Thirty Years of Psychedelic Research:

The Spring Grove Experiment and its Sequels[1]

By Richard Yensen, Ph.D.[2]

and

Donna Dryer, M.D., M.P.H.[3]

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[2] Director, Orenda Institute, 2403 Talbot Road, Baltimore, MD 21216 USA (410) 664-2454
FAX: (410) 466-1410

[3] Medical Director, Orenda Institute.

Introduction

In the late 1960's a multi-million dollar interdisciplinary research center opened in the State of Maryland. This center for psychiatric research was a consequence of research in psychedelic psychotherapy performed by Albert Kurland and his associates at the Spring Grove State Hospital. Though the studies at Spring Grove State Hospital and those that followed at the Maryland Psychiatric Research Center (MPRC) ended in 1976, they remain the largest, most sustained and systematic study of psychedelic drugs and psychotherapy yet attempted.

This article emerged from a dialogue between the authors. We were doing a retrospective analysis of the Spring Grove research before designing our own study, one that we hope will advance this tradition (Yensen, Dryer & Kurland, 1991). We reviewed the studies done at the Spring Grove State Hospital and the Maryland Psychiatric Research Center asking the following questions: 1) Why did some studies have such good results and others such equivocal ones? 2) What mistakes occurred that future researchers in this area might avoid? 3) The research team used statistical assessment and double-blind controlled studies. This approach is the accepted standard method for studying psychoactive compounds. Is this methodology appropriate and sufficient to study psychedelic medicines?

Our analysis of the above questions is separated into five themes: 1) A discussion of the evolution of the therapeutic paradigms used in the studies. 2) An analysis of the political and interpersonal contexts affecting the research. 3) A description of the major studies conducted at Spring Grove State Hospital and the MPRC highlighting the methodological issues. 4) A survey of the non-drug therapies that evolved from the psychedelic research. 5) The current status of research and possible future directions for psychedelic research.

Spring Grove State Hospital

early observations

Our group's research with psychedelic drugs began with LSD in the early 1950's. The first study at Spring Grove State Hospital was an attempt to characterize the effects of LSD upon hospitalized, chronic schizophrenics. Four patients received one hundred micrograms (100 µgrams) administered daily in a single intramuscular injection for fourteen (14) days. The initially marked changes in behavior diminished rapidly with little or no response noted after the second dose.

In order to study the unusually rapid tolerance the experimenters varied the drug free interval and observed that after five drug free days a strong reaction would occur. At four days some patients showed a mild reaction, but not the equal of the first day. After six drug free days a reaction as strong as that on the first day was observed.

In an attempt to overcome the tolerance exhibited by these four patients, dosage was increased by 100 µg daily. Every patient would receive 100 µg on day one, 200 µg on

day two and 300µg on day three, up to 500 µg. This regimen yielded a response on the first day, a slight response on the second day, no response on days three and four, and a very questionable response on the fifth day. Five hundred micrograms (500 µg) was the maximum dose used.

Cross-tolerance with various LSD derivatives was tested. Cross tolerance was noted with LAE and brom-lysergic acid. On the theory that what appeared to be physiological cross tolerance might be psychological in nature (that the patients were just becoming adjusted to the psychological effects of LSD) the experimenters alternated LSD and mescaline HCl[4]. There was no cross tolerance between LSD and mescaline HCl[5].

This initial descriptive and naturalistic study came to include twenty (20) schizophrenics in the various regimens of LSD administration. Important conclusions from this study included the realization that it is impossible to administer LSD in a double blind fashion. Although LSD was administered in double blind fashion at first, both experimenters and hospital staff were aware which patients received LSD within an hour of drug administration.. The authors suggested that the hallucinations induced by LSD might have value for helping therapists understand the underlying dynamics of a patient's psychopathology. One can also observe in retrospect the powerful effect of the then new and now almost universally accepted paradigm of the psychoactive drug. This way of thinking about pharmacological substances and their effects on humans was defined by early major neuroleptic drugs like Thorazine and Reserpine. The basic assumptions that indirectly guided this research included the conjecture that LSD could be given on a daily basis to patients in order to produce a chemotherapeutic effect as with other psychiatric drugs. It was assumed that the effects of LSD could be adequately observed and understood by trained clinicians not directly involved with the patient's treatment, who had no prior relationship with the patient. In summary the expectations were for LSD to be a drug like any of the other known psychoactive drugs. The results were startling, inexplicable and unexpected:

> One catatonic patient who had been mute for some years suddenly burst out into loud wailing sobs which were shortly followed by overwhelming bursts of laughter starting 35 minutes after the drug was given. This patient seemed most distressed and shaken. Intermittently she would open her mouth as if she were trying desperately to talk or at least to exercise the muscles of her mouth. She also expressed a state of acute anguish with her body movements. When asked why she was crying, she said, "You should never leave the farm." A half hour after the crying started, the wails seemed to end in a giggle. Soon the tears diminished, and she had almost continuous waves of laughing for another hour or so. The patient then began to walk about the ward studying the walls and windows as though she were seeing them for the first time. She seemed to respond to hallucinations, for she began to talk to non present individuals. Every few moments for the next few hours she would shake with laughter, and then she might talk a little. Her speech was never particularly coherent, and she soon became preoccupied with the fact that something or somebody was tickling her. She often said she enjoyed things very much and that this was a nice ward, etc.
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> Three hours after the drug was given, the patient was prancing about the ward and still bursting into gales of laughter. She could hardly eat since she said she had no appetite. That afternoon she played basketball for the first time since she was admitted to the hospital although the opportunity had been offered to her many times. She seemed interested in the effort and was

[4]Mescaline HCl was used rather than mescaline sulfate because it was more soluble and easier to prepare for intramuscular injection.

[5]This finding is contradicted by later studies with mescaline sulfate in animals and humans. Yet mescaline does not affect 5HT2 receptors while LSD does.

> pleased at her attempts. She walked about briskly, smiling broadly, and occasionally laughing. That evening she went to a dance and danced with another patient for the first time. She continued talking until bedtime. the next morning when she awoke, she was her old catatonic self, unable to speak, unable to show interest in anything about her, and quite withdrawn.
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> On this day the patient received another injection. She laughed a little at first, spoke few words, but a few hours later lapsed into her previous mute and withdrawn behavior. Thus on the second day we had slight evidence of change from her previous behavior, however much less than the change observed on the first day the drug was given.
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> When the patient received the same dosage the third morning, she showed no response at all (Cholden et al., 1955, pp. 213 & 217).

Observations like these helped the team to realize that this drug was unlike other psychoactive medications because of its unique combination of dramatic alterations in consciousness, profound psychodynamic action as well as the rapid building of tolerance. They realized that this combination of effects required a trained clinician with a well established relationship to the patient in order to understand, correctly describe and appreciate the dynamics of this complex situation (Cholden, Savage & Kurland, 1955).

After this rudimentary work there was a chronological gap in the research at Spring Grove State Hospital. Dr. Kurland involved himself in the study of other psychoactive medications. Charles Savage trained as a psychoanalyst and pursued his career as a psychedelic researcher in California at the Institute for Advanced Study.

Spring Grove State Hospital—Cottage 13

a humble beginning

During the late 1950's and early 1960's a young psychologist, Sanford Unger, began collaborating with Albert Kurland and suggested the renewed pursuit of psychedelic research. Unger had contact with the team at Hollywood Hospital in Vancouver, British Columbia, where work was in progress using a psychedelic approach in the therapy of alcoholism. The therapy involved administration of a single overwhelming high dose of LSD (400-800 µgrams) within a specially structured environment of expectations and stimuli designed to foster a mystical experience (Stace, 1960; Pahnke, 1963). By then the researchers were aware that the experiential roots of this approach were shamanistic, it seemed to offer a convenient, short, and intense therapy—a pragmatic vehicle for studying scientifically the effects of psychedelic substances as adjuncts to psychotherapy.

The project at Spring Grove began in 1963. A modest cottage on the hospital grounds housed the small research team. It is important to note here that the facilities were unpretentious and unobtrusively integrated into the overall facility of Spring Grove State Hospital. This hospital is one of the oldest mental hospitals in the United States. At the time Spring Grove was well-known for its progressive treatment. Cottage thirteen was a white clapboard two story cottage with four rooms and a bath on each floor. Two rooms were outfitted with sound systems and designated as treatment rooms for the psychedelic drug sessions.

The atmosphere was earnestly optimistic. The clinical staff of the State Hospital collaborated in the selection and support of patients undergoing the new therapy. The

natural expectation was that in time they would be trained to use this exciting and dramatically effective new treatment. The sense of enthusiasm, confidence and hope was contagious. A devoted team from the State Hospital Alcoholic Rehabilitation Unit affirmed the work with LSD totally. Although in the early work a no-treatment group was proposed as a control group, these plans had to be abandoned. Both the patients and the staff of the State Hospital saw the psychedelic treatment as so valuable and effective that they adamantly objected to withholding the treatment from any patient who qualified for it on ethical and humanitarian grounds. The research team acceded to these demands in a decision that preserved morale and working alliance while sacrificing scientific precision (Unger, 1969; Kurland et al., 1966 & 1967).

The research with alcoholics grew from a pilot phase of open clinical trials to double-blind trials. The response of these patients to the psychedelic treatment was promising. The research grew to include hospitalized neurotics who would today be diagnosed as personality disorders, primarily borderline.

In 1965, the research at cottage thirteen came to national attention. The CBS television network produced a one hour television documentary, ***LSD: The Spring Grove Experiment***. This film followed the LSD treatment of one male inpatient alcoholic and one female inpatient neurotic. The excellent quality of this documentary drew much positive attention toward the research. The film gave a balanced and responsible yet compelling presentation of the promising new treatment.

Work with LSD Expands

In 1966 tragedy struck this enthusiastic group. A professional member of the Spring Grove research department, a woman in her forties, discovered she had metastatic cancer. Well aware of her terminal prognosis, she became significantly depressed. She knew of the effectiveness LSD psychotherapy had demonstrated with alcoholics and neurotics, so she sought the treatment for herself. In considering her request a literature search revealed work done by a Chicago anesthesiologist, Eric Kast. His study assessed only chemotherapeutic analgesic effects of LSD, but it showed the drug was safe for cancer patients and suggested that LSD might furnish some pain relief. There also was an article in Harpers Magazine on LSD and the anguish of dying by Sidney Cohen (Cohen, 1965). With this support from the literature they forged ahead. The staff member was granted an LSD session. In her own words:

> Mainly I remember two experiences. I was alone in a timeless world with no boundaries. There was no atmosphere; there was no color, no imagery, but there may have been light. Suddenly I recognized that I was a moment in time, created by those before me and in turn the creator of others. This was my moment, and my major function had been completed. By being born, I had given meaning to my parents' existence.
>
> Again in the void, alone without the time-space boundaries. Life reduced itself over and over again to the least common denominator. I cannot remember the logic of the experience, but I became poignantly aware that the core of life is love. At this moment I felt that I was reaching out to the world—to all people—but especially to those closest to me. I wept long for the wasted years, the search for identity in false places, the neglected opportunities, the emotional energy lost in basically meaningless pursuits.
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> Many times, after respites. I went back, but always to variations on the same themes. The music carried and sustained me.

> Occasionally, during rests, I was aware of the smell of peaches. The rose was nothing to the fruit. The fruit was nectar and ambrosia (life), the rose was a beautiful flower only. When I finally was given a nectarine it was the epitome of subtle, succulent flavor.
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> As I began to emerge. I was taken to a fresh windswept world. Members of the department welcomed me and I felt not only joy for myself, but for having been able to use the experience these people who cared for wanted *me* to have. I felt very close to a large group of people.
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> Later, as members of my family came, there was a closeness that seemed new. That night, at home, my parents came, too. All noticed a change in me. I was radiant, and I seemed at peace, they said. I felt that way too. What has changed for me? I am living now, and being. I can take it as it comes. Some of my physical symptoms are gone. The excessive fatigue, some of the pains. I still get irritated occasionally and yell. I am still me, but more at peace. My family senses this and we are closer. All who know me well say that this has been a good experience. (Pahnke et al., I970)

The dramatic success of this first attempt launched a major new research focus, the study of psychedelic psychotherapy in the treatment of terminal cancer patients. The work evolved over the next two decades to include some patients that were diagnosed with cancer but not conclusively terminal. In 1967 the results of the first 6 cancer patients were presented by Dr. Walter Pahnke at the American Psychiatric Association meeting.

In 1972 the last LSD study in this series was published. Thirty-one (31) terminally ill cancer patients suffering from anxiety, depression and uncontrollable pain received 200 to 500μg of LSD, usually administered intramuscularly. Multiple sessions were allowed in the study design, but only three patients received more than one session. The early Canadian technique was already being modified to include more psychotherapy and these patients received intensive preparation (6 to 12 hours over 2 to 3 weeks) and follow-up care. Before and after LSD sessions the physical and emotional status of these patients were rated by: physicians, nurses, family members, the LSD therapist and an independent rater. Measurements of narcotic use were also included. On a global measure of improvement that blended the ratings of the observers already mentioned, 9 patients (29%) improved dramatically, 13 patients (42%) were moderately improved and 9 patients (29%) were essentially unchanged. Relief from pain was startling and persisted for a period of weeks or months following the session. This result was statistically significant ($p<.001$). The amount of narcotic medication decreased but this trend was not statistically significant. There were many complicating factors because other psychoactive medications were involved (phenothiazines, hypnotics and tranquilizers) and not systematically recorded in this study. Also some patients reported that pain that was unbearable before the session became bearable after the session on the same level of narcotic medication (Richards et al., 1972).

Extra-Pharmacological Factors: Set & Setting

The preliminary results of pilot studies with alcoholics, inpatient neurotics, and cancer patients were a reflection of the compelling LSD-psychotherapy treatment within this optimistic and coherent environment of expectations. This dynamic set and setting was a consequence of both conscious and unconscious factors among the research team. The interpersonal environment was designed purposely so that all factors of enthusiasm by the staff might contribute to the patient's preparation for a profound mystical breakthrough and fundamental life change. The research team's morale was excellent since they were

spending all their time doing this new and exciting treatment. In a powerful way they saw that they even had something to offer the hopeless!

The startling level of improvement using the experimental treatment in alcoholics could best be demonstrated when the results were compared with statistics gathered on patients' improvement in routine hospital treatment. In study that began in 1963, 69 patients improved significantly on all the scales of the MMPI, except the Hypomania scale. The conclusions were that no patients were harmed and some patients demonstrated substantial improvement. In this very challenging patient population 23 patients (or 33.3% of the sample) were abstinent at the six month follow-up. The result of the conventional approach to treatment at the Alcoholic Unit was only 12% rehabilitation in a prior study of routine Spring Grove Hospital treatment (Kurland et al., 1971 p. 92 and Kurland et al., 1967).

The research team realized that the next logical step was more rigorous study with a control group. Considering Kurland's earlier research which showed a true double-blind procedure was impossible to maintain, they designed a study with low dose LSD as the control condition. A low dose would produce the physiological effects, mood alterations, and perceptual changes unique to LSD without facilitating a full-blown psychedelic reaction. The mystical or peak experience was regarded as the motivational and transformational catalyst. The use of a 50 µgram dose of LSD as a control would also permit an assessment of the power of a large dose and mystical breakthrough to be contrasted with the emotional catharsis and psychodynamic resolution realizable with a smaller dose. The same highly motivated team would treat both groups. The hypothesis was that only the high dose group would achieve mystical experiences and hence improve the most.

This study involved 135 patients who were randomly assigned to either high dose (450µg) or low dose (50µg) LSD treatment. A battery of psychological tests was administered prior to acceptance in the program and one week after the drug session. The patient's progress was monitored at 6, 12 and 18 months after completing the therapy program.

One week after the session both treatment groups demonstrated statistically significant improvement in their test scores. The follow-up ratings were made by an independent team of social workers. They indicated that 44 percent of the high dose group were "essentially rehabilitated" at six months. Only 25 percent of the low dose group me this criterion at the same point. Abstinence was 53 percent for the high dose group and 33 percent for the low dose group at six months. This finding was significant statistically ($p<.05$). At one year post therapy there was no significant difference between the two groups. Yet at one and a half years after treatment, psychedelic psychotherapy had been successful with over half of the alcoholics treated in this program (high and low dose patients combined). Alcoholics receiving conventional therapy had a 12% improvement rate.

The results demonstrated an interesting failure. The team did not fully appreciate the positive impact of its own enthusiasm and *esprit de corps* so intentionally and carefully

cultivated. The inspiration in the team grew, fueled by sharing the mystical breakthroughs of patients undergoing high dose LSD sessions. This further stimulated the already exemplary value placed on human life by the researchers themselves. This motivated group of therapists worked uncommonly well. The 50 µgram control group improved more than expected. A few patients even had full blown mystical experiences on this threshold dose of LSD. Others did quite significant work on their inner conflicts under nearly ideal therapeutic circumstances. At the conclusion of the study, the staff broke the blind and were chagrined at the results, but felt that they had been true to their values and tried their best with all patients. The very hypothesis of this carefully designed study, turned out to be the major problem: Because the "control" was itself LSD, it was a much greater activator of the therapeutic relationship even at a low dose than was previously recognized. The low dose had become another experimental condition rather than the control. The impact of the positive dynamic among the staff was profoundly underestimated. The combination of these drug and non-drug factors produced equivocal results.

Another possible conclusion was that psychotherapy alone was far more effective with alcoholics than suggested by any other study in the literature. However, both the experimental and the "control" groups produced greater improvement than previous studies of routine hospital treatment. Although the search for an adequate control did not meet with success in this study, the role of non-drug factors was demonstrated to be far more powerful than even this research group had anticipated (Kurland et al., 1971).

The Evolution of Paradigms and Therapeutic Approach

from Psychedelic to Psychodelytic Paradigms.

Over the years from 1963 to 1976 the therapeutic techniques employed in this research matured and changed. The clinical staff completely changed during this time as well. The beginning psychotherapy research efforts were a direct application of the Canadian technique of psychedelic psychotherapy. The psychedelic (mind manifesting) approach. This technique, as practiced at Spring Grove, used a single large dose of a psychedelic with a specialized environment, eyeshades, headphones and specially selected music. Conventional interpretive psychotherapy was primarily a preparation for the LSD session. In this method there is a preparatory period where the therapist explores the background of the patient with a goal of establishing rapport and preparing the patient for a single overwhelming high dose psychedelic session. When LSD is used in this procedure, the dose ranges from 250 µgrams to 800 µgrams and the session lasts from 8 to 12 hours. Throughout the research endeavor all psychedelic sessions were run by a therapeutic team. The primary therapist and a co-therapist of the opposite sex were in constant attendance throughout the day of the drug session. The morning and early afternoon of the drug session was spent listening to music over stereo headphones with eyeshades to block out the external environment and allow a contemplative inner focus. Musical programs were evolved and eventually a music therapist joined the staff full time. She developed motivational sequences of musical accompaniment for psychedelic

therapy. Western classical orchestral and choral music sequences were played to support and express the expansiveness, profundity, sense of sacredness & awesome qualities of the psychedelic experience. The technique aimed to facilitate a breakthrough to transcendental experience (Bonny & Pahnke, 1972). The therapeutic team did not usually offer interpretation but instead offered emotional support and companionship. In the afternoon the patient might sit up and experience visual stimuli, for example pictures of family members. or beautiful art or scenery. Props were used to great effect in psychedelic therapy. A single, long stemmed red rose was part of every session. During the afternoon time was set aside to gaze deeply at the rose under the effects of LSD. Patients were encouraged to look at themselves in a mirror so that they might observe the effects of thinking about their past use of alcohol on their self-image. After the drug session the therapy focus was to consolidate insights and positive motivations for change from the peak or mystical experience into everyday life.

Psycholytic Orientation Exerts Influence

In 1968 Stanislav Grof, a Czechoslovakian psychoanalyst, joined the psychedelic research team. This event marked a time of growth and transition for the therapeutic staff. Grof had developed a complex theoretical schema for understanding the phenomenology of the psychedelic experience and had done much careful work under the Psycholytic approach. The Psycholytic approach involves the use of repeated low doses of psychedelics in a psychoanalytically oriented psychotherapy or a psychoanalysis. The doses used with a drug like LSD would fall in the range 75 µgrams to 250 µgrams. The sessions typically continued for six months to two years. The process involved in-depth analysis of the drug experiences both during and after the drug sessions. The experiential goal of this type of work is to uncover psychodynamically relevant material including repressed childhood memories. It is also useful that psychedelics can enhance the transference and, at the same time, enhance the patients' insight into their transference toward the therapist.

Grof had already suggested in a paper presented to the European Psycholytic Association that perhaps an integration of the psychedelic method and the psycholytic method would be a valuable approach. Psycholytic therapy produced insight and psychedelic therapy seemed to produce a uniquely powerful motivation toward change. Grof strongly influenced the last years of work at the Research Center. He created a more psychoanalytic atmosphere and the trend toward including more interpretive psychotherapy in psychedelic work blossomed. He proposed a birth paradigm for understanding psychedelic experience and offered a system of interpretation where negative emotional experiences were useful and could be worked through in a systematic way. This supported a therapeutic process that included deeper experiences of conflict with the knowledge that eventually the negative experiences led to transformation, mystical union and re-birth.

As the clinical staff examined patients who returned for additional treatment several years after the original studies, it became apparent that these individuals had experienced a relatively long-term withdrawal from alcohol (up to five years). It seemed that the

psychedelic peak therapy provided these individuals with a mystical experience and new insight into the meaning of their lives. The new sense of meaning in their lives slowly diminished following the treatment. This seemed to occur when important conflicts were not completely resolved in the preparatory and post-LSD integrative therapy. Another important factor was that the integration of insights from the LSD session into everyday life was usually incomplete. Despite these shortcomings in their therapy and subsequent adaptation, these individuals had remained sober for significant amounts of time, but when confronted with high-stress life situations, they succumbed to alcohol. The team felt these cases strongly suggested that psychedelic psychotherapy could be improved by including more extensive psychodynamic therapy and additional LSD sessions.

A Melding of Two Approaches: The Psychodelytic Paradigm

Consequently, the last research conducted with psychedelics at the Maryland Psychiatric Research Center was guided by the extended psychedelic or psychodelytic paradigm[6]. This approach involved several high-dose sessions with a psychedelic drug in an environment previously used for psychedelic therapy. The number of sessions increased and the theoretical framework expanded to include a greater emphasis on personal dynamics, perinatal dynamics (Grof, 1976), ego transcendence, and other transpersonal experiences. The thorough exploration of the personal history of the patient was recognized as an important factor contributing to the probability that a peak experience would occur. Thus the aim of this therapeutic approach became to work through the early childhood traumas that surfaced during individual psychotherapy and the early drug sessions.

Conversely, working through was facilitated by later mystical experiences. These profound experiences provided the patient with a deeply experiential, philosophical position from which life had a new meaning: life itself was intrinsically healing. Difficult memories were often accepted easily from the new vantage point. This approach combined the positive aspects of the psychedelic and psycholytic paradigms (Di Leo 1975-76, Grof 1969).

Eventually, the Clinical Sciences Division of the Maryland Psychiatric Research Center conducted several studies using the psychodelytic or extended psychedelic approach with neurotic outpatients and inpatient alcoholics by administering compounds with a shorter duration of action than LSD, such as dipropyltryptamine and psilocybin (Richards and Berendes 1977; Rhead et al., 1977). The results of these studies and a pilot study (Yensen et al., 1975) that explored the use of the milder psychedelic drug MDA (3,4-Methylenedioxyamphetamine) in neurotic outpatients had promising results.

In this later analysis, the psychedelic paradigm appeared to be most useful in work with terminal cancer patients (Richards et al., 1977), whereas the newer, more involved paradigm seemed most promising with neuroses and character disorders (Richards and Berendes, 1977-78; Yensen, 1976).

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[6]This name was suggested by Stanislav Grof in an address to the European Psycholytic Association (Grof, 1969).

From Psychodelytic to Holotropic Therapy

Grof evolved a new orientation out of the psychodelytic approach. The new approach he calls holotropic, which means moving or growing toward wholeness. The name and the approach reflect a deeply optimistic view of the intrinsic healing mechanisms released through altered states of consciousness.

On the one hand, the Holotropic modality does not focus directly on resistances, but instead relies on the effects of the altered state of consciousness to erode or explode resistance and defense. This leads at its worst to an attitude that regards the psychedelics as inherently therapeutic. If a resolution does not occur in one session then another session is indicated. This is a valuable formulation because it allows the therapeutic relationship to evolve and develop, but it is weak because it ignores the possibility of a therapeutic impasse. As a consequence, the need for therapist skill to interpret material from a psychedelic session is not stressed.

On the other hand, Grof offers a rich map of the territory of the inner psychedelic journey. This theory links emotion from childhood experiences to global pools of affect associated with the birth trauma. The intensification of the altered state leads finally to breakthroughs into the transpersonal unconscious and many varieties of experience beyond the time & space boundaries of the ego. This is the farthest reaching and most meticulously detailed map of consciousness produced in western scientific research into the human psyche. It links the innermost depths of the psyche with the essential fabric of the universe (Grof, 1988).

The Political Context.

New facilities and changing funding patterns

By 1969 the Governor of Maryland, Spiro T. Agnew, inaugurated a large four-story building with an attached 200 person auditorium. The basement had a sensory isolation tank, two sound-proof sensory isolation rooms and a psychophysiology facility with EEG and mini-computer. The third floor was the basic sciences floor with several laboratories. The second floor of this building was devoted to the Clinical Sciences Division and housed two completely self-contained treatment suites with private bathrooms and small kitchens. These rooms were decorated with art, sofa and overstuffed chairs, in the relaxed manner of a comfortable living room. The staff of the entire Research Center included over one hundred people. A primary focus was to be psychedelic research. This included the development of new compounds, isolation of active ingredients in plant materials and capacity to perform basic toxicity assessments with animals.

Conflict with the Hospital Staff

At the same time that this pristine, air-conditioned building sprouted on a hill overlooking the old state hospital buildings, new federal legislation cut funding for state hospitals. There was strong political pressure to move institutionalized patients out of state hospitals and into community settings. The new legislation created community mental

health centers that absorbed much of the funding previously devoted to the state hospitals.

Many members of the state hospital staff grew jealous and angry towards the well salaried, highly credentialed, predominantly white, staff of the fancy new air-conditioned Research Center. Meanwhile their own working conditions steadily deteriorated. Studies of inpatients done during this time, compared "routine hospital treatment" to experimental procedures. It is important to note the animosity that this situation engendered between the formerly cooperative and enthusiastic staff of the state hospital and the suddenly more privileged research staff.

This context also may account for the great difference in results between the studies done with inpatients and those done with outpatients during this time. Only the inpatient studies that used the "routine hospital treatment" as the control group were affected by the jealousy of the hospital staff. Only these studies had problematic results that failed to demonstrate the efficacy shown in earlier studies.

Public concern about possible chromosome damage was raised in 1967. An in vitro study was published in the journal Science which reported a higher chromosomal aberration rate in white blood cell cultures to which LSD had been added (Cohen et al., 1967). A series of in vivo studies followed, mostly performed on users of illicit LSD. These studies produced contradictory results due to some major shortcomings of the experiments. The studies had no adequate controls and no measurement of the chromosome breakage rate prior to LSD use. Since the furor over these reports had implications for human research with LSD, our group decided to investigate this area in collaboration with the National Institute of Health. In 1969, Tjio, Pahnke, and Kurland reported on a study done at Spring Grove State Hospital: a prospective, double-blind controlled experiment with 32 hospitalized alcoholic or neurotic patients who had never taken LSD prior to the study. This study was the largest and the only one to date that controlled for other drugs taken, concurrent infections, and used pure LSD of known dosage. The results of the study gave no evidence that LSD damages the chromosomes of human subjects given pure pharmaceutical quality LSD. Although early reports were widely publicized, this later careful research was summarily ignored by the popular press. (Tjio et al., 1969)

Other dramatic changes were also taking place at the Research Center. In 1971, Walter Pahnke, Director of Clinical Sciences, died in a scuba diving accident. He had been an energetic, charismatic leader in the research team. His successor as Director of Clinical Research, although a board certified psychiatrist, had no background in psychedelic research.

Scientists were quickly recruited to fill the research positions that threatened to vanish from future budgets if not filled within a few months of their creation. As many, hastily retained, investigators arrived to the Center, they brought their own areas of interest. Through this process the focus of divisions other than Clinical Sciences, strayed from the original vision of a multidisciplinary center to study psychedelics to include a broad gamut of research in basic sciences as it related to psychiatry.

During this time the popular press continued sensational coverage of the negative effects of LSD abuse. The State Hospital staff's attitude toward the research continued its rapid decline.

Hospitalized Neurotic Study

Work with neurotics progressed at Spring Grove alongside the studies with alcoholics. In 1973 Oliver Lee McCabe reported on a study of 96 patients, 31 received a high LSD dose (350 µgrams), 31 a low LSD dose (50 µgrams) and 37 control subjects who received a combination of therapeutic measures as prescribed by the hospital staff. This control therapy was varied and included psychotropic medication, electro-shock therapy, individual psychotherapy & group psychotherapy on the hospital ward. The patients were nominally hospitalized chronic severe neurotics, but most of them met the now more carefully defined criteria for a more severe borderline diagnosis.

Immediately following the treatment program all three groups improved significantly. High dose LSD treatment appeared superior to conventional treatment on 19 measures. Low dose LSD seemed superior to conventional treatment on 11 measures. The improvement was not just a reduction in psychopathology but also reflected and increase in measures of positive mental health.

At six months following the therapy all groups showed significant improvement in functioning. There were no statistically significant differences between groups at this point. At one year there were a few measures that favored the high dose LSD group over conventional treatment. The samples were considered skewed at this point and no longer representative of the original group. At 18 months there was no difference between the groups.

This study was beset by low dose responders and was confounded by the broad scope of neurotic disorders treated. There were problems randomizing males and females and different diagnoses. There was a suggestion that the single or double dose approach was inadequate for this level of pathology. In addition, the women in this study "tended to develop a protracted transference neurosis which was only partly resolved in the course of the treatment." (Savage et al., 1973 p. 43). Savage's comments raise a concern as to how adequately the psychedelic therapists were trained to manage transference in this difficult population.

Heroin Addict Study

Savage and McCabe published a paper in 1973 describing a controlled study of thirty-six (36) male heroin addicts in a halfway house. The treatment model included daily urine monitoring, several weeks of preparatory therapy and one high dose (200 to 500 µg) LSD session. Thirty-seven (37) patients randomly assigned to the control group received daily urine surveillance and weekly group therapy in an outpatient abstinence program.

Abstinence data significantly favored the LSD group during the one year follow-up.. Nine (25 % of the 36 subjects in the LSD group) maintained complete abstinence for one year. Two (5% of the 37 subjects in the control group) remained abstinent over the same period. Three LSD patients relapsed briefly and then remained abstinent for the rest of the year. This brings the total abstinent among the LSD group to 12 (33%). Additional research with outpatients was suggested (Savage & McCabe, 1973).

Other Research Projects

In spite of political and journalistic pressures and some equivocal results, the research expanded and diversified. The Clinical Sciences Division ran studies with alcoholics, heroin addicts, inpatient neurotics, outpatient neurotics and instituted a unique program for professionals to have a "training experience" with LSD. The drugs explored included LSD, DPT (Dipropyltryptamine), MDA (3, 4-Methylenedioxyamphetamine), DOET (2,5-Dimethoxy-4-Ethyl Amphetamine), Psilocybin, and, as an active placebo, the stimulant Ritalin (Methylphenidate HCl).

LSD Training Program for Mental Health Related Professionals

Beginning in June of 1969 a program was instituted to provide one to three LSD training sessions to mental health professionals. This program sought to provide subjects with a better understanding of: 1) the unconscious or primary process 2) the problems of young people involved in drug abuse 3) how better studies of psychedelic drugs might be designed 4) better insight into their own minds and enhancement of their therapeutic skills including empathy. Two hundred three (203) professionals received one to three LSD sessions in this program between 1969 and 1976.

In follow-up reports many trainees reported considerable benefits from their LSD sessions. These positive reports included profound insights into philosophical and religious systems, relief from emotional and psychosomatic symptoms, enhanced feelings of well-being and overall improved functioning. Many of these changes were confirmed by family members and professional colleagues (Harari & Kashof, 1972 give an account of their subjective experiences in this program).

Alcoholism and a New Psychedelic

A low dose DPT pilot study with inpatient alcoholics was reported in 1973. This was the last study conducted where a positive relationship existed between the research center staff and the Alcohol Rehabilitation Unit staff at Spring Grove. There was an initial double-blind assessment of low doses of DPT on measures of interview depth and quality (Soskin et al., 1973), and then 51 patients were treated in a non-double-blind format. The results were “dramatic improvement” from pre to post-treatment on a variety of psychological test variables many of which reached high levels of statistical significance. At six months follow-up five variables were measured: 1) occupational adjustment improved ($p<.01$), 2) residential adjustment improved ($p<.02$), interpersonal adjustment improved ($p<.001$), abstinence ($p<.001$), global adjustment improved ($p<.001$) (Grof et al., 1973).

Federal funds were secured to follow-up on these extremely promising results. The outcome of this final alcoholic study (conducted during the time described above when staff relationships were in extreme distress) was published in 1977. The study assigned 175 patients randomly to three treatment groups: DPT therapy, conventional therapy and routine hospital treatment. This regimen was completed by 103 of the original 175 patients. The research center staff conducted both the conventional therapy and the DPT therapy. The hospital staff conducted the routine hospital treatment. There was a differential dropout rate between the DPT group and the other groups. Many patients assigned to the DPT group dropped out of treatment. Earlier discussion of the dynamics with the Alcohol rehabilitation unit describe the atmosphere of competition and fear promulgated at this time.

This study is an example of the effects of non-drug factors on outcome. These equivocal results were obtained when the state hospital staff felt their treatment was pitted against the Research Center staff. This created a hostile environment for the patients undergoing the psychedelic treatment. There were no significant differences between the three groups. The composition of the follow-up groups was confounded because of difficulty in locating patients (Rhead et al., 1977).

With so many confounding variables this study defied straightforward analysis. One conclusion is that DPT is not effective as a treatment for alcoholism. This contradicts earlier findings from this team but confirms one other study (Another conclusion might be that the quality of therapy was not the same as that in the encouraging pilot work, since there was only a partial overlap of clinical staff between the two studies. The concurrent studies with outpatients indicate that the staff performance was at high levels with that population. This suggests that the dynamics with the state hospital staff may be significant.

Outpatient Studies

In contrast to these inpatient DPT studies, Richards published a paper in 1976 with terminal cancer patients. The results were overwhelmingly positive and reflected the research staff's continued high level of motivation and enthusiasm (Richards et al., 1976).

In another outpatient study Yensen published a report on ten outpatient neurotics using MDA as an adjunct to psychotherapy. The therapy process lasted two to six months with a maximum of 75 hours. Two to four MDA sessions were given with doses ranging from 75 mg to 200 mg. There were standardized assessments before and after treatment and a six month follow-up. Statistically significant psychological improvement (reduction of obsessive-compulsive traits, depression and anxiety) was demonstrated after therapy and remained stable over six months follow-up. Measures of self actualization and sense of well-being also increased significantly. Mean global improvement was significant at the $p<0.01$ level at follow-up (Yensen, 1976).

There were two studies begun at the research center that have not been mentioned in the literature to date because they were never completed. One was a large (150 subjects) and ambitious study designed by Yensen, Richards, Rhead, Williams and Di Leo. This study

involved outpatient psychotherapy with a neurotic population. DPT was the psychedelic drug used and both sterile water and Ritalin (Methylphenidate) served as inactive and active placebos. There is evidence in the literature that Ritalin has use as an adjunct to psychotherapy in addition to its effects as a stimulant. The study involved six groups and both psycholytic style therapy and extended psychedelic style therapy; two of these groups were double-blind controls for DPT in a psycholytic format. Low dose DPT, Ritalin or sterile water were administered in double blind fashion up to 25 times. High dose DPT and marathon music sessions completed the active treatment groups and a waiting list control was the sixth group. This quite involved study attempted to control for expectations and various types of drug action. A grant was submitted to NIMH and a site visit was made but the project received approval with no funding. Nonetheless the staff treated a few patients with this protocol.

The second incomplete and unpublished project involved the referral of outpatients already engaged in psychotherapy with professionals in the surrounding communities. These treating therapists could refer patients they felt were at an impasse in their therapy for consultation with the research center clinical staff and evaluation for possible psychedelic sessions with LSD, DPT or MDA. The referring therapist was free to assist in the psychedelic session. Less than ten patients received sessions in this fashion. (Berendes, 1979)

The Demise of the Research Center

In 1975 there was a great controversy over the dismissal of three scientists from the Basic Sciences division of the research center. The controversy flourished amidst news reports of a suicide due to the CIA's irresponsible practices with LSD. The estranged scientists accused the research center director of mismanaging public money, and alleged that the research center engaged in no real treatment and thus rendered no service to the people of the state of Maryland.

This political contention led to the eventual transfer of the facility from the Department of Health and Mental Hygiene to the University of Maryland. News stories broke about research with LSD at Edgewood Arsenal (an Army weapons research facility) in Maryland where recruits were given LSD without informed consent. This research was linked to the University of Maryland and created unbearable political pressure to discontinue all psychedelic research at the University of Maryland. As a consequence all psychedelic research at the center was stopped, most of the staff was dismissed or resigned and a new director was appointed. By 1978 there were only five of the original staff employed at the research center and the basic research direction was shifted to schizophrenia research.

Studies after 1976: Psychedelic Research After MPRC

By the end of 1976 over 700 patients had been treated by this team of investigators. The results of these studies include a preponderance of positive results and some perhaps just as interesting equivocal outcomes.

Yet the tide was shifting already. A news report came out about a government agent who the CIA slipped LSD a few days before he jumped out a window in the 1950's. This report came to the attention of the Maryland legislature which provided the funding for the Research Center. They decided to close down this controversial research and turn the big white building toward research with more conservative psychiatric treatments.

In 1976 the Research Center was completely restructured and virtually the entire professional staff was replaced. The director was relieved of his responsibilities and the psychedelic work was completely eliminated. The success of this research empire went bust in 1976. Why, what happened and what can we learn that is of value to us in our efforts to continue the exploration, to meet the scientific challenge and therapeutic promise of psychedelic drugs?

In 1979 a small group of investigators from the previously disbanded Research Center team began meeting again to plan a way to continue the interrupted research projects. This team met with some success in dealing with the FDA and secured a new Investigational New Drug Permit for LSD as well as reactivating the previous IND for work with terminal cancer patients. Approximately 10 cancer patients were treated through a collaboration with the University of Maryland and North Charles General Hospital. These results have not yet been published (Di Leo, 1993).

Non-Drug Assisted Therapies Evolved from Psychedelic Research

As with the outer space exploration program sponsored through NASA[7], there have been some new techniques developed out of psychedelic research that do not depend on drug adjuvants and have diffused into the culture of psychotherapy.

Holotropic Breathwork (Grof Breathing)

In the middle 1980's Stanislav & Christina Grof developed an approach to therapy that involves the use of intense breathing and specially selected stereophonic music. This approach is taught internationally and has spread to many countries. The breathwork session produces phenomena which Grof has described as equivalent to the profound experiential sequences he described for patients undergoing psycholytic and psychedelic therapy (Grof, 1985)

[7]National Aeronautics & Space Administration.

Guided Imagery and Music (GIM)

This technique was developed at the Research Center by Helen Bonny, the staff music therapist. It emerged from a blending of Guided Affective Imagery techniques developed by Hanscarl Leuner in Germany and music therapy approaches she developed for psychedelic work. In this method the patient reclines and enters a deeply relaxed trance while listening to carefully prepared classical music sequences designed to elicit and support death rebirth mystical sequences of experience (Bonny & Savary 1973).

Perceptual Affective Therapy (PAT)

Perceptual Affective Therapy developed as a technique to emulate the effects of psychedelic drugs through the selection and management of audio-visual stimuli to enhance and amplify the inner feeling state of the patient. During a Perceptual Affective Therapy session the patient may alternate between visual deprivation and sensory overload through the alternation of eye-shades and intense visual stimuli from slide & motion picture projectors. The patient is induced to enter an altered state by encouraging them to let the stimuli become their feelings and visa-versa and to breathe in the stimuli (Yensen, 1981). More recently deep tissue bodywork and breathwork have been integrated with the Perceptual Affective Approach.

Shamanic Paradigm in a Contemporary Frame

In an attempt to integrate experience from Western psychedelic research, contact with contemporary shamanic healers in Mexico and group process, Richard Yensen and Donna Dryer developed a ritual context for psychospiritual healing. This involves the use of breathwork and sensory overload within an anamnestic group journey. While held within the compelling energy of group process in a shared vessel for healing participants undergo an all night healing journey that blends all these elements. Great emphasis is placed on affective, biographical, intellectual and spiritual integration of this experience. The all night ceremony or *velada*[8] is the experiential centerpiece of a 5 to 6 day residential retreat.

Current Status of Psychedelic Research in the United States

Within the United States we are aware of at least four psychedelic projects. Rick Strassman at the University of New Mexico is pursuing systematic human psychopharmacology of DMT (N,N-Dimethyltryptamine) and Psilocybin (Strassman, 1993). Charles Grob and his associates at Harbor Hospital (UCLA) are involved in safety studies of MDMA (3,4-Methylenedioxymethamphetamine) with mental health professionals and will soon proceed with clinical efficacy studies of terminal cancer

[8]The *velada* is a Mazatec ritual in which psychedelic mushrooms are used to enter a deep altered state of consciousness for healing. In this modern shamanic approach multimedia portrayals of death re-birth sequences, breathwork and deep tissue bodywork are used to produce the altered state rather than psychedelics.

patients (Grob, 1993). Juan Sanchez-Ramos and Deborah Mash are proceeding with dose-response studies and safety trials of Ibogaine at the University of Miami (Doblin, 1994). Kurland, Yensen and Dryer have FDA approval for a study involving 60 outpatients with a substance abuse disorder who will receive various doses of LSD in a psychodelytic approach (Kurland et al., 1991).

Future Directions for Research and Training

Fifty years of LSD research has failed to demonstrate that double blind placebo controlled studies are appropriate to study the effects on humans. The adequacy of this method, for instance, whether a double-blind is actually possible, needs to be tested in a study specifically focused on validity of assessment. We are in the process of designing such a study. It will attempt to systematically map, cross-check and control extraneous variables and subjective distortions. The publication of such a study in a peer reviewed journal will open the scientific dialogue necessary if the findings question this accepted method of study. If they do not then we can go forward with a solidly confirmed scientific foundation. If double-blind is not feasible we must develop other rigorous approaches.

Clearly there are many wonderful new tools to assess the physiology and brain metabolic actions of psychedelics. Psychotherapy research with these compounds strongly indicates that physiological response often mirrors subjective experience. For this reason a report of the subjective experience is an important element in data gathering that must not be overlooked in any physiological study. Rick Strassman's studies are exemplary in this regard. We encourage researchers who use sensitive new techniques such as the PET scanner to correlate the physiology with the psychology of the psychedelic experience. This subjective scope should in not compromise the rigor of such work. Instead it should reflect the intimate connection between mind and body established by psychoneuroimmunology.

In reviewing this work it seems clear that the experimental treatment in psychedelic therapy involves a mystical experience. The presence or absence of this experience is the true experimental condition, not the presence, absence or dose of a psychedelic. This insight suggests another method for analyzing even studies that have already been done. This also substantiates the need for human experimentation as laboratory animals cannot communicate subjective experience with adequate resolution.

The ability to predict which patients are likely to have a peak experience would allow effective selection of the best candidates for treatment. Mechanisms for adequate reporting of non-pharmacological factors in all human research must be discerned. These factors are so uniquely important to the study of psychedelic drugs in human subjects that if they are not systematically reported and studied they merely confound results. Thus set & setting, attitude of all present in a session, institutional politics and psychodynamic interplay are essential reagents in the psychedelic reaction. They must be assessed and reported for replication to be possible.

The assessment of subjective experience is a frontier that directly intersects with psychedelic research. Our tools in this area are by and large primitive, but measurement is imperative. At the research center the Psychedelic Experience Questionnaire was routinely used to quantify the depth of peak experiences. McClelland's work in psychoneuroimmunology indicates that peak experiences have a profound effect on the immune system. Perhaps new tools will involve direct measurement of immune function as an indicator of peak experience intensity (McClelland, 1988).

Regulatory & Training Issues

Psychedelics pose a challenge to the existing regulatory mechanisms because they are unique in their ability to amplify the effects of extra-pharmacological factors. The regulatory apparatus was established to deal with substances whose effects are consistent and independent of extrapharmacological factors. It would be irresponsible to release psychedelic compounds as prescription drugs. Any physician, psychiatrist, psychologist, or scientist wishing to use psychedelic compounds in human studies must be carefully and extensively trained in their use. That training must reflect our knowledge of their long history of use in other cultures. Models for training come from other subjective disciplines such as psychoanalysis. Psychoanalysis requires extensive first hand experience in a training analysis. A prospective psychedelic researcher must work with these substances under the careful supervision of more experienced researchers. Most assuredly it is inappropriate for these drugs to be administered by those who refuse to thoroughly explore their own psyche with them as a necessary precondition for responsibly and sensitively dealing with another human being's response to the same compounds.

Interdisciplinary approaches are imperative The disciplines of psychology, anthropology, philosophy and theology must not be excluded merely because we conceive of these compounds as drugs and of drugs as the exclusive province of physicians.

The Consciousness Laboratory

The use of computers, virtual reality, and physiological measurement could be integrated into a nearly ideal laboratory for psychedelic research. Such an environment would allow free access to a tremendous variety of audio-visual stimuli to enhance and manage response to the compounds while still permitting unobtrusive measurement of physiological states and their subsequent correlation with the experiences facilitated by psychedelics in this setting. The advantage of this setting is that it would thoroughly document the stimuli used, the drug, dosage and psychological response all in real-time with possibilities for feedback into the on-going drug session (Yensen, 1982).

Summary

The role of usually ignored and unreported extra-pharmacological factors in psychedelic research has been explored with the Spring Grove and MPRC studies as examples. The relationships among the entire research team have quite significant impact on the milieu for psychedelic research. These factors of set & setting play a major role by increasing or

decreasing the probability of a peak experience. We found the peak experience to be the actual treatment condition not the presence or absence of a psychedelic. The psychedelic is another contributing factor, one that enhances the likelihood of a peak experience, but does not guarantee it.

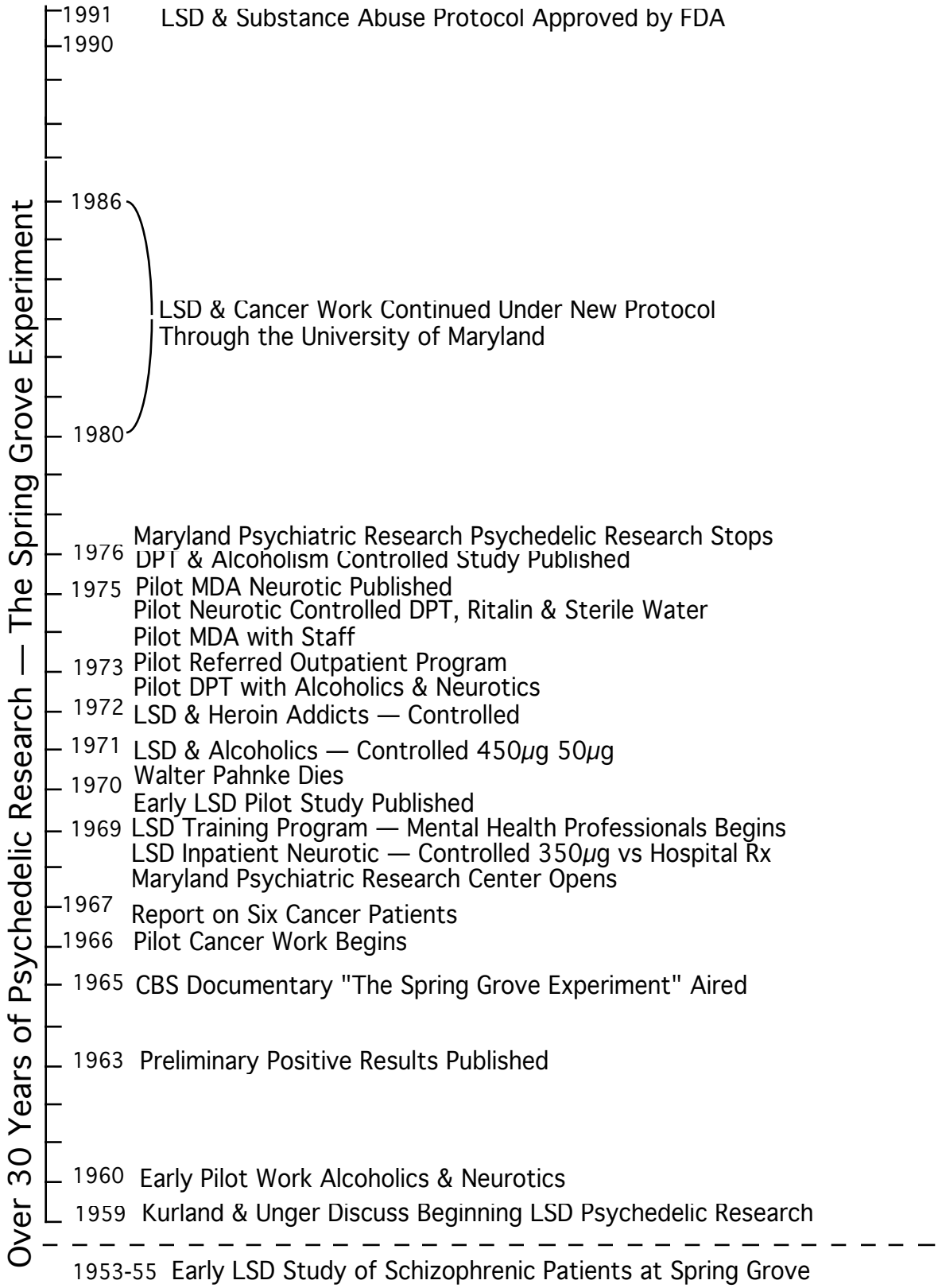
Consistently errors were made in underestimating the impact of non-drug factors on psychedelic sessions and their outcome. Training sessions that provide study designers with enough first hand experiences to understand the phenomenological shifts that occur with psychedelics would be helpful.

As we explore the evolution of more effective therapy with psychedelics there is need for more systematic and complete reporting of all non-drug variables. If these important reagents in the psychedelic reaction are not reported the work cannot be replicated.

The appropriateness of double-blind methodology and indeed the possibility of a true double blind has been called into question. This is a testable research hypothesis that we propose to investigate.

In the process of conducting the research at Spring Grove and the Maryland Psychiatric Research Center over 750 patients received psychedelic sessions. The majority benefited in some way, a minority were unchanged. We are not aware of any long-term complications among the subjects. This establishes a solid basis for future investigations in terms of risk to benefit ratio.

We need a rigorous and systematic approach to investigating the therapeutic potential of psychedelic compounds as enhancers of the healing process. We must use the insights available from past efforts in this culture and others to develop this investigational capacity.


Over 30 Years of Psychedelic Research — The Spring Grove Experiment
1991 LSD & Substance Abuse Protocol Approved by FDA
1990
1986
LSD & Cancer Work Continued Under New Protocol
Through the University of Maryland
1980
Maryland Psychiatric Research Psychedelic Research Stops
1976 DPT & Alcoholism Controlled Study Published
1975 Pilot MDA Neurotic Published
Pilot Neurotic Controlled DPT, Ritalin & Sterile Water
Pilot MDA with Staff
1973 Pilot Referred Outpatient Program
Pilot DPT with Alcoholics & Neurotics
1972 LSD & Heroin Addicts — Controlled
1971 LSD & Alcoholics — Controlled 450μg 50μg
1970 Walter Pahnke Dies
Early LSD Pilot Study Published
1969 LSD Training Program — Mental Health Professionals Begins
LSD Inpatient Neurotic — Controlled 350μg vs Hospital Rx
Maryland Psychiatric Research Center Opens
1967 Report on Six Cancer Patients
1966 Pilot Cancer Work Begins
1965 CBS Documentary "The Spring Grove Experiment" Aired
1963 Preliminary Positive Results Published
1960 Early Pilot Work Alcoholics & Neurotics
1959 Kurland & Unger Discuss Beginning LSD Psychedelic Research
1953-55 Early LSD Study of Schizophrenic Patients at Spring Grove

Summary Listing of Major Studies

Cholden, Kurland & Savage, 1955
20 inpatients with chronic schizophrenia
LSD 100-500µg Intramuscular Injection
up to 14 administrations given daily
Conclusions
1) LSD can be given I.M. over protracted period without untoward effects
2) Tolerance is seen on the 2nd day and after 4-6 days is gone
3) Gross behavior is useful indicator of tolerance
4) There is no cross tolerance between LSD and mescaline
5) Clinical responses of schizophrenics were categorized
6) The reactions may in part be determined by the milieu

Kurland, Unger, Shaffer, Savage, 1967
69 chronic alcoholic inpatients
LSD 200-900 µg orally
1 administration
18 month follow-up study
Conclusions
1) Safe treatment modality as shown by pre- and post- EEG's on 20 patients
2) Specialized training is necessary for safe an effective treatment
3) One-third maintained abstinence up to 6 months
4) Reversal of pattern of pathological functioning as seen on MMPI's

Pahnke, Kurland, Goodman, Richards, 1969
22 metastatic cancer inpatients
LSD 200-500µg
Conclusions
Pilot study and case histories: 6 showed dramatic improvement, 8 showed good improvement, 8 remained unchanged of 22
Improvement: decreased depression, anxiety, fear of death; increased relaxation, greater ease in medical management, closer interpersonal family relationships with more openness and honesty on a 13 point scale

Tjio, Pahnke, Kurland, 1969
32 psychiatric inpatients, 5 drug abusers & 8 normals
LSD 21 high dose=250-400 µg; 11 low dose=50 µg
Conclusions
Mean pre-LSD rate of chromosomal aberrations in the 32 patients (4.28%) and the 5 LSD users (2.81%) are comparable to each other and to the values obtained from 2 normal control subjects sampled for 8 to 10 consecutive days (2.65%). Pre- to post-LSD differences for both the 32 patients (+1.63%) and the 5 LSD users (+0.76%) are not statistically significant. Mean chromosomal aberration rates for the 32 patients and 5 LSD users (including both pre-and post-means), 8 experimental normal LSD subjects (post-LSD), and 2 normal controls (no LSD) only vary from 2.65% to 5.91%.

Pahnke, Kurland, Unger, Savage, Wolf, Goodman, 1970
6 metastatic cancer patients
LSD 200µg to 300 µg orally or intramuscular
Conclusions
case histories; showed decrease in need for pain medication and improvement in global change for all 6 patients

Pahnke, Kurland, Unger, Savage, Grof, 1970 JAMA
Experimental Use of Psychedelic Psychotherapy
overview

Kurland, Savage, Pahnke, Grof & Olsson 1971
135 chronic alcoholics
LSD 50µg or 450µg orally
one session
6, 12, and 18 mo follow-up
Conclusions
6 month follow-up 53% rehabilitated high dose group vs. 33% in low dose group p=.05. This initial gain was attenuated at end of 18 months although overall levels of improvement was considerably better for both groups than usual improvement for other alcoholics in the same setting without LSD-assisted psychotherapy.

Richards, Grof, Goodman, Kurland, 1972
31 cancer patients
LSD 200-500 µg orally or intramuscular
one session
Conclusions
25% had peak experiences and less fear of death afterwards
29% dramatically improved, 41.9% moderately improved, 29% unchanged

McCabe, Savage, Kurland, Unger, 1972
96 inpatient neurotics
LSD 31 high dose (350µg), 32 low dose (50µg), 33 group therapy alone
Conclusions
High dose psychedelic therapy was superior to conventional therapy on specific "symptom" areas as defined by the MMPI, e.g.. depression, obsessive-compulsive syndrome, social introversion, manifest anxiety, ego strength, neurotic overcontrol. On the POI "Spontaneity" and "Self-regard" consistently show greater increments after both forms of psychedelic therapy and "self-actualized values" are more frequently increased after high-dose LSD administration.

Savage, McCabe ,Kurland, Hanlon, 1973
same 96 inpatient neurotics as above
more complete data analysis
Conclusions

High dose>Conventional treatment
p<.05 for MMPI items Depression, Social Introversion, Ego Strength, Benaric Items
p<.01 for Validity, Correction, Factor, Social Desirability.
for POI items p<.05 for Self-actualizing value, and Self-Acceptance and p<.01 for Spontaneity and Self-regard for PEP items p<.05 Distress, Distrust, Social Desirability, Future p<.01 for Insight
Low Dose better than Conventional Treatment p<.01 only for PEP Distrust and Distress and POI Self-Regard and p<.05 for MMPI scales Correction, Factor, Social Desirability, PEP scales Future and Insight and POI Spontaneity.

Soskin, Grof, Richards, 1973
18 inpatient alcoholics
15-30 mg of DPT intramuscular
Conclusions
Therapist Rating Scale DPT > placebo p<.01 for items: Recall of Memories and Experiences, Emotional Expressiveness, depth of Self-Exploration and p<.05 for Psychodynamic Resolution.

Grof, Soskin, Richards, and Kurland, 1973
51 inpatient alcoholics
15-150 mg DPT intramuscular
one to six two-hour sessions
72 DPT and 64 placebo therapy interviews on a double-blind basis
Conclusions
Percentage rehabilitated at 6 month follow-up: global adjustment=46.8% and abstinence=53.2% at p<0.001 and significant improvement (compared to pre-treatment) on occupational adjustment (p<.01), residential adjustment (p<.02), interpersonal adjustment (p<.001).

Savage and McCabe, 1973
37 narcotic addicts in a halfway house
200-500 µg LSD orally
one session
Conclusions
25% remained abstinent vs. 5% abstinent at 12 month follow up with p<.05

Turek, Soskin, Kurland, 1974
10 mental health professionals
MDA 40-150mg orally
one session Pilot Study
Conclusions
Analyzed blood pressure, digit symbol subtest, digit span subtest, handwriting, Psychedelic Experience Questionnaire, Modified Linton-Langs Questionnaire and the Subjective Drug Effects Questionnaire. MDA invites inner exploration vs. LSD which demands it. Might be helpful in treatment of obsessive and depressive traits.

Yensen, Di Leo, Rhead, Richards, Soskin, Turek, Kurland, 1976
10 neurotic outpatients
MDA 75-200 mg orally
2-4 sessions
Conclusions
Significant improvements on POI, MMPI, BPRS, WPRS, and Social History Questionnaire at pre- to post and 6 months post therapy

Rhead, Soskin, Turek, Richards, Yensen, Kurland, Ota, 1977
33 inpatient alcoholics received DPT, compared to 46 Conventional Treatment (CT), 24 Routine Hospital Treatment (RHT)
DPT 15-150mg intramuscular injection
1-6 sessions
Conclusions
Not much difference due to drop-out rates and other complexities discussed in this paper.

Richards,, Rhead, Di Leo, Yensen, Kurland, 1977
34 cancer patients
75-127.5 mg DPT intramuscular injection
one session
Conclusions
Predictors of peak experiences analyzed (peakers=14, non-peakers=17)

Richards, Rhead, Grof, Goodman, Di Leo, Rush, 1979
30 cancer patients
75-127.5 mg DPT intramuscular injection
one session
Conclusions
ECRS scales of Depression and Anxiety were $p<.05$ pre- vs. post- Mini-Mult showed decreased distress, e.g. D $p<.006$, Hy $p<.006$, Pt $p<.004$, Pa $p<.01$, Sc $p<.001$, Ma $p<.02$; POI: Time competency $p<.03$, Inner Directedness $p<.01$, Self-Regard $p<.02$, Self-Acceptance $p<.005$, Capacity for Intimate contact $p<.02$.

Berendes, 1979
12 neurotic outpatients
20-30 mg psilocybin or 200-300µg LSD or 70-120 mg DPT
one session in the context of ongoing psychoanalytic psychotherapy
Conclusions
Analytic description of shifts in therapy and transference leading up to, during, and after the session.

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