

music, paintings, and exposure to sunlight in a garden setting. Usually, the LSD was given to groups of three to five subjects. At least one 'sitter' was constantly present who himself had experienced LSD." Half the subjects were patients, i.e., undergoing some form of psychotherapy. The others were colleagues, psychotherapists, lawyers, writers, etc. This study will be referred to subsequently as the "Ditman Study."

- (2) Sherwood, J.N., Stolaroff, M.J., and Harman, W.W., "The Psychedelic Experience — A New Concept in Psychotherapy." *J. Neuropsychiat.*, 1962, 3, 370-375. And Savage, C., Harman, W., Fadiman, J. and Savage, E., "A Follow-up Note on the Psychedelic Experience," in Sanford M. Unger (Ed.), *Psychedelic Drug Therapy: A New Approach to Personality Change*. To be published early in 1964.

A questionnaire overlapping much of the questionnaire in the Ditman Study was used, and the results are presented together in Tables (1) and (2). All subjects had undergone the LSD experience 3 to 14 months previously. All 96 subjects were paying patients. Subjects were typically given 100-200 μg of LSD plus 200-400 mg of mescaline, individually, after intensive preparation. This preparation included discussion of aims, of willingness to surrender old concepts and preconceived ideas, and of the necessity for trust. "All of the pre-treatment contacts aid in the development of these key factors within the subject, willingness and trust, which are essential to the movement into and most effective use of the psychedelic experiences." The inhalation of a 30% CO₂ and 70% oxygen mixture B is also used in the preparation, which "gives the subject an opportunity to 'practice' the sort of surrender which will be called for on the day of the LSD session."

"The psychedelic session is held in the congenial surroundings of a tastefully furnished room containing a tape-and-record player console and various carefully chosen works of art. The subject spends a good fraction of the day lying comfortably on a couch listening to music. . . . The therapist will usually initiate rather little conversation during the session. The subject is ordinarily encouraged alternately to explore within, and to respond to stimuli in the outer environment (such as flowers, room furnishings, works of art, photographs of close relations, etc.). . . . The subject is urged to postpone analyzing his experience until after the session and to accept the experience as it occurs without labeling or evaluating." This study will be referred to subsequently as the "Savage Study."

- (3) A survey of 194 questionnaire returns from the file of Dr. Oscar Janiger was presented by W. M. McGlothlin in "Long-Lasting Effects of LSD on Certain Attitudes in Normals: An Experimental Proposal," a RAND corporation reprint (1962).

The Subjective After-Effects of Psychedelic Experiences:

A Summary of Four Recent Questionnaire Studies

The results presented below were extracted from four recent studies in which LSD or psilocybin was given to volunteer subjects and the after-effects of one experience assessed by means of questionnaires. The studies selected are concerned only with *subjective claims*, not with objective ratings or indices. Studies of specific descriptions of the content of psychedelic experiences are not included; the questionnaires were used to obtain from the subjects *general evaluations* of their experience and its effects.

Subjects, methods and background of each of the four studies will be briefly described. Only a brief discussion is given of the tables (the original papers may be consulted for more extensive evaluation). The purpose of this summary is to present these strikingly similar and in part hitherto unpublished data together in convenient form.

- (1) Ditman, K.S., Hayman, M. and Whittlesey, J.R.B. "Nature and Frequency of Claims Following LSD." *J. Nervous & Mental Disease*, 1962, 134, 346-352.

The data are based on 74 questionnaires returned by subjects who had been given 100 micrograms of LSD six months to three and one-half years previously. The LSD was given in "a permissive but non-treatment" setting in order to compare the LSD experience with that of delirium tremens. . . . "Our subjects received no intended psychotherapy during the LSD experience. In general, the atmosphere was relaxed and permissive, with the subjects well-protected from outside disturbances. They underwent the experience in a darkened room, and were allowed various sensory stimuli such as

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"Of the 194 subjects 73 were undergoing psychotherapy and took LSD an average of 3.6 times as a therapeutic aid. The remaining 121 subjects were volunteers and averaged 1.9 sessions. The average interval between the administration of LSD and the completion of the questionnaire was 10 months and the average maximum dosage 171 μg ." The non-therapy groups contained twenty physicians, seven psychologists, one dentist; artists, writers, musicians, ministers; teachers, engineers, housewives, secretaries, students and others. "The conditions under which LSD was administered varied somewhat. The therapy group was made up of patients under several psychotherapists and the conduct of the session depended on their orientation. It should be mentioned that for some of this group LSD was somewhat incidental to their overall treatment and the results are perhaps not comparable to those of patients for whom drug treatment played a major role. The artists participated in a creativity study in which they were asked to paint specific objects while under the effects of LSD. The other non-therapy subjects were generally left undisturbed, and wrote a subjective report the following day." This study will be referred to subsequently as the "*Janiger Study*."

(4) Timothy Leary, George H. Litwin and Ralph Metzner. "Reactions to Psilocybin Administered in a Supportive Environment." (To be published in *J. Nervous & Mental Disease*.)

The data presented are based on questionnaires returned by 98 subjects, one day to three weeks after they had been given psilocybin. Occupationally, the subjects included graduate students, professional writers and artists, psychologists, musicians, housewives and inmates in a correctional institution. They were given doses of psilocybin ranging from 4 mg to 100 mg, with a medium dose of 16 mg. "The drug was given in comfortable home-like surroundings, with no medical or experimental procedures introduced during the session. Subjects were given all available information on the drug and were allowed to regulate their own dosage, within a maximum set by the experimenter. Subjects were free to explore whatever aspects of an experience they wished." Preliminary discussions and reading were designed to prepare the subjects for a pleasant experience involving insight and expanded awareness. Therapy was not attempted during the session, although the inmate subsample were involved in an experimental behavior-change program and therefore expected change. Music, art, pictures, etc., were available during sessions, which were held in small groups ranging from 3 to 10 participants. A "guide" who had experienced psilocybin previously was always present. This study will be referred to subsequently as the "*Leary Study*."¹

¹ Grateful acknowledgement is made to the authors of these studies and, in the case of the Ditman Study, to The Williams & Wilkins Company, Baltimore, for permission to reproduce these data.

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TABLE (1)

"Looking back on your LSD experience, how does it look to you now?"

Item	Percentage*	
	Ditman Study (N = 74)	Savage Study (N = 96)
A very pleasant experience	72	85
Something I want to try again	66	89
An experience of great beauty	66	81
Greater awareness of reality	64	92
Feel it was of lasting benefit to me	50	85
The greatest thing that ever happened to me	49	78
A religious experience	32	83
A very unpleasant experience	19	33
A disappointing experience	7	1
An experience of insanity	7	18
Did me harm mentally	1	1
Like travelling to a far-off land	39	
Very much like being drunk	32	
Return to feelings of childhood	28	
Physical discomfort and illness	17	

* Percentages are the responses in the first two of the following four categories: "Quite a bit," "Very much," "A little," "Not at all."

TABLE (2)

"How were you, or what were you left with, after your LSD experience?"

Item	Percentage*	
	Ditman Study (N = 74)	Savage Study (N = 96)
A new way of looking at the world	48	85
A greater understanding of the importance and meaning of human relationships	47	86
A new understanding of beauty and art	43	64
A greater awareness of God, or a Higher Power, or an Ultimate Reality	40	90
A sense of greater regard for the welfare and comfort of other human beings	38	78
A realization that I need psychotherapy	17	26
More ability to relax and be myself	40	74
Improvement noted by person closest to me	42	64

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Greater tolerance of others	40	75
A sense of futility and emptiness	7	8
A frightening feeling that I might go crazy or lose control of myself	3	8
Sense of relaxation and freedom from anxiety and tension	56	
A better understanding of the cause and source of my troubles	41	
A set of new decisions and new directions for my life	39	
A new sense of fun and enjoyment	39	
A sense of now knowing what life is all about	27	

* Percentages are the totals of the two categories: "Quite a bit" and "Very much."

TABLE (3)

Principal areas of claimed improvement attributed to LSD (Ditman Study)

<i>Item</i>	<i>Percentage (N = 74)</i>	
More ability to relax	40	
More comfort with people	37	
More initiative since LSD	36	
Less anxiety	34	
Increased interest in:		
Nature	38	
Art	34	
Music	33	
Changes in "perspective":		
Deeper significance to things	46	
Things seem more real	40	
Problems less important	39	
Colors brighter	39	
Changes in "attitude":		
More tolerant	40	
More accepting of ideas	38	
More broadminded	37	
Less irritable	33	
Changes in sense of values	47	
Problems such as emotional, financial, drinking, legal, etc., improved	33	

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Improvement in income, living quarters and body-weight	15
Increased sex satisfaction	14

TABLE (4)

Changes attributed to LSD (Janiger Study)

<i>Item</i>	<i>Percentage (N = 194)</i>
Major objective changes (in job, marital status, etc.)	16
Positive change in interpersonal relations:	
with co-workers and employees	43
with acquaintances	41
Increased interest in:	
social reform	18
political and international affairs	22
anthropology	24
morals and ethics	35
Other universal concepts (meaning of life)	48
Positive change noticed by person closest	45
Changes in sense of values (money, status, human relationships, religion, etc.)	48
Looking back on the LSD experience, it was:	
a very pleasant experience	66
a very unpleasant experience	32
something I would want to try again	74
a religious experience	24
an experience giving greater understanding of myself and others	61
an experience of lasting benefit	58
LSD should be used for:	
becoming aware of oneself	75
gaining new meaning to life	58
getting people to understand each other	42

TABLE (5)

Subjective reactions to psilocybin (Leary Study)

<i>Item</i>	<i>Percentage (N = 98)</i>
1) How supportive (relaxing, warm, accepting) was the total situation?	
Very supportive	56

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	Mildly supportive	22
	Neutral	10
	Mildly or very rejecting	11
2)	Was the experience pleasant?	
	Wonderful or ecstatic	32
	Very pleasant	38
	O.K.	23
	Unpleasant or very unpleasant	7
3)	Did you learn a lot about yourself and the world?	
	Tremendous insights	23
	Learned a lot	22
	Learned something of value	43
	Learned nothing	9
	More confused	2
4)	Has the mushroom experience changed you and your life?	
	Dramatically better	12
	Changed for better	50
	No change	37
	Worse	1
5)	How about taking the mushroom again under trustful, secure circumstances?	
	Very eager	56
	Like to	34
	Don't care	6
	Rather not	4

Discussion

Table (1) shows that in both the Ditman and Savage studies, a majority of the subjects claim that the experience was pleasant and gave them increased awareness. 50% in the Ditman study and 85% in the Savage study report lasting benefit. The higher figures in the Savage study are probably attributable to the more intensive preparations and to the conduct of sessions centered around the individual subject. The percentage of experiences reported to be harmful or unpleasant is very small in both studies.

Table (2) reviews some of the descriptions which subjects consider appropriate to their LSD experience. "Greater understanding of interpersonal relationships" and "a new way of looking at the world" are frequent in both samples. In the Savage study, "awareness of God or a Higher Power or an Ultimate Reality" is the most frequent item, and this is significantly correlated ($r = .68$)

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with reports of lasting benefit. In the Ditman study, "those who had a religious orientation, particularly those with a mystical orientation, claimed the most benefit from the experience and found it the most pleasant." These results suggest that perhaps something akin to a religious conversion experience is taking place in some of the subjects.

Table (3) lists the principal area of improvement attributed to LSD in the Ditman study.

Table (4) gives comparable figures from the Janiger study; most frequently reported changes occurred in interpersonal relations and in values. 75% of all the subjects in this study indicated LSD should be used for increasing self-awareness.

Table (5) gives the results of the Leary study: 70% find the experience pleasant, 88% learn something from it, 62% report that it changed their life, and 90% want to try it again.

On some of the questions it is possible to collate the results from all four studies. Thus the percentages reporting a pleasant experience in the four studies are 72, 85, 66 and 70, or an average of 73%. Percentages reporting lasting benefit or change are 50, 85, 58, and 62, or an average of 64%. Percentages wishing to repeat the experience are 66, 89, 74, and 90, or an average of 80%.

In three of the studies, an attempt was made to evaluate the longevity of these claims, i.e., to what extent they are maintained after longer periods of time. In the Savage study, answers were compared at four time periods: less than three months after the LSD session, three to six months, six to twelve months and over twelve months. The results indicated that "felt benefit tends to become apparent some time after the LSD experience and to be sustained fairly well over at least the first year following." In the Janiger study, results were compared after: 0-100 days, 100-389 days, and more than 389 days. Results indicated that "there is a definite decrease in claimed effect as a function of time, and that the decrement is sharpest during the first six months or so. Of individual questions, "becoming aware of self," changes in values, and claims of "lasting benefit" seem to be fairly resistant to erosion by time. In the Ditman study 16 alcoholic patients returned a second questionnaire, approximately three and one-half years after their original LSD experience. They "made fewer claims than they had on the first questionnaire. About two-thirds still claimed periods of abstinence ranging from one to one and one-half years, as they had on the first questionnaire, and three-fourths of these alcoholics still claimed some lasting benefit (fewer arrests, increased self-understanding and esthetic interest).

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None of the Ss, however, had maintained their sobriety to the time of the second questionnaire.

It should be remembered that these four studies are all reports of *subjective* claims and need to be supplemented by studies of changes in objective behavioral indices. Furthermore, in general, these positive results do not agree with the majority of studies of psychedelic drugs in the psychiatric literature. There are two kinds of studies of drug-effects: those in which observations and evaluations are made by the researcher-psychiatrist, and those in which the subject records his own impressions and observations. The first kind of study tends on the whole to lead to negative evaluation — the substances are seen as “psychotomimetic,” producing “depersonalization,” space-time “distortions,” etc. When subjects describe their own experiences, they use phrases such as “awareness of higher reality,” “transcendence of time and space,” of what may be essentially similar subjective effects. It is important to keep this relativity of observations and labels in mind, in evaluating these results.

The Editors

The Hallucinogenic Fungi Of Mexico:

An Inquiry Into The Origins of The Religious Idea
Among Primitive Peoples

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This paper was first given as the *Annual Lecture* of the Mycological Society of America, Stillwater, Oklahoma, 1960. It is reprinted here, with the author's permission, from the *Botanical Museum Leaflets*, Harvard University, 1961, 19(7).

WHEN I RECEIVED in Mexico your President's invitation to speak here today, I knew that your Committee had made an unorthodox choice, for I am not a professional mycologist. As the appointed hour approached my trepidation kept mounting, for I saw myself an amateur about to be thrown to a pack of professionals. But your President's gracious introductory remarks, however unmerited, have put me at my ease and lead me to hope that we shall all enjoy together a mushroom foray of a rather unusual nature.

Those of you who do not know the story will be interested in learning how it came about that my wife, who was a pediatrician, and I, who am a banker, took up the study of mushrooms. She was a Great Russian and, like all of her fellow-countrymen, learned at her mother's knee a solid body of empirical knowledge about the common species and a love of them that are astonishing to us Americans. Like us, the Russians are fond of nature — the forests and birds and wild flowers. But their love of mushrooms is of a different order, a visceral urge, a passion that passeth understanding. The worthless kinds, the poisonous mushrooms — the Russians are fond, in a way, even of them. They call these “worthless ones” *paganki*, the “little pagans,” and my wife would make of them colorful center-pieces for the dining-room table, against a background of moss and stones and wood picked up in the woods. On the other hand, I, of Anglo-Saxon origin, had known nothing of mushrooms. By inheritance, I ignored them all; I rejected those repugnant fungal growths, expressions of parasitism and decay. Before my marriage, I had not once fixed my gaze on a mushroom; not once looked at a