 postage.)

General members will receive the MAPS Bulletin, which appears on a quarterly basis. The Bulletin ranges from 20 to over 70 pages. Shorter issues alternate with longer ones.

#### Supporting Members: \$100—\$249

(If outside U.S. add \$15 postage.)

Supporting members will receive the MAPS Bulletin and may choose to receive a topical paper or audio tape from a recent conference.

#### Patron: \$250 or more.

Patron members will receive the MAPS Bulletin, and may choose to receive a complete set of the MAPS publication 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

#### O Great Spirit

Whose voice I hear in the wind,  
And whose breath gives life to all the world,  
—Hear me—I come before you,  
One of your children, I am small and weak,  
I need your strength and wisdom.  
Let me walk in beauty  
And make my eyes ever behold the red and purple sunset,  
Make my hands respect the things you have made,  
My ears sharp to hear your voice,  
Make me wise, so that I may know the things you have taught my people,  
The lesson you have hidden in every leaf and rock.  
I seek strength not to be superior to my brothers,  
But to be able to fight my greatest enemy, myself.  
Make me ever ready to come to you,  
With clean hands and straight eyes,  
So when life fades as a fading sunset,  
My spirit may come to you without shame.  
— Prayer by Yellow Hawk, Sioux Chief

On June 27, 1997,  
we lost our  
dear friend and  
MAPS volunteer  
Patrice Burnside to  
a fatal car accident  
in North Carolina.  
She was 23.  
Patrice referred  
to this prayer  
for daily  
inspiration.



Alex Grey – *Nature of Mind*, 1995-96, seven panels, oil on wood in sculpted gilded frame 68"x78" from the *Have You Seen God* mandala collection