

Lysergic Acid Diethylamide (LSD 25): XXXXI The Use of LSD as an Adjunct to Psychotherapy: Fact and Fiction

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In spite of the present furor against the use of LSD as an adjuvant to psychotherapy, I feel now, as I did nearly two decades ago, that LSD administered in low doses (less than 150 micrograms) not only is harmless when employed in a suitable medical therapeutic procedure, but also is of value in the psychotherapeutic process.¹

Although present day research projects in pharmacology and psychiatry do not encompass the study of the effects of LSD, to the extent that was found previously, the importance of the discovery of its psychotomimetic effect by Hofmann still is, in the view of the writer, of the greatest importance, both scientifically and psychotherapeutically. In support of this is the fact that more than 3000 papers on LSD, its derivatives and congeners have been published in the past three decades. Why has this group of compounds become quantitatively much less important in the present often fruitless search for understanding of the nature of the psychotic process? Before discussing the origins of the present low point in emphasis on LSD research, it is important to understand the nature of the drug in relation to the individual and to society in general.

Dahlberg and his coworkers² have published a report entitled "LSD Research: The Impact of Lay Publicity." They emphasize that there has been continuous concern for the political, social, and psychoanalytical implications. Drugs like LSD, of course, have been receiving sensational and unfavorable attention not only from the press, but also from certain physicians, whose anxieties take precedence over their understanding that research should continue with LSD. The illegal street use of LSD has increased as research has decreased. In this writer's own experience, it took approximately three years to obtain legal permission to continue early studies of LSD on goldfish.³

The origins of the difficulties may in part be traced as follows. From 1951 until 1962 world-wide research on LSD resulted in publication of more than 1000 papers. However, difficulties at Harvard University in 1962 resulted in unfavorable publicity in newspapers and magazines. "Authoritative" articles appeared, too frequently authored by those who had had no direct experience with the drug or who dealt primarily with the results of unknown drug mixtures purchased on the street. Press coverage usually did not mention the professionally written articles unless the data stressed the dangers connected with LSD use. Most of the coverage in the press pertained to the results of the uses of LSD obtained through illicit channels. Further, it was rarely validated by the press

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Welles' Martians when they invaded the earth rather than given us by the brilliant discovery of the Swiss chemist, Hoffmann.

If the results of Bender and her colleagues had shown that the children were damaged by LSD, undoubtedly magazines from *Playboy* to *House and Garden* would have reported it. Apparently, the press generally ignored papers indicating that LSD research supported its use for one medical reason or another. For example, the recent paper by McGlothlin and Arnold⁸, "LSD Revisited, A Ten-Year Follow-up of Medical LSD Use" in *Archives of General Psychiatry* (1971), was essentially neglected by the press because of his favorable report summarized here:

"A follow-up survey of 247 persons who received d-lysergic acid diethylamide (LSD) in either an experimental (nonmedical) or psychotherapeutic setting was made to determine the lasting effects, if any, related to use of the drug. Information was collected from each by a structured interview and self-administered questionnaire. Some subsequent nonmedical use of LSD was reported by 23%, who attributed more personality changes to the drug's use. There is, however, little evidence that measurable, lasting personality, belief, value, attitude, or behavior changes were produced in the sample as a whole. Compulsive patterns of LSD use rarely developed; the nature of the drug effect apparently is such that it becomes less attractive with continued use and, in the long-term, is almost always self-limiting."

The scare and alarmist tactics in the present vain battle against drug abuse have been employed extensively to curb the use of LSD. Thus, Wagner, in the June 1969 issue of *Nature* states, according to *Science News*, Vol. 100, 1969, p. 74:

"In June of 1969 *Nature* published a paper by Dr. Thomas E. Wagner, then of the Sloan-Kettering Institute for Cancer Research. 'The observation of broken chromosomes in test animals and humans treated with the hallucinogen (LSD) has been well documented,' the paper began. Dr. Wagner then went on to announce that using a spectropolarimeter, he had discovered evidence indicating 'that LSD interacts directly with a purified calf thymus DNA, probably by intercalation, causing conformational changes in the DNA.' This meant that LSD comes between the DNA bases and interacts strongly at the gene level, unwinding the helix and causing mutations and changes in DNA activity. In other words, the LSD-DNA interaction is responsible for physical changes in the chromosomes, defective genes and possible mutations."

However, *Science News* of July 16 states:

"The July 16 *Nature* contains two papers that refute those findings. Drs. E. M. Smit and P. Borst of the University of Amsterdam state that, using a more specific and sensitive method for studying intercalation, no interaction between DNA and LSD was detectable. They therefore conclude that 'chromosome damage in the presence of LSD is not a consequence of the intercalation of LSD into DNA.'"

Again, I am indebted to *Science News* (July 16) which reports that Wagner's data are open to question.

"Drs. A. H. Brade, Elizabeth Brady and F. C. Boucek of the University of Miami School of Medicine report similar findings based on completely different methods. And their experiments 'have failed to show that LSD has any effect on DNA conformation.' Dr. Brady says there 'may be some kind of interaction but if there is it is very minimal and does not show up as any change in optical activity.' And 'if LSD is responsible for any kind of mutant action it is not by direct interaction with the DNA molecule.' The University of Miami researchers were unable to find any optical activity changes when DNA and LSD were mixed and they could not repeat or confirm Dr. Wagner's spectra. Dr. Brady says that their experiments, the evidence of Drs. Smit and Borst and mounting physical and chemical evidence are beginning to refute evidence that we might have been inclined to believe a year ago."

Although the street use of LSD decreased when the threat of genetic injury was first reported and accepted, accurate interpretation of the available data was not widespread. If an educative program designed to decrease the use of a drug is not accurate, harmful drug experiences have not been and will not be prevented. The drug prevention programs organized by Washington have certainly prevented this writer from continuing a program based on fifteen years' experience with LSD, its derivatives and congeners. But as mentioned the illicit use of LSD is probably increasing. The dissemination of blatant misinformation, combined with the shackling of medical research, has led to failure of the efforts to control drug abuse, as far as LSD is concerned.

What is LSD? How is it related to drugs in common use? LSD is a derivative of d-lysergic acid. Lysergic acid itself is the basis of many ergot compounds used daily in medicine. But LSD has a unique property which differentiates it from all other drugs. Even in extremely small doses, LSD produces a disturbance in mentation, in perception of sound, light and color, in emotional reaction, in ideation. This disturbance is always, in reasonably low doses, reversible if the dose, set (attitude of the observer), setting and personality of the subject or patient are suitable. It may be mentioned that these criteria apply to all mind-influencing drugs, e.g., prednisone, a euphoria-producing corticosteroid commonly used in asthma, arthritis and other conditions. After a certain number of hours, the effect of LSD itself wears off.

Contrary to assertions in the popular press, when LSD is administered in suitable dosage as part of a therapeutic medical program, "irreversible psychotic changes" and "brain damage" do not occur. Certain irresponsible statements that it does produce such adverse effects have not been supported by valid scientific evidence. Perhaps the irresponsible reports reflect the anxieties of journalists and scientists regarding psychological disturbances rather than a valid assessment of all the data available.

In many people the effect of LSD in high dosages resembles a psychotic state. The reason for this is that LSD creates an emotional storm during which a person frequently is able to recall forgotten or repressed events and early experience. Outwardly, it may seem that the person is psychotic. Actually he may undergo a complete reevaluation of his self-image.

LSD, if taken without proper supervision and under undesirable circum-

stances, can produce a reaction in unstable people which presents an alarming appearance and can lead to dangerous behavior. Like any other drug, LSD belongs in the hands of responsible medical authorities. In responsible hands, LSD is, I believe, a valuable tool in hastening successful results in psychotherapy, especially psychoanalytic or psychoanalytically oriented psychotherapy.

How small is a small therapeutic dose of LSD? The dose of LSD is administered in *micrograms* (mcg). There are 300,000 mcg of aspirin in the ordinary tablet. We now may ask how many mcg of LSD are needed for the drug to make itself felt? The first, or threshold dose, may be about 25 mcg. Under desirable conditions a dose of about 100 mcg produces a dramatic reaction, often *resembling* a psychotic state. I use the term "desirable" because, if the setting in which LSD is given to the patient seems threatening, the reaction may be distressing to the patient and frightening to the people with him.

If 100 mcg of LSD is administered to a group of so-called normal subjects, each member of the group will react differently, according to his personality structure and to the setting or milieu in which the drug is given. The attitude of the physician who administers the drug exerts a significant influence. An anxious physician inevitably produces an anxious subject. The disagreements about and opposition to LSD therapy voiced by inexperienced or anxious investigators can easily be understood when seen in the context of these complicated variables.

In the results of experiments published more than fifteen years ago, my coworkers and I found that symptoms frequently reported by fourteen non-psychotic subjects who received LSD included memory difficulties, mood changes and difficulty in concentration. Feelings of unsteadiness, inner trembling and dizziness were reported, as well as peculiar sensations in the hands, the feet and on the skin; dream-like feelings were common, as were heaviness in the hands and feet, drowsiness, and difficulty in focusing vision. Anxiety occurred often. Depersonalization was observed. There were occasional paranoid reactions. Some reported a peculiar sensation of the lips being drawn back, as in an involuntary smile. With dosages of 100 mcg, hallucinations were rarely reported. In psychoanalytic therapy, the dosage rarely exceeded 100 mcg. Higher doses were given if the patient was hospitalized overnight with the treatment, psychoanalytically oriented, taking place in a hospital.

In spite of the complicated symptoms and signs produced by LSD, even when given in a suitable setting, the drug's action leads to an extraordinary and somewhat paradoxical integrative process in the patient's psyche, because of the nature of his relationship with the therapist. The unpleasant and peculiar storm taking place in the nervous system is accompanied by a remarkable state of ego enhancement occurring simultaneously with ego depression. During this period of the LSD reaction, the therapist may manipulate this dual change in ego. The ego enhancement produced may be employed by the therapist for the benefit of the patient. In other words, the patient reacts to the LSD and to the therapist, not to the LSD alone. Some of the characteristics of the therapeutic process may include intense awareness of the treatment period with good memory of

the experience; increased fantasy; limited regressive ideation; facilitated interpretation of symbolic processes; acute awareness of the need to maintain conscious control of self; mounting anxiety; difficulties in the struggle to control feelings; fluctuating depression and euphoria; fluctuating disturbances in perception; rare hallucinatory episodes, almost always accompanied by simultaneous awareness of reality and by mild sexual stimulation. The therapist himself must be relatively free of anxiety if he is to be successful in treating the patient who is undergoing this multifaceted psychic upheaval.

What compounds related to LSD are commonly used in medicine? These are familiar drugs: Ergonovine maleate, Methyl Ergonovine Tartrate, Ergotamine Tartrate, and Methysergide. Crude extracts of ergot were used by midwives as far back as the seventeenth century for its effect on the uterus. Other plant extracts have been employed for more than 3,000 years for their effects on the mind, usually in connection with ritualistic, religious and sociological experiences. Perhaps the broad use by primitive peoples of drugs similar to LSD in order to satisfy some need for cultural stability and adaptive processing may find a parallel in the modern use of LSD in psychoanalytically oriented psychotherapy.

The stresses of modern living and the lengthy procedure of psychoanalysis have made us all aware of the need for less time-consuming techniques to give the patient the confidence and ability to face his own problems. The use of LSD to enable the patient to shorten this process has been termed *psycholytic therapy* in Europe. Low doses of LSD are generally used in psycholytic therapy. As mentioned previously, I used LSD clinically either in psychoanalysis or in psychoanalytically oriented brief psychotherapy. It was clearly distinguished from psychedelic therapy by the investigators present at the South Oaks conference.³ Psychoanalytic therapy has as its goal greater maturity, with increasing social and physiological adaptive mechanisms. Dr. Dahlberg and his colleagues have recognized that I used LSD as a part of psychoanalytic therapy. Their statement explicitly presents my point of view.⁹

"An approach which was first employed by Abramson, using LSD as an adjunct to psychoanalytic psychotherapy, seems to lend itself more readily to a study of the effects of LSD on the behavioral processes assumed to be important in psychotherapy. This approach differs in two significant ways from the other LSD therapies. In the first place, there is no modification of the environment. That is, the usual analytic office setting is maintained. In the second place, primary emphasis is placed upon the interaction between therapist and patient, especially on the communicative process. In his initial exploratory trials with LSD, Dahlberg concurred with Abramson and others in feeling that LSD aids an important part of the psychoanalytic process; namely, the recovering of childhood memories with their appropriate emotional concomitants, the enriching of fantasies and associations, the increasing of emotional expressiveness, and the loosening of defense systems. The patient's basic way of relating, which has a major effect upon the transference process, is intensified. It is interesting to note that several analysts who have listened to Dahlberg's recorded LSD sessions have commented that in most essential respects, they sounded similar to ordinary very good analytic sessions. The advantage of LSD over other drugs

used in this way lies in the fact that it does not cloud consciousness or interfere with memory of the drug-induced events. These observations of the effects of LSD upon the communicative process have been drawn partially from laboratory investigations of the effects of LSD upon psychological functioning and to a large extent from clinical reports."

Psychedelic therapy, a method *not* used by me in this study, commonly makes use of doses of at least 300 mcg of LSD, and the doses may go as high as 2000 mcg. The principal focus in psychedelic therapy is to attain the extraordinary experience produced by the drug itself, which is essentially independent of psychoanalytic therapy. This experience is variously described as "mystical," "ecstatic" or "apocalyptic." Regardless of the description, the LSD experience leads to a symptomatic type of cure in terms of an immediate change in behavior, according to some studies. At least 25% of alcoholics who have been treated by psychedelic LSD therapy have remained abstinent for six months following the treatment.

More recently, psychedelic drug therapy appears to be valuable in the treatment of heroin addiction. LSD (lysergic acid diethyl amide) may be a better agent than methadone to treat heroin addiction. This opinion was expressed in a paper presented at the American Psychiatric Association's annual meeting in Dallas.¹⁰ Savage, McCabe, and Kurland of the Maryland Psychiatric Research Center in Baltimore found in their study almost five times as much success with this form of treatment as with routine clinic treatment. Seventy-four male parolees comprised the study sample and were randomly assigned to psychedelic drug therapy or routine clinic treatment.

Treatment for a control group was weekly group therapy, parole supervision, and urine monitoring. The treatment for the experimental group consisted of intensive preparatory interviews and a day-long session with a high dose of LSD. Abreaction, catharsis and reliving of past memories all may occur, but the process is in many respects nonverbal. The patient may spend a good part of his day listening to music. During their entire treatment the patients lived at a halfway house. Daily monitoring of urine for narcotic drugs was routine. The patients' usual length of stay was five weeks to two months. They received 24 hours of intensive therapy culminating in one high-dose (300-450 mcg) LSD session. After the session each patient received an added week of therapy.

In terms of the simple variable of abstinence, after one year 24% of the treatment group maintained total abstinence from narcotic drugs, vs. 5% of the control group. This difference was significant at the .05 level of confidence. The number of those who achieved a period of one year's abstinence was 33 $\frac{1}{3}$ %.

The reader will find considerable controversy concerning the use of statistical methods when evaluating the results of psychotherapy with LSD and similar drugs. The double-blind experiment is one that is arranged with two groups of patients who are simultaneously treated. Neither patient nor doctor knows which group has received LSD, and which group has been given another drug or some harmless substance. It should seem fairly obvious that it would be unlikely for a patient who had been given a placebo, or sugar pill, to believe that he had

taken LSD. It is true that when studying the effect of the drug on the human organism, the investigator should endeavor to be uninfluenced by his own expectations. The therapeutic nihilist rarely acknowledges the value of a drug. The enthusiastic therapist hopefully searches for a positive result. To minimize the anticipations of both nihilist and enthusiast, the double-blind type of experimental procedure in clinical trials has been widely adopted. The procedure and its results depend upon statistics. Personal bias is supposed to be eliminated. The method involves either a suitably large sample of subjects or special mathematical assumptions if the sample is small.

The effects of drugs which are of importance to research in psychopharmacology can hardly be studied by the double-blind technique alone. Certainly, whenever the psyche is involved, at least equal weight must be given to the intensive study of drug effects in a single patient exemplified by the method in this study. It is difficult to understand how the result of extensive study based on patient group averages, rather than on individuals, can have direct implications with respect to improvement in the psychotherapy of patients. Judgments regarding indications for treatment derived from the single case study as developed here may be more meaningful than those derived from a large, vague sample with inherent patient complexities of the sample. The psyche is always involved, whether we like it or not! It is important to emphasize that statistics developed from systematic observations of a single patient under treatment may be more useful than statistics concerning a somewhat scrambled patient population. Only by direct clinical observations or clinical judgment can we really learn about the patient.¹¹ This must be the primary focal point of many hypotheses, and it is such observations which may provide a proper basis for subsequent clinical research by statistical analysis.

Both clinical judgment and the double-blind method are important. However, the intensive study of the patient as illustrated in this and previous volumes by the writer must be continued by the practicing physician. No rigid governmental or academic agency will even take the place of the clinical judgment of the practicing physician.

APPENDIX

After this paper was completed, the Drug Abuse Council, a private nonprofit foundation serving on a national level as an independent source of research in the field of drug abuse, published its views regarding psychedelic drugs. Specifically, they state:

PSYCHEDELICS (HALLUCINOGENS)

While many factors influence the effect of psychedelic drugs—LSD, mescaline and psilocybin, for example—most users and observers believe that the perceptual distortions and mood changes so characteristic of these drugs preclude aggressive behavior, particularly the kind of sustained aggressiveness required for criminal activity.²¹

Nor, for several reasons, do these drugs lend themselves to chronic use:

- No physiological dependence develops;

- Daily use leads to an increase in tolerance for the drug that vitiates the effect;
- The so-called trip tends to lose its appeal as the user becomes more familiar with the experience.²²

There is every indication that, except for very occasional panic reactions, assaultive, antisocial behavior is not increased and may be reduced.

The Council has added a new quality to the clinical value of LSD therapy: possible reduction of antisocial behavior. Thus, the Council, supported by the Ford Foundation, the Commonwealth Fund, the Carnegie Corporation, the Henry J. Kaiser Family Foundation, and the Equitable Life Assurance Society (U.S.) lend strong credence to my view, expressed not only in this paper but also in earlier publications, that LSD is of value as an adjunct in the practice of psychotherapy.

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