

THE USE OF PSYCHEDELIC DRUGS IN PARAPSYCHOLOGICAL RESEARCH

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Historical Background

Throughout the history of parapsychological research, the use of various types of psychoactive drugs to facilitate psi phenomena has remained an intriguing possibility. William James, an early American psychical researcher, was interested in altered states of consciousness catalyzed by various means. He experimented on himself with both nitrous oxide and peyote, but did not produce any definitive parapsychological data. His research with these two psychedelic drugs was neither very extensive nor systematic. Nitrous oxide, it should be noted, did stimulate his interest in mystical and religious experience. He took a little peyote in the form of tea, but vomited soon after and did not experience an altered state of consciousness at all.

The most impressive early evidence that psychoactive drugs might be useful in parapsychology were the Brugmans experiments in Holland in the 1920s with a low dose of alcohol (30 grams), in an experimental telepathic subject. His success rate jumped from 21% without alcohol to 75% with alcohol in an experiment in which the subject's hand, moving over a board of squares was apparently influenced mentally by one of the experimenters looking through a window from a room above. His explanation was that alcohol in this dose overcame normal inhibitions and allowed the subject to be more relaxed and have greater openness to sensory impressions.¹ In my own observations of people who are gifted sensitives, I have found that some of them use a little alcohol to help enter a trance state or shift their level of consciousness to do waking clairvoyance.

Dr. Rhine has reported the effect of two drugs on psi phenomena from his research in the 1930s. Sodium amobarbital, a sedative hypnotic drug, in a dose of 300 milligrams caused a decrease in ESP scoring ability.² This result is not too surprising because the usual dosage of this drug to induce sleep is 100 milligrams. Although both alcohol and amobarbital are sedatives, the dosage of this barbiturate used by Rhine was higher, relatively speaking, than the dose of alcohol used by Brug-

mans. On the other hand, when Rhine gave 300 milligrams of caffeine, a mental stimulant, an increase in ESP scoring ability was noted.³ This increase from caffeine was most marked when a subject's ESP score had dropped to below his best performance because of fatigue and was less effective in enhancing scores when a subject was already scoring near his best performance.

Although alcohol, amobarbital, and caffeine are all psychoactive drugs, they cannot be considered truly *psychedelic* because their effects lack the unique psychological characteristics which I have described in detail elsewhere.⁴ Psychedelic drugs, whose main representatives are LSD, mescaline, psilocybin, and the short-acting tryptamines, provide for most subjects a rapid flow of inner mental visionary imagery, an enhancement of feelings, and emotional arousal. During the history of research with psychedelic drugs, there have been scattered anecdotal accounts of their occasional effectiveness in facilitating parapsychological phenomena. Puharich in *The Sacred Mushroom*⁵ described how a sensitive under the influence of the *amanita muscaria* mushroom was able to produce a very high score on the matching abacus test. Another of his subjects, a psychiatrist, apparently was able to transmit parts of her rather upsetting mushroom experience to two of her patients who were unaware of her activities at the time of the experiment. They both later reported to her how uncomfortable and upset they had been during the time she was under the influence of this drug.⁶ Although both of these cases were uncontrolled in a strictly scientific sense, Dr. Puharich was encouraged to pursue his investigations. Some of his theoretical observations are presented in his book, *Beyond Telepathy*.⁷

At the Parapsychology Foundation's Conference on Parapsychology and Psychedelics in New York City in 1958, Humphry Osmond reported an experiment in which he and Dr. Duncan Blewett witnessed a major thought transference while both were under the influence of LSD.⁸ However, since this rather dramatic and unexpected occurrence had not been the major focus of the experiment, adequate records were not made except for the personal testimony of an independent observer on whom this event had a profound emotional impact. Unfortunately, all three of these examples must remain anecdotal only.

With these previous hints and clues in mind, Cavanna and Servadio in the early 1960s did the best piece of scientific work in the area of psychedelics and parapsychology which has been done to date. Their carefully planned and executed ESP experiments with LSD and psilocybin provide a good example for other researchers to build upon. In a controlled setting they gave low doses of these drugs to three subjects who then tried to guess the contents of sealed envelopes which contained very unusual photographs with emotional content. All experi-

ments were run in the same experimental room with a standardized procedure. All of a subject's responses were tape recorded. The experiment was double-blind so that neither the experimenters nor the subjects knew whether water or drug was given on any trial. Each subject was very carefully screened with psychoanalytic interviews and psychological tests. Originally, four subjects were planned for this series, but one did not pass the screening. Each of the three subjects participated in a series of experiments in which LSD, psilocybin, or placebo was given. Some subjects had more than one experience with each drug at different dosage levels. Dosage was rather low and near threshold in most instances. For example, the dosages of LSD were 50 and 75 micrograms, and for psilocybin, 10 and 15 milligrams. None of the three subjects had ever taken a psychedelic drug before the experiment, and so in this sense were naive subjects. The instructions given in the experiment were very permissive. A subject was given ten packets of sealed photographs and told to try to guess the contents at any time during the experiment that he felt like it. The hope was that visual imagery produced by the drug might give some clue as to the nature of the photographs in the envelope.

The results of this experiment were not outstanding in regard to the yield of parapsychological hits. There were some differences between drug and control sessions in that all the partial hits were by subjects who were under the influence of a drug, but the total number of these partial hits was not great. Performance did not seem to correlate with any of the extensive personality data that had been collected on each subject. After completing this clairvoyance study, a pilot trial with telepathy was done. One of the investigators would look at a picture and try to send it to a subject under the influence of one of the drugs. The results here seemed to show more promise.

In the report of their study,⁹ they offered some penetrating methodological criticisms of their own work and constructive suggestions for future research. The nature of their targets made scoring more difficult than with a more rigid, but less interesting, system such as Rhine cards. They had attempted to use unusual photographs with a possible stimulative effect, but for the future they recommended targets with even more emotional impact. They also realized the important role of interpersonal relationship in the conditioning of ESP phenomena and in the use of psychedelic drugs. This includes, of course, the set and setting of the experiment and the emotional environment in which such experiments are run. In psychedelic drug research it is very helpful to have a supportive setting with subjects who feel rapport with the experimenter. One of the subjects in this experiment had some negative feelings about one of the experimenters, and this might have influ-

enced the results in an adverse direction. One conclusion of this study was that an investigation of the effect of psychedelic drugs upon telepathy might be more productive than on clairvoyance.

Two further comments need to be made about this pioneering research. The permissiveness of the experimental instructions had a disadvantage in that some of the subjects did not even attempt to guess all ten envelopes. These subjects were preoccupied with unpleasant drug effects, such as experiences of fear or the expression of a psychosomatic resistance such as vomiting. Psychedelic drug effects can also be so novel, dramatic, and interesting that a subject may have some reluctance to attend to such a mundane task as guessing the content of a sealed envelope. Other psychedelic drug experiments have shown that gentle, but persistent reminders may be necessary to encourage a subject to stick to the experimental task. In this regard, subjects experienced with the effects of psychedelic drugs would be better able to manage this altered state of consciousness than naive subjects taking such a drug for the first time. On the other hand, double-blind procedure would be much less useful with experienced subjects because of their familiarity with the novel effects. It is unfortunate that no one has done much to continue in the area opened up by this valuable study.

Current Parapsychological Experiments with Psychedelic Drugs

Our own research institution, the Maryland State Psychiatric Research Center, is one of the few places in the United States where research with psychedelic drugs is proceeding. Relevant to this conference, we are conducting some pilot studies in the area of parapsychology. My first attempt several years ago was with a professional sensitive who was participating in a psychedelic drug experiment. During the course of his session, he attempted to describe the actions of a close friend who lived about fifteen miles away. Prior to the experiment this friend had agreed to do something of his own choosing which would be unique and unusual at a pre-arranged time. At this time during the session, I urged the subject to try his best to concentrate on his friend and report his impressions. This procedure, of course, had been explained to the subject before the experiment. At the time, the subject was having a rather positive experience, and did his best to cooperate. He reported that in his visual imagery he could see his friend holding his hands above his head. Then he got the impression of a Chinese vase. The result was only a partial hit as judged from a written description mailed to me by the friend immediately after his part in the experiment. What he had actually done was to hold a vase of roses above his head and walk around his apartment for ten minutes at the pre-

scribed time. The vase was not Chinese, although the subject knew that his friend collected Chinese art. The performance of this particular subject was probably no better than what he could have done without the effects of a psychedelic drug, but at least the drug did not seem to impede his performance. The major thing that the experiment proved for me was that it is possible to run such experiments even in the altered state of consciousness triggered by a moderately high dose of LSD (200 micrograms). Of course, the experiment must be adequately planned and encouragement must be given to the subject to guide his concentration on the experimental task. At least the result interested me in the continuation of such research.

In experiments at the Maryland State Psychiatric Research Center we have continued the work started by Cavanna and Servadio and have tried to improve in some ways on their procedure. For one thing, we have standardized the content and timing of the parapsychological task. Dr. George Sjolund, a psychiatrist on our staff, has developed an automatic electronic device for generating, recording, and scoring a series of ESP guesses.¹⁰ A punched, randomized tape is fed into the machine which automatically sets up one of five targets on a rectangular box with five translucent windows, 2" x 2" in dimension. In each window is a different symbol on a different colored background, as follows: (1) square design on a red field, (2) circle design on a blue field, (3) triangle design on a green field, (4) cross design on a yellow field, and (5) horizontal bar design on a white field. In the room where these symbols are displayed as they are set up by the machine, a sender can try to send to the receiver who is in another soundproof room down the hall. The receiver has before him another rectangular box with the same five windows and targets. He makes his guesses at his own speed by pressing the symbol which he thinks has been selected in the other room. After each guess is made by the subject, the target, the subject's response, the correctness of the response, and the time of the response are automatically recorded by pens on a moving paper. The machine then automatically sets up a new target. If the subject desires feedback, a light will come on briefly after each guess that is correct. With this apparatus subjects can be run for as many guesses in a series as desired, but usually trials are run in a series of 100 guesses. The advantage of such an apparatus is that the ESP task is standardized and automatically recorded. Results can be determined almost immediately, and instantaneous feedback can be used for the training of subjects. Non-drug assisted results of this research are being published by Sjolund and Brown.

Because ESP experiments with the apparatus were already in progress at our Center, we decided to try some pilot experiments on the

effect of LSD on psi scoring. Before a description of these experiments and our results is given, a brief summary of the way we run psychedelic drug sessions will clarify the difference in our approach from the way Cavanna and Servadio did their experiments. In the first place, each potential subject is carefully screened with psychological tests and psychiatric interview. Ten to twenty hours is then spent working with the subject on a one-to-one basis in preparation for the psychedelic drug experience. We feel it is essential for a solid rapport to be built up between the subject and the psychedelic guide. In contrast to Cavanna and Servadio, we use rather high doses of the drug. For example, with LSD the dosage would be somewhere between 200 and 400 micrograms, which is enough to cause a profound alteration of consciousness. At this dosage, the drug session will last between eight to fourteen hours. During this time the psychedelic guide and/or a nurse is with the person continually. The sessions are run in special treatment suites which have been built at our Research Center. The rooms are comfortably furnished with a sofa, easy chairs, rugs, drapes, and good high fidelity stereophonic music equipment. For most of the session, the patient will lie on the couch with a sleep shade over his eyes and listen to a carefully selected program of classical music under stereophonic earphones. This procedure helps a subject focus his attention inside of his mind on the powerful internal experiences which are released.

During an eight- to fourteen-hour psychedelic drug session, many things can happen. One of the most profound and meaningful is the experience of positive ego loss which can only occur when a subject completely surrenders to the experience and gives up his usual ego controls. Only then is the psychedelic state of unity, or oneness, which we call a peak or mystical experience possible. This is achieved in about half of our subjects during their first session. As the subject is listening to the music, we don't usually interfere too much, but about every half hour or so the guide will check in with him to give an opportunity to describe his experience if he desires. The aim is to allow the subject to have as deep, profound, and rich an experience as possible. As the drug effects wane (usually between the sixth and eighth hour) most subjects feel more like talking. We encourage him to describe his experience and thus help him to integrate it, as he goes through this very important time which we have labeled the re-entry period.

Although sessions such as I have described were being run for training purposes with normal subjects (most of them psychiatrists and psychologists), we got permission from some of these people to try an ESP test during the session. Thus far, we have run a total of five such normal subjects whose ESP performance was tested both before and during an LSD session. Baseline determinations were done on the day or

days prior to the LSD session so that the subject was thoroughly familiar with the equipment. So as not to interfere with the LSD session, a run of 100 guesses was done during the latter phases of the LSD experience after the main effects of the drug had waned (usually between the eighth and ninth hour). However, at this time the subjects still had many sensory perceptual changes and were still seeing visual imagery with emotional effects. We attempted to investigate telepathy. A sender who was emotionally close to each subject was selected and was used both on the day prior to the session for the baseline determination and then again during the LSD part of the experiment. This person was usually the wife of the subject.

Preliminary findings on these five subjects in our pilot study have not demonstrated that LSD can enhance psi performance under these conditions. In no case was there a significant increase of the LSD performance over the pre-drug performance. In one case, however, there was a marked decrease in scoring ability. Whereas prior to LSD this subject scored at a chance level 21 correct guesses out of 100, under the influence of LSD his score fell to only 10 correct responses out of 100 guesses. The day after LSD, it returned to chance level, 20 out of 100.

In the future we plan to pursue these investigations in a much more systematic and well-controlled way to try to demonstrate some specific drug influence and to isolate the important variables of set, setting, and dosage. We hope to try this experiment at various dosage levels with different psychedelic drugs and also at different times during the session. As Cavanna and Servadio pointed out, personal relationships both before and during the experimental session may be crucial in blocking or enhancing the possible effect of psychedelic drugs on parapsychological phenomenon. Certainly, such experiments should be run in a very supportive setting, both to enhance possible psi effects and for safety. It may well be that the type of psychedelic experience may be correlated with possible effect. By carefully recording what is going on subjectively at the various phases of the drug session, such factors may be successfully isolated. Also, it is important for the experimental subject to have had prior experience with the psychedelic drug being used. It would be ideal for the subject to be very much at home in this very strange altered state of consciousness so that he can concentrate on the pre-arranged task without getting frightened, upset, or distracted. It must be remembered that during a psychedelic drug experience, the subject is extremely sensitive to all kinds of verbal and non-verbal cues, especially with the high dosage levels that we are using.

An important variable may be the time during the psychedelic drug session at which the experiment is attempted. As noted above, our experiments were done only in the final waning phases of drug action,

which may not be the best time to capture psi events. The peak effect of LSD is between the third and fifth hour. Most subjects are very removed from ordinary reality at that time. They are in other worlds and other realities, and it is usually very difficult and many times confusing for them to come out of this state, with one exception—if a person has had a very powerful positive peak experience and has reached what we call a “stabilization of the psychedelic peak.” Although the subject is in a very ecstatic state of mind, he can relate and talk perfectly well. This might be a fruitful time to try an ESP experiment. Another possibility would be the initial phase of drug action as the effects are just starting. Dr. Puharich has told me that he considers this an ideal time to attempt ESP.

Certainly for telepathy experiments, a close emotional relationship between sender and receiver should be maximized at the exact time of the experimental trial. Perhaps it would be possible to set up the experiment in such a way that the sender and receiver could be together in the drug session for the purpose of establishing a close bond or rapport. The experimental trial could then be conducted at such times when rapport was most intense. At those times the sender and receiver could be separated and the experiment performed. The electronic apparatus described above would need to be thoroughly familiar to the receiver who would be under the influence of a psychedelic drug, because during such a session even very familiar persons and objects can become quite unfamiliar and frightening. Ideally, the drug subject who would act as sender should also be a person who has had prior psychedelic drug experience so that he would act appropriately and not disrupt the session because of fear or naivete.

As suggested by Cavanna and Servadio another experiment might include an attempt at telepathy when both sender and receiver were under the influence of the drug. Such an experiment would be much more difficult to run, but not impossible with experienced subjects.

The dosage level may be another important variable. Certainly different drug experiences are seen at low and high dosages. For example, psychedelic peak experiences may be seen at high dosages and are almost never seen at low ones. A systematic study at various dosage levels should be carried out, and perhaps a dose-response curve of psi effects could be found.

It may well be that the psychedelic drugs used for experiments thus far are not the most effective agents for enhancing ESP. In recent years, combinations of an amphetamine and a psychedelic drug have become known. I refer to STP (2,5-dimethoxy-4-methylamphetamine) and MDA (methylenedioxyamphetamine). Since Rhine's original work with caffeine showed that stimulant drugs seemed the most promising

for parapsychological experiments, these amphetamine derivatives would seem logical for future experiments. STP has an inherent disadvantage in that its duration of action is even longer than that of LSD (more than twenty-four hours with relatively high doses). On the other hand, there is some evidence that MDA has a much shorter duration of action—only four to eight hours. MDA is reported to produce less frightening and negative experiences, perhaps because its effects seem to be much more under the conscious control of the subject. There are no reports of visual distortions of any kind with eyes open, whereas with eyes closed there is rich internal imagery associated with powerful positive emotions. If these reports are true, there is the possibility of avoiding the difficulties encountered by some of Cavanna's and Servadio's subjects who reported very unpleasant effects which may have interfered with their motivation and ability to perform the required task. No recent research has been done with this drug in the United States legally, although MDA has been available on the black market for the last several years. MDA is certainly a drug we hope to investigate further at the Maryland State Psychiatric Research Center.

Another drug with which we have been experimenting as an aid to psychotherapy is DPT (dipropyltryptamine). Its virtue is an extremely short duration of action compared to LSD and psilocybin. In low dosages its duration is only one and a half hours and even in relatively high doses (100 milligrams), only three to four hours. The drug effects are similar to the other major psychedelics.

A modification of our own apparatus and procedure to bring in more emotion and feeling also would be worth attempting. Perhaps our ESP machine is too sterile and contrived. Instead of colors and symbols, pictures of people who are emotionally close to the receiver could be inserted in the target windows. Also, the actual people represented by the pictures could be present to attempt to send a telepathic impression to the receiver when their picture became the target. Another change in this same direction would be to superimpose a physical sensation with an emotional counterpart on each of the five symbols. For example, when a sender was attempting to transmit the red target, he could place his hand on a low wattage light bulb which would give him a sensation of warmth. For the blue target he could put his hand on a piece of ice; for the green target he could feel a piece of green fur; for the yellow target he could simultaneously experience a pin prick; and for the white target he could place his hand on a vibrator.

Conclusion

Throughout the history of parapsychological research there have been hints and suggestions that certain drugs might modify the results

of psi performance. Some have been from anecdotal experience, and others have been when drugs were given during parapsychological experiments. Up to the present, no clear-cut or substantial effect of any drug has been demonstrated, perhaps with the exception of the depressing effect of a barbiturate like sodium amobarbital on ESP scoring as reported by Rhine. This is not surprising because amobarbital in the doses he used would also tend to impede performance on many psychological or cognitive tests. The pioneering and significant work of Cavanna and Servadio, while not producing very significant positive results, has demonstrated that carefully controlled studies are possible and even promising. At the Maryland State Psychiatric Research Center we have started to investigate effects of LSD with a standardized apparatus for running and recording ESP experiments. In the future the older psychedelic drugs should continue to be investigated under a variety of conditions, and newer ones should be explored. The possible effect of psychedelic drugs on ESP phenomena provide an exciting challenge for parapsychological research in the future.

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OPEN DISCUSSION

SERVADIO: Thank you, Dr. Pahnke, for a very stimulating presentation. Now we will have our discussion and I would suggest that the papers be discussed separately. I, myself, will have something to say about both of them because, as you know, I am and have been very much interested in the subjects they deal with, but let's first give others a chance and we'll open our discussion with Dr. Herbert on Dr. Greenbank's paper.

HERBERT: Dr. Greenbank, could you pinpoint more precisely the evidence of the people who experienced these apparently precognitive effects? Did they deliver any evidence that they had experienced this before the suicide? Is it established beyond a reasonable doubt?

GREENBANK: In the case of the Japanese resident, it is established beyond reasonable doubt that the intern had these thoughts prior to the awareness of the suicide. The gynecologist [his roommate] who presented the dream of the chicken with its head cut off spilling blood around, knew of the suicide when he told this reporter of the dream, but he had previously told a fellow intern of his dream, of having had a nightmare of a chicken before either of those two doctors knew of the suicide. So this is the documentation for this case. In the case of the girl who slit her wrist, the artist did not know at the time she phoned her that she had slit her wrist, and the girl did not tell her until she saw the picture which she asked her artist friend to bring over to her house. Then she looked at the picture and said, "Oh my God, you knew!" This was the first time the artist knew what had happened other than the fact that she had drawn the cut wrist with the blood flowing from it, but she did not know what the picture meant.

COHEN: It seems to me there was a point that was not mentioned in this particular case. You said the suicide was a Japanese, but you did not mention the racial background of the two others.

GREENBANK: The intern was of English extraction, but American. The obstetrician-gynecologist was an American also and I think of German extraction primarily.

COHEN: Well the reason I bring this up is that I don't think it is possible for anyone to have grown up in America and not connect the Japanese with suicide. Quite seriously! If you had a Japanese friend who was seriously depressed although he had never himself talked of suicide—just having grown up with movies of hari-kari through the Second World War—you could not possibly, even subconsciously, exclude the idea that this person was one day going to commit suicide and do it with a knife or razor or something where there would be a cutting action and a great deal of blood. I think this is to be considered in this particular case.

GREENBANK: I certainly think you're exactly right. I'll add another piece of information that may be of some value here. The Japanese didn't think so. In fact, his father, who was a Professor of Surgery at a Japanese medical school and head of a large hospital, flew over in a Japanese Air Force plane with the Japanese Ambassador to the hospital. He said this was murder, even after seeing the suicide note, and it required State Department intervention to keep this from becoming an international incident. He was absolutely sure that this was a gruesome murder of his son. The suicide note was not acceptable to him.

PAHNKE: One thing I'd like to ask you: You stated that you presented this to over seven hundred physicians. Among those in psychiatry, did any of them mention cases regarding parapsychological events that they have found in their own practices that they brought forth in discussion?

GREENBANK: Not remarkably. I'm trying to think back as to whether there was any single case presented by any of them. I couldn't say there absolutely weren't, but I would say that the primary discussion related to the material I presented.

COHEN: How did they react to it?

GREENBANK: Oh, they were very interested and there were questions back and forth about the details in it. There was no doubt about it at all. This has been universal. I don't think anybody has ever said "Did you make this up?"

WEINER: The reason I would focus on the second story (and I'm not a doctor) is because I found the first story very confusing. I couldn't

follow it as easily. To this moment I'm not too sure about all the details, but the second story is very clear. You naturally go to that, which really picks up clearly. My second question is really one that betrays my amateur status in this kind of enterprise. There are so many hundreds of such stories that all of us have heard. What's the value? Just, you know, offering them and then, "I know somebody this happened to." Just what do we get out of it?

GREENBANK: Well, I think that it is important to put material on the record and somehow I think—and this is my own personal bias—that phenomena of this nature are more likely to reveal new information than whether or not you can tell if there is a cross or a diamond on a card. Not that that isn't an important area of research also, but I think that there are two different kinds of phenomena going on here just as there is a difference between thought and theory and I suspect that this is the equivalent of "feeling" ESP, whereas what they are doing with the cards is more likely "thought" ESP.

WEST: I was wondering about the details of the doctor's story, where you said the doctors were, of course, in communication. I imagine that the roommate would be in particularly close communication and the roommate may not, for one reason or another, have wished to recognize the state of mind of the Japanese so he accepted the suggestion to go away and leave the Japanese alone and you said that he went away for the whole night and stayed away. He did not believe therefore that he was in an anxious state of mind or an ambivalent state of mind and hence had the dream. I would place this on the basis of normal perception rather than extrasensory perception.

GREENBANK: I think there's no question that the dream was produced by his state of mind. I guess my question is why did he have this particular dream as opposed to, say, a dream of a dragon chasing him breathing fire?

WEST: I just thought it might very directly symbolize what he feared might happen. Now about the experience of the other doctor who had the idea in his mind. You said that the first doctor—that it was unusual for him to have a dream of this kind. The second doctor, if I understand it correctly, really had a sort of idea pass through his mind which made him turn back and look.

GREENBANK: Well, he had two ideas. One idea as he passed the Coca-Cola machine; the second idea as he passed the partially open door. Now the second idea was strong enough to make him return even though he had an emergency which required his attention.

WEST: Yes, I see. So the unusual part of that is that he altered his course of action.

GREENBANK: That he had the thoughts telling what he was going to discover.

SERVADIO: Before going on to discuss Dr. Pahnke's paper I would like to make a few remarks, as a veteran in this particular field. Going back to something that Dr. Weiner remarked, I can tell you that round about 1933 or 1934, after several years of readings in parapsychology, I got a bit tired with some of these episodes until I met something that I found paranormal in my own analytical practice, and it was then that I started those studies. I think that by now I've published some eighteen papers about psychodynamics of these phenomena, and I tried to assess the condition—how they occur in the analytic situation and in love situations which could be, hopefully, evaluated from a psychodynamic viewpoint.

The paper by Dr. and Mrs. Greenbank is, of course, a valuable addition to this material; we never have enough of this material, but if I may make a suggestion, I'd ask him in future works to bend his attention more to this fantastic binomial situation which, in the analytical situation, seems to make this important. What everything boils down to is this. These things do occur, but what we want to know is why and how they occur.

GREENBANK: I feel, in answer to this, that we are at the stage in this area as the astronomers who presented, I'm sure with some embarrassment, the fact that the planet Neptune was arriving at a certain place in the heavens one-tenth of a second later than it was supposed to. Their concern about this infinitesimal inaccuracy in their prediction led them to mathematically prove where the planet Pluto must be to produce this effect. Then for the first time Pluto was seen through the telescope. But suppose somebody had just said, "Well, we were a second off or a tenth of a second off, and what difference does it make; it's millions of miles away." I think that what I'm doing in presenting this material is providing attention to the kinds of things which might very easily be ignored in our rushed world, in the hopes that somebody will be able to find out what is going on.

SERVADIO: Now we will go over to the discussion of Dr. Pahnke's paper and may I, as chairman, say quite a few things about it. First of all, I wish to congratulate him because I find it a very good work and thank him again for mentioning me so often. I will make one remark and ask him one simple question. I was struck by the contrast between the state of consciousness of the subjects and what they had to perform

in the experiments. I was not surprised that you had failures and that when the subjects were in that particular state, their parapsychological, their psi performance was below their usual standards. Having used such high doses of LSD, they were in such a blissful state or in such a distant state, they didn't really and truly care about the experiments. May I say that when I took LSD for the first time, I was attended by a very nice friend of mine, and in the very moment when I was very high up in the LSD experience, he came with two or three sealed boxes and asked me to try and guess the contents, and I told him flatly, "Go and ask Mrs. Garrett."

ELY: I wanted to ask Dr. Pahnke what the aim was in this experiment. I was just wondering what ground work you had in your mind that you didn't express.

PAHNKE: I don't know that it's that sophisticated or complicated. Let me say that with people who are very gifted in terms of psi phenomena, it seems that they are able to gather this information when they are in a special state, not just ordinary consciousness. They alter their consciousness in some way, and since the drugs alter consciousness, it would be logical to assume that if you could find the right drug and the right dose and the right time you might enable an ordinary person to produce the same thing with the aid of a drug. Now perhaps it could be done with hypnosis or meditation just as well. It is true that in yoga, at a certain stage of yoga training, some people apparently are able to do these things, but the guru might very well say that that's a blind alley, not to get caught in it, that there are other things more important to do.

WEINER: Would it be out of order to ask Mrs. Garrett if she feels that the use of some kind of external stimulant helps to make a sensitive more sensitive, more able to function?

MRS. GARRETT: No, on the contrary. I have taken LSD on several occasions. I have enjoyed it immensely and have had great difficulty in leaving it. I have taken psilocybin also, with Dr. Cavanna, but it did not improve my state of being clairvoyant or clairaudient or going into trance. They helped me in no possible way, so it is simply my own desire to discover what goes on that makes me take it from time to time. It does not interfere with the psychical area.

PAHNKE: I would say in response to your comment about giving the subjects their tasks at the height of the reaction, that this was not the case. Rather it was near the end at the eighth or ninth hour, so even with the high dose, I think the subjects were able to cooperate. They

knew what they were doing; they were trying very hard, although they were still under some effects of the drug.

HANSEL: I would have thought that, considering the mental state you're aiming at, it might be useful to use a drug or treatment or something that would more or less produce a state of amnesia in the subject, so that his past experiences would be more or less unavailable.

PAHNKE: The only type of drug that I know that produces a total disorientation, as you say amnesia, which certainly is produced as well, is an atropine-like derivative, but this does not produce a psychedelic peak experience at all. Usually they're very negative experiences and produce amnesia. I don't know of anyone who has tried those drugs in parapsychological experiments. I would doubt whether you could get any positive results.

HERBERT: I just want to add that in my own experiments, in my own group, we have frequently tried a dose of caffeine, but we don't seem to get any greatly improved results.

PAHNKE: Does anyone have any suggestions about the future which might be ideal in setting up an experiment with regard to these drugs?

SERVADIO: I think we have to think about it, but you certainly gave some very valuable suggestions.

OTHER:* In regard to that query and to follow Dr. Servadio's thoughts, could one obtain the timing situations from the experiences themselves?

PAHNKE: We have the receiver under the drug, not the sender. By getting a monitoring of the sender's mental images, then you could compare that with the receiver's.

SERVADIO: The receivers presumably have certain experiences . . .

PAHNKE: The range is so infinite, it's different every time, so that it's hard to know. Well, for instance, if you took LSD ten times you'd have ten probably completely different experiences, and that's based on many factors—what you think about before, how you feel, what's going on in your mind, what you ate for breakfast, etc.

OTHER:* It seems, as far as I can make out, in ESP and in general mediumistic experiences, that what people experience and what they perceive are their own inner images that are triggered into awareness by the LSD stimulus, so what I would look for would be something

* Unidentified voice.

that's already in the head of a subject but that comes to the surface during these experiences, but if the range is so vast, then indeed, what can you do?

PAHNKE: The conclusion that you come to after working with LSD is the infinite range of the human mind and the unconscious. It's fantastic.

OTHER:* How about just ignoring the experiments at the time, but exploring these people before they've had a series of LSD experiences and after they've had a series of LSD experiences, just to see if there is any change in their general parapsychological openness?

PAHNKE: Well, now in these five normal subjects whom I described, some of them were very interested in what we were trying to do and they volunteered to come back after the LSD to try the experiment on other days. What has happened has been that the scoring level seems to go back to what it was before the LSD. It doesn't seem to be any worse or any better.

OTHER:* Stanley Krippner, I believe, has had some drug experiences at some stage and he told me that now he seems to be more parapsychologically open than before.

PAHNKE: Well, perhaps. Another interesting speculation is with regard to Dr. Dingwall's paper. This great upsurge of interest in the occult some people say is due to the increasing use of drugs like marijuana and psychedelics in the United States, for instance. In fact, if people have very unusual experiences with drugs, it makes them much more open to some far-out ideas whereas before they weren't even thinking about them. Now they're interested in astrology and all kinds of things. I would predict that the faddish type of interest and uncritical type of interest will probably pass. Some of these people hopefully will get into it more seriously, rather than just going off on a tangent.

MUNDLE: One of the five subjects had a chance score before and a chance score after the session. Now did he have a very high score?

PAHNKE: No, he had a low score—ten out of a hundred.

MUNDLE: How many runs?

PAHNKE: Just one.

MUNDLE: Then this is just purely chance.

* Unidentified voice.

PAHNKE: Right.

MRS. BOLTON: I only heard peyote spoken of once. Did you not study that at all? Are you doing anything with it?

PAHNKE: The active ingredient in peyote is mescaline and we have not done any experiments with mescaline. Peyote itself contains about seven active ingredients; the most important one is mescaline but peyote contains a lot of other substances that are toxic, so that's why most people get nausea and vomiting. It's difficult to work with and very disagreeable to take.