

# The Use of Hypnosis to Interrupt and to Reproduce an LSD-25 Experience

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D-Lysergic acid diethylamide (hereafter referred to as LSD-25) is a well-known chemical used for altering the psychological state of man. The remarkable interest in LSD-25, which was first synthesized about two decades ago by Stoll and Hofmann (1938), indicates a long-felt need by research psychiatrists for methods of producing psychiatric syndromes in the laboratory. Pure mescaline was known for many years before LSD and produces experiences that are qualitatively similar to those produced by LSD-25. But, since 300 to 500 mg. of mescaline was required for effect, it was easier to ignore its value and to claim that it produced merely a toxic psychosis and therefore had little value for research in psychiatry. When 100  $\mu$ g. of LSD-25 produced similar states, this argument quickly yielded because the body conceivably could manufacture microgram quantities of similar chemicals—even if it could not make milligram quantities of a substance like mescaline.

LSD 25 has been used in two ways:<sup>2</sup> when the objectives and the setting are designed adequately, it may produce a model of schizophrenia (a model is not an identity); in this way LSD 25 has been most helpful. But in other settings and with different objectives, it may produce a psychedelic experience which can yield beneficial changes in personality. The psychedelic experience is marked by perceptual changes of a pleasant sort, by marked relaxation and freedom from anxiety or pain, and by thinking of the highest order of creativity (see A. Huxley in *Doors of Perception*<sup>4</sup>). The psychedelic experience is sought by scientists who study ways of altering personality beneficially and as a treatment for various psychiatric disorders.

Since it is important for the experimenter to be able to produce a specific experience, and since the expectations and attitudes of the subject are of considerable importance, many authors have studied the influence of such factors as suggestion (placebo) in the LSD-25 experience. Suggestion is a rather nebulous term, especially when applied to the LSD experience, because suggestions given to the subjects are as often denied vigorously as they are accepted. A more directed use of suggestion is provided by hypnosis. The hypnotized subject accepts suggestions that are given to him as commands. For this reason, we have studied the following hypothesis, namely, that (a) hypnosis can be used to restore an LSD subject to normal, and (b) the LSD experience can be recreated by hypnosis—in other words, that it is possible by a simple form of psychological intervention to remove or to produce an LSD experience.

Since only one subject is reported on in this paper, it is impossible to generalize beyond the results of this experiment. But studies of single cases have traditionally been used in medi-

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and have often been more accurate than subsequent double-blind studies, as for instance the single-case study of ololiuqui,<sup>5</sup> and the recent discovery by Hofmann and Tschertter<sup>3</sup> that ololiuqui contains lysergic acid ethylamide. If one subject can be found in whom certain changes are present, it is safe to assume that these changes will also occur in other individuals; however, one will not know how many such people there are, i.e., what proportion of any normal population will react in a similar way.

## FIRST EXPERIMENT

The subject is a 32 year old normal person. She volunteered for these experiments because she was intensely interested in hypnosis and because the money (\$2.00 per hour) was helpful. She had worked for several months as an attendant in a provincial mental hospital outside Saskatchewan many years ago, but had not received any lectures in psychiatry. She is a vivacious, alert, interested, and friendly person. Her relationship with her husband and her two young children is normal.

This woman was trained as a hypnotic subject by one of us (Dr. F.), who began working with her in April, 1960. After several sessions it was possible for her to enter the deepest trance states at a simple command. She was given posthypnotic suggestions that she would not be hypnotizable by anyone but a qualified physician trained in hypnosis. When hypnotized, she was able to accept suggestions given to her by Dr. F. and resolutely carried them out in the posthypnotic state; but she would not accept any suggestions contrary to the one already given her—even if they were made by Dr. F.

*Administration of LSD.* On September 18, 1960, the subject was given 100  $\mu$ g. of LSD-25 by mouth at 2:20 P.M.; she had been hypnotized at least 30 times by then. Just before she received the LSD-25, she had been hypnotized and given the suggestion that the drug would not produce any tension in her. She was then awakened. Both of us and Dr. K.\* were present.

*At 20 Minutes.* The subject reported that she had a very nice taste in her mouth.

*At 35 Minutes.* Apart from a slight feeling of sleepiness, there was no further change in the subject. Her pupils had increased in diameter so that they were  $\frac{2}{3}$  (the pupil diameter occupied  $\frac{2}{3}$  of the total diameter).

*At 50 Minutes.* The subject felt giddy and laughed readily. On request, she reported she could see a halo† over Dr. F. and the other members of the group; the halo was like a flame. Other perceptual changes now were present. Objects in the room appeared different, but she could not describe the nature of the difference. Then Dr. F. suddenly appeared much taller and thinner. Dr. H. was sitting with his feet crossed; the one pointing at her appeared enormous.

*At 60 Minutes.* The subject enjoyed a cup of coffee whose taste she found very good, and ate a biscuit whose taste she did not find as good as that of home baked ones.

To sum up, during the first hour, the LSD-25 experience developed in the usual way.

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† The halo is frequently seen by subjects having a psychedelic experience.

There was no unpleasantness or tension at any time. The subject related well to the three observers, was friendly and alert.

*At 75 Minutes.* Visual perceptual changes were marked in the subject; Dr. F.'s cigar seemed enormously long. She had been unpleasantly chilly for a few moments. Next, she lay on the couch, appeared comfortable, and smoked a cigarette with relish. Her pupils were  $\frac{1}{2}$ . She was not able to leave her body ("out of the body" experiences are common with psychedelic experiences) on suggestion.

*At 85 Minutes.* The subject seemed about the same but felt that she had feathers on her.

*At 100 Minutes.* Dr. F. began to hypnotize the subject, using voice and concentration on his eyes. After five minutes he had not yet succeeded, although usually the subject could be hypnotized in a minute or so. She now complained of being terribly cold and feared she would never be warm again. She could not listen attentively to Dr. F. because she was watching flowers moving about on the ceiling of the room. The attempt to hypnotize her was stopped until she had passed through this phase of being too cold.

*At 120 Minutes.* The two hour experience of the subject had been normal for LSD-25. The attempt to hypnotize her had failed because she was uncomfortably cold and because the pictures on the ceiling distracted her.

*At 125 Minutes.* Dr. F. decided to use a quicker and more commanding method for inducing the trance. He forcefully ordered the subject to go into her trance, repeating his command frequently and loudly. Three minutes later she had entered a trance state. This resembled the state she had entered so often previously, when no LSD had been given. The usual tests were given her to determine the depth of her trance; she was found to be in a deep trance. She was now able to leave her body on command. Dr. F. gave her repeated suggestions that she could experience a mystical state. She was allowed to remain in this state, but at 150 minutes she developed a severe pain in her right shoulder and spontaneously came out of her trance.

*At 160 Minutes.* The subject was again hypnotized with little difficulty. This time, after she had reached the deepest state possible for her, Dr. F. suggested to her that when she came out of her trance (Dr. F. would bring her out by counting one, two, three), the LSD experience would be over, and that she would be entirely normal again. She came out of her trance at the word "three" in the usual way. The perceptual changes now were minimal: she reported that Dr. H.'s face looked more normal, although it did appear somewhat young, and that the size of his foot was normal; Dr. F. also appeared normal. When she looked at a flower, it was normal, i.e., it did not have the "alive" appearance it had had while she was under the effect of the LSD-25. She no longer felt like giggling. Although she appeared to be nearly normal to us three observers, the subject did not agree: she said she felt sensitive to touch. Dr. H., who had given LSD-25 over the past nine years to at least 300 subjects, thought she had returned to normal because there were no perceptual changes and both her thought process and her mood were normal. However, her pupils were still  $\frac{1}{2}$ , which suggested that the LSD-25 was still present and functioning biochemically.

*At 170 Minutes.* The subject was easily hypnotized and given the command that she

would now have the usual LSD experience in the posthypnotic state. When she came out of her trance, she presented the usual LSD phenomena. All the visual changes were present. She described her LSD experience as it had been before, and she related to the observers in the manner that is usual with LSD. Five minutes later the experience became more intense.

*At 180 Minutes.* The subject was hypnotized easily and when, on command, she came out of her trance, she was normal. This was the unanimous opinion of all four people who were present, including the subject. There was no evidence of any abnormality.

The LSD-25 has now been acting three hours. Only rarely will a subject (especially an alcoholic) return to normal within three hours. It was, therefore, decided to rehypnotize her and allow her to come out of this trance with no suggestion whatever.

*At 190 Minutes.* The subject was rehypnotized. When deeply in trance, she was given the command to come out of her trance at the count of three. She came out this time with the usual LSD phenomena. She was allowed to react to the LSD-25 for the next 20 minutes. Most of the time she was absorbed by the beauty of a flower she was holding (see A. Huxley's *Doors of Perception*<sup>4</sup>).

*At 210 Minutes.* The subject was again hypnotized and given the command to be normal in the posthypnotic state. When she was brought out of her trance, she appeared to be normal to the three observers. The flower which previously had so entranced her now was merely a flower. She stated she felt she was normal enough to go home. She spoke with assurance and walked about freely and normally.

*At 220 Minutes.* The subject was hypnotized and given the command to come out of her trance. She once more entered the LSD experience and was allowed to react for the next hour. During this time she had the usual LSD changes in perception and in thinking, and she was relaxed and at ease. She had a typical psychedelic experience. Toward the end of the hour, she began to report waves of normality. At the end of the hour, she was normal enough to go home. Often our subjects are this normal after five hours. The subject was under constant supervision during the remainder of the day and was given sedation for sleep at 8:00 P.M.

#### SECOND EXPERIMENT

Three weeks later, the same subject came in for the second experiment. It was planned to give her the LSD experience by hypnosis alone. She reported that she had enjoyed her previous LSD experience immensely and that she had been singularly free of tension and anxiety during the three week interval.

*Hypnosis.* The subject was hypnotized at 8:20 P.M. Dr. F. then suggested to her that when she came out of her trance she would have the same experience she had had when she had taken LSD-25. As soon as she came out of her trance, she complained of feeling very cold. Dr. F. suggested she would soon become warmer. The LSD experience with its usual perceptual changes was now present: her pupils became  $\frac{2}{3}$ ; her feet seemed large to her; and Dr. H. and Dr. F. seemed physically younger. When she was given a large

painting to examine, it became alive to her and she felt she could enter the picture bodily. She reported that her experience was very much like the previous LSD-25 experience, but not as vivid.

*At 10 Minutes.* The subject's pupils were  $\frac{2}{3}$ . The picture still seemed alive to her. Dr. F. hypnotized her and then brought her out normal. She reported that she felt as if she had been drugged, and reported the experience she had had. She was again hypnotized and given the LSD experience. This time she was allowed to remain in it until the end of the experiment. Dr. H.'s face appeared young and was surrounded by a halo, and the subject could change the size of her hands by looking at them. When this happened the first time she was surprised and broke into a smile.

*At 16 Minutes.* According to the subject, the grain of the wood on the floor rippled. She complained that her thoughts were sluggish. She then stated that Dr. F. and Dr. H. were making fun of her—that she knew this from the expression on their faces, but that it did not disturb her since she believed it to be part of a game. Dr. F.'s shoulders appeared reddish and broad. The picture seemed alive to her.

*At 21 Minutes.* On command, the subject left her body and had an oceanic experience. She found herself at the bottom of the ocean. There she was amazed by the clay and sand and weeds, but she saw no fish. She felt very close to God.

*At 42 Minutes.* The subject was hypnotized and brought out normal. There was little doubt that she had had another LSD experience, which included memories from the real experience when she had been given LSD-25 and new impressions she had not described the first time. The experiment was terminated at this point.

A few weeks later, the subject reported that the two experiences had been similar but that their aftermaths had been different. After the real LSD-25 experience, she had had a period of unusual relaxation and a feeling of well being; this did not happen after the hypnotically induced LSD experience.

## DISCUSSION

There is little doubt that we were able to terminate the LSD-25 experience of our subject at its height by hypnosis. This occurred when the LSD experience was maximal and when the pupils were still widely dilated. It is impossible to state with absolute certainty that the subject was normal; however, the hypothesis that she had really not been normal is highly improbable, for the subject stated that she was normal (i.e., she was not aware of perceptual changes). She behaved as if she were normal and, by the usual conversational interchange with the observers, appeared normal. It is possible that we three observers were markedly biased in our observations, but this is unlikely. One of us (Dr. H.) had predicted before the first experiment that it would be impossible to bring her out of the LSD experience by hypnosis; Dr. K. had no emotional investment in the experiment—he was an interested observer; and Dr. F. had believed all along that it would be possible to make her normal by hypnosis. All three of us were in agreement about the subject's normality.

It might be said that in reality the subject was not normal but was in a posthypnotic, trance-like state that gave her the false impression that she was normal. However, this is

really not different from the statement that she was normal. The normality was not due to the normal recovery from the effect of the LSD-25, because the last hour of the experience was the usual one of the LSD experience.

It was possible to give the subject an LSD-25 experience by hypnosis. This consisted not only of a reproduction of the previous LSD experience but much more. When she was given stimuli and suggestions that had not been given earlier, they acted appropriately as if the subject had indeed been given LSD-25. The major difference was that LSD-25 gave her a condition of ease and relaxation for the following three weeks, whereas the hypnotically induced LSD psychedelic experience did not.

Although it would be rash to draw firm conclusions from preliminary experiments, it is possible to state that there are at least two major components to the action of LSD-25—one biochemical and the other psychological. This is not an exciting conclusion; it has been drawn numerous times by other research workers. Nevertheless, by the use of hypnosis it may be possible to measure the strength of each component.

It is possible to have the following four states: (1) No LSD-25 given, but some LSD-25 experience due to some strong conviction or suggestion; this is the usual placebo reaction; (2) No LSD-25 given, and no LSD-25 reaction; (3) LSD-25 given, and the usual psychological experience; and (4) LSD-25 given but, due to some powerful conviction of the subject, the reaction is suppressed. This would be another example of the obecalp reaction described by Hoffer and Osmond,<sup>1</sup> i.e., a negative or indifferent reaction to a chemical known to be active—in this case LSD-25.

#### CONCLUSION

It was possible to make one subject normal by hypnosis at the height of her LSD-25 experience. Three weeks later, it was possible to reproduce an LSD psychedelic experience by hypnosis alone.

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