

Drugs and Mysticism

An Analysis of the Relationship between Psychedelic Drugs and the Mystical Consciousness

by

Walter Norman Pahnke

A thesis presented

by

Walter Norman Pahnke

to

The Committee on Higher Degrees in

History and Philosophy of Religion

in partial fulfillment of the requirements

for the degree of

Doctor of Philosophy

in the subject of

Religion and Society

Harvard University

Cambridge, Massachusetts

June, 1963

© 1963 Walter Norman Pahnke

original source: http://www.maps.org/images/pdf/books/pahnke/walter_pahnke_drugs_and_mysticism.pdf
backup source: http://www.psilosophy.info/resources/walter_pahnke_drugs_and_mysticism.pdf

SUMMARY

of

THE THESIS:

DRUGS AND MYSTICISM

An Analysis of the Relationship
between Psychedelic Drug Experience
and the Mystical State of Consciousness

by

Walter Norman Pahnke

Table of Contents:**Acknowledgments****List of tables****Preface****Chapter I - INTRODUCTION****Chapter II - RELIGION AND PSYCHEDELIC SUBSTANCES: A SURVEY**

Data from History, Archaeology, Anthropology, Botany, and Psychopharmacology

Data from Clinical Research

Chapter III - THE DEFINITION OF MYSTICISM

Mystical Experience in General

The Relationship between Mystical Experience and Religious Experience

The Universality of the Characteristics of Mystical Experience

Primary Experience versus Interpretation

Phenomenological Typology of Mystical States of Consciousness

Category I: Unity

Internal Unity

External Unity

Category II: Transcendence of Time and Space

Category III: Deeply Felt Positive Mood

Category IV: Sense of Sacredness

Category V: Objectivity and Reality

Category VI: Paradoxicality

Category VII: Alleged Ineffability

Category VIII: Transiency

Category IX: Persisting Positive Changes in Attitude and/or Behavior

The Continuum of Mystical Experiences

Chapter IV - EXPERIMENTAL DESIGN

Non-drug Factors

Choice of Drug

Recruitment and Pre-testing of Subjects

Preparation and Grouping of Subjects

Experimental Procedure

Drug Preparation

Protocol During the Experimental Day

Collection of Data after the Experiment

Chapter V - DATA USED IN MATCHING OF SUBJECTS

Pre-drug Questionnaire and Interview Data

Rating Scale

Categories

Description of Average Subject

California Psychological Inventory Data

Chapter VI - DATA FROM QUESTIONNAIRES, INTERVIEWS, AND CONTENT ANALYSES

Data Relevant to the Categories of the Typology of Mysticism

Method of Presentation

Category I: Unity

Internal Unity

External Unity

Supplementary Phenomena

Category II: Transcendence of Time and Space

Category III: Deeply Felt Positive Mood

The most universal phenomena (Joy, Blessedness, and Peace)

Closely Related Phenomena (Love)

Category IV: Sense of Sacredness

Category V: Objectivity and Reality

Category VI: Paradoxicality

Category VII: Alleged Ineffability

Category VIII: Transiency

Category IX: Persisting Positive Changes in Attitude and Behavior

Changes toward self

Changes toward others

Changes toward life

Changes toward the experience

Other Data

Chapter VII - GENERAL DISCUSSION AND CONCLUSIONS

Discussion of Design

Observations of the Experimenter during the Experiment

Summary and Discussion of Data

Conclusions

Chapter VIII - SUGGESTIONS FOR FURTHER RESEARCH AND IMPLICATIONS FOR THE FUTURE

Appendix A - MEDICAL HISTORY FORM FOR VOLUNTEER SUBJECTS FOR PSILOCYBIN RESEARCH

Appendix B - PRE-DRUG EXPERIENCE QUESTIONNAIRE

Appendix C - POST-DRUG QUESTIONNAIRE WITH SIGNIFICANCE LEVELS OF THE DIFFERENCE BETWEEN SCORES OF EXPERIMENTALS AND CONTROLS

Appendix D - FOLLOW-UP QUESTIONNAIRE WITH SIGNIFICANCE LEVELS OF THE DIFFERENCE BETWEEN SCORES OF EXPERIMENTALS AND CONTROLS

Section I

Section II

Section III

Appendix E - CONTENT ANALYSIS

Content Analysis Instruction Manual for Judges

Content Analysis Score Sheet Used by Judges with the Probability for each Item that the Difference between Experimentals and Controls was due to Chance

Reliability of Judges as Determined from Kendall Rank Correlation Coefficient

Appendix F - EXPLANATION OF THE COLUMNS AND SYMBOLS USED IN THE CATEGORY TABLES

Appendix G - DATA NOT DIRECTLY RELEVANT TO CATEGORIES OF THE TYPOLOGY OF MYSTICISM

Group I: Integrative and Constructive Phenomena

Group II: Disturbing Changes in Attitude and Behavior

Group III: Physical Sensations

Group IV: Miscellaneous

Bibliography

LIST OF TABLES

1. Data Used in Matching Pairs of Subjects from Pre-Drug Questionnaires and Interviews
2. From the California Psychological Inventory: Relevant Scores Used in Matching Pairs of Subjects
3. Category I: Unity (Combination of All Subcategories)
4. Category I: Unity (Internal Unity)
5. List of Items Used to Measure Internal Unity
6. Category I: Unity (External Unity)
7. List of Items Used to Measure External Unity
8. Category I: Unity (Supplementary Phenomena)
9. List of Supplementary Phenomena of Unity
10. Category II: Transcendence of Time and Space (Combination of all Subcategories)
11. Category II: Transcendence of Time and Space
12. List of Items Used to Measure Transcendence of Time and Space
13. Category III: Deeply Felt Positive Mood (Combination of all Subcategories)
14. Category III: Deeply Felt Positive Mood (Most Universal phenomena: joy, blessedness, & peace. Less universal: Love)
15. List of Items Used to Measure the Most Universal Phenomena of Deeply Felt Positive Mood (Joy, Blessedness, and Peace)
16. List of Items Used to Measure Love

17. Category IV: Sense of Sacredness (Combination of all Subcategories)
18. List of Items Used to Measure Sense of Sacredness
19. Category IV: Sense of Sacredness (Phenomena with Implicit Indication of Sense of Sacredness. Phenomena which Explicitly Mention the Holy, Sacred, and Divine)
20. Category V: Objectivity and Reality
21. List of Items Used to Measure Objectivity and Reality
22. Category VI: Paradoxicality (Combination of all Items)
23. List of Items Used to Measure Paradoxicality
24. Category VII: Alleged Ineffability (Combination of all Items)
25. List of Items Used to Measure Alleged Ineffability
26. Category VIII: Transiency (Combination of all Phenomena. Essential Phenomena)
27. List of Items Used to Measure Transiency
28. Category IX: Persisting Positive Changes after Six Months
29. List of Items Used to Measure Persisting Positive Changes in Attitude and Behavior
30. Category IX: Persisting Changes *Toward Self* after Six Months (Persisting POSITIVE changes. Persisting NEGATIVE Changes)
31. Category IX: Persisting Changes *Toward Others* after Six Months (Persisting POSITIVE changes. Persisting NEGATIVE Changes)
32. Category IX: Persisting Changes *Toward Life* after Six Months (Persisting POSITIVE changes. Persisting NEGATIVE Changes)
33. Category IX: Persisting Changes *Toward Experience* after Six Months (Persisting POSITIVE changes. Persisting NEGATIVE Changes)
34. Summary of Significance levels Reached by Experimental Group for Categories Measuring the Typology of Mysticism
35. Summary of Data Measuring Degree of Completeness or Intensity of Categories of the Typology of Mysticism

Acknowledgments

The author wishes to express his deep gratitude for the support and encouragement of many members of the academic community who made this study possible in a troubled but promising area of research. Particular appreciation is extended to Dr. Hans Hofmann, who was a continuing source of counsel and inspiration, and to Dr. Timothy Leary, who assisted with the execution of the experiment. Through the guidance of the thesis committee, the author's perspectives have been clarified and deepened. Mr. Peter H. John contributed much time and tireless effort toward the mechanics of the manuscript. Finally, the author desires sincerely to thank all the persons who volunteered to participate in this investigation as experimental subjects or group leaders.

Preface

**This section was untitled in original work. "Preface" was added to non-sheet html version.*

This dissertation was an empirical study designed to investigate the similarities and differences between experiences described by mystics and those induced by psychedelic (or mind-manifesting) drugs such as d-lysergic acid diethylamide (LSD), psilocybin, and mescaline. First, a phenomenological typology of the mystical state of consciousness was carefully defined after a study of the writings of the mystics themselves and of scholars who have tried to characterize mystical experience. Then, some drug experiences were empirically studied, not by collecting such experiences wherever an interesting or striking one might have been found and analyzed after the fact, but by conducting double-blind, controlled experiments with subjects whose religious background and experience as well as personality had been measured *before* their drug experiences. The preparation of the subjects, the setting under which the drug was administered, and the collection of data about the experience were made as uniform as possible. The experimenter himself devised the experiment, collected data, and evaluated the results without ever having had an experience with any of these drugs.

The long and continuing history of the religious use of plants which contain psychedelic substances was surveyed. In some instances, such natural products were ingested by a priest, shaman, or witch doctor to induce a trance for revelatory purposes; sometimes they were taken by groups of people who participated in sacred ceremonies. For example, the dried heads of the peyote cactus, whose chief active ingredient is mescaline, were used by the Aztecs at least as early as 300 B.C. and are currently being employed by over 200,000 Indians of the North American Native Church as a vital part of their religious ceremonies. Both *ololiuqui*, a variety of morning glory seed, and certain kinds of Mexican mushrooms (called *teonanacatl*, "flesh of the gods") were also used for divinatory and religious purposes by the Aztecs. These practices have continued to the present among remote Indian tribes in the mountains of southern Mexico. Modern psychopharmacological research has shown the active chemicals to be psilocybin in the case of the mushrooms, and several compounds closely related to LSD in the case of *ololiuqui*. *Amanita muscaria*, the mushroom which has been used for unknown centuries by Siberian shamans to induce religious trances, does not contain psilocybin. The most important psychologically active compound from this mushroom has not yet been isolated. Other naturally-occurring plants, which are used by various South American Indian tribes in a religious manner for prophecy, divination, clairvoyance, the tribal initiation of male adolescents, or sacred feasts, are cohobe snuff made from the pulverized seeds of *Piptadenia* (a tree); the drink, *vinho de Jurumena*, made from the seeds of *Mimosa hostilis* (a tree); and the drink, *caapi*, made from *Banisteriopsis* (a jungle creeper). These last three products contain various indolic compounds which are all closely related to psilocybin, both structurally and in their psychic effects (e.g., dimethyltryptamine, bufotenine, and harmine).

Some of the researchers who have experimented with synthesized mescaline, LSD, or psilocybin have remarked upon the similarity between drug-induced and mystical experiences because of the frequency with which some of their subjects have used mystical and religious language to describe their experiences. Our study was an attempt to explore this claim in a systematic and scientific way.

The nine-category typology of the mystical state of consciousness was defined as a basis for measurement of the phenomena of the psychedelic drug experiences. Among the numerous scholars of mysticism, the work of W. T. Stace¹ was found to be the most helpful guide for the construction of this typology. His conclusion that in the mystics experience there are certain fundamental characteristics which are universal and are not restricted to any particular religion or culture (although particular cultural, historical, or religious conditions may influence both the interpretation and description of these basic phenomena) was taken as a presupposition. Whether or not the mystical experiences is "religious" depends upon one's definition of religion and was not the problem investigated. Our typology defined the universal phenomena of the mystical experience, whether considered "religious" or not.

The nine categories of our phenomenological typology may be summarized as follows:

Category I: **Unity**

Unity, the most important characteristic of the mystical experience, is divided into internal and external types, which are different ways of experiencing an undifferentiated unity. The major difference is that the internal type finds unity through an "inner world" *within* the experiencer, and the external type finds unity through the external world *outside* the experiencer.

The essential elements of *internal unity* are loss of usual sense impressions and loss of self without becoming unconscious. The multiplicity of usual external and internal sense impressions (including time and space) and the empirical ego or usual sense of individuality fade or melt away while consciousness remains. In the most complete experience this consciousness is a pure awareness beyond empirical content, with no external or internal distinctions. In spite of the loss of sense impressions and dissolution of the usual personal identity or self, the awareness of oneness or unity is still experienced and remembered. One is not unconscious, but rather very much aware of an undifferentiated unity.

External unity is perceived outwardly with the physical senses through the external world. A sense of underlying oneness is felt behind the empirical multiplicity. The subject or observer feels that the usual separation between himself and an external object (inanimate or animate) is no longer present in a basic sense, yet the subject still knows that on another level, at the same time, he and the objects are separate. Another way of expressing this same phenomenon is that the essences of objects are experienced intuitively and felt to be the same at the deepest level. The subject feels a sense of oneness with these objects because he "sees" that at the most basic level all are a part of the same undifferentiated unity. In the most complete experience a cosmic dimension is felt so that the experiencer feels in a deep sense a part of everything that is.

Category II: **Transcendence of Time and Space**

This category refers to loss of the usual sense of time and space. Time means clock time but may also be one's personal sense of his past, present, and future. Transcendence of space means that a person loses his usual orientation as to where he is during the experience in terms of the usual three-dimensional perception of his environment. Experiences of timelessness and spacelessness may also be described as an experience of "eternity" or "infinity".

Category III: **Deeply Felt Positive Mood**

The most universal elements (and therefore, the ones which are most essential in the definition of this category) are joy, blessedness, and peace. Their unique character in relation to the mystical experience is that their intensity marks them as being at the highest levels of the human experience of these feelings, and they are valued highly by the experiencers. Tears may be associated with any of these elements because of the overpowering nature of the experience. These feelings may occur at the peak of the experience or during the "ecstatic afterglow" when the peak has passed, but its effects and memory are still quite vivid and intense. Love may also be an element of deeply felt positive mood, but does not have the same universality as joy, blessedness, and peace.

1. W. T. Stace. *Mysticism and Philosophy* (Philadelphia and New York: J. B. Lippincott, 1960).

Category IV: **Sense of Sacredness**

This category comprises the sense of sacredness which is evoked by the mystical experience. The sacred is here defined broadly as that which a person feels to be of special value and capable of being profaned. The basic characteristics of sacredness is a non-rational, intuitive, hushed, palpitant response of awe and wonder in the presence of inspiring realities. No religious "beliefs" or traditional theological terminology need necessarily be involved even though a sense of reverence or a feeling that what is experienced is holy or divine may be included.

Category V: **Objectivity and Reality**

This category has two interrelated elements: (1) insightful knowledge or illumination felt at an intuitive, non-rational level and gained by direct experience and (2) the authoritativeness of the experience or the certainty that such knowledge is truly real, in contrast to the feeling that the experience is a subjective delusion. These two elements are connected because the knowledge through experience of ultimate reality (in the sense of being able to "know" and "see" what is really *real*) carries its own sense of certainty. The experience of "ultimate" reality is an awareness of another dimension not the same as "ordinary" reality (The reality of usual, everyday consciousness), yet the knowledge of "ultimate" reality is quite real to the experiencer. Such insightful knowledge does not necessarily mean an increase in facts, but rather intuitive illumination. What becomes "known" (rather than only intellectually assented to) is intuitively felt to be authoritative, requires no proof at a rational level, and has an inward feeling of objective truth. The content of this knowledge can be divided into two main types: (a) insights into being and existence in general, and (b) insights into one's personal, finite self.

Category VI: **Paradoxicality**

Accurate descriptions and even rational interpretations of the mystical experience tend to be logically contradictory when strictly analysed. For example, in the experience of internal unity there is a loss of all empirical content in an *empty* unity which is at the same time *full* and complete. This loss includes the loss of the sense of self and dissolution of individuality, yet something individual remains to experience the unity. The "I" both exists and does not exist. Another example is the separateness from, yet at the same time unity with, objects in the experience of external unity (essentially a paradoxical transcendence of space).

Category VII: **Alleged Ineffability**

In spite of attempts to tell or write about the mystical experience, mystics insist that words fail to describe it adequately or that the experience is beyond words. Perhaps the reason is an embarrassment with language because of the paradoxical nature of the essential phenomena.

Category VIII: **Transiency**

Transiency refers to duration and means the temporariness of the mystical experience in contrast to the relative permanence of the level of usual experience. There is a transient appearance of the special and unusual levels or dimensions of consciousness which are defined by our typology, but eventual disappearance and return to the more usual. The characteristic of transiency indicates that the mystical state of consciousness is not sustained indefinitely.

Category IX: **Persisting Positive Changes in Attitude and/or Behavior**

Because our typology is of a healthful, life-enhancing mysticism, this category describes positive, lasting effects which are the result of the experience. These changes are divided into four groups: (1) toward self, (2) toward others, (3) toward life, and (4) toward the mystical experience itself.

(1) Increased integration of personality is the basic inward change in the personal self. Undesirable traits may be faced in a way that enables them to be dealt with and finally reduced or eliminated. Issuing from personal integration, the sense of one's inner authority may be strengthened, and the vigor and dynamic quality of a person's life may be increased. Creativity and greater achievement efficiency may be released. There may be an inner optimistic tone with consequent increase in feelings of happiness, joy, and peace. (2) Changes in attitude and behavior toward others include more sensitivity, more tolerance, more real love, and more authenticity as a person by being more open and more one's true self with others. (3) Changes toward life in a positive direction include philosophy of life, sense of values, sense of meaning and purpose, vocational commitment, need of service to others, and new appreciation for life or the whole of creation. Life may seem richer. The sense of reverence may be increased, and more time may be spent in devotional life and

meditation. (4) Positive change toward the experience means that it is regarded as valuable and that what has been learned is thought to be useful. The experience is remembered as a high point, and an attempt is made to recapture the experience, or if possible, to gain new experiences as a source of growth and strength. Mystical experiences of others are more appreciated and understood.

The purpose of the experiment in which psilocybin was administered in a religious context was to gather empirical data about the state of consciousness experienced. In a private chapel on Good Friday twenty Christian theological students, ten of whom had been given psilocybin one-and-one-half hours before, listened over loud speakers to a two-and-one-half-hour religious service which consisted of organ music, four solos, readings, prayers, and personal meditation. The assumption was made that for experiences most likely to be mystical, the atmosphere should be broadly comparable to that achieved by tribes who actually use natural psychedelic substances in religious ceremonies. The particular content and procedure of the ceremony had to be applicable (i.e. familiar and meaningful) to the participants. Attitude toward the experience, both before and during, was taken into serious consideration in the experimental design. Preparation was meant to maximize positive expectation, trust, confidence, and reduction of fear. Setting was planned to utilize this preparation through group support and rapport friendship, an open and trusting atmosphere, and prior knowledge of the procedure of the experiment in order to eliminate, if possible, feelings of manipulation which might arise.

In the weeks before the experiment each subject participated in five hours of various preparation and screening procedures which included psychological tests, medical history, physical exam, questionnaire evaluation of previous religious experience, intensive interview, and group interaction. The twenty subjects were graduate-student volunteers, all of whom were from middle-class Protestant backgrounds and from one denominational seminary in the free-church tradition. None of them had ever taken psilocybin or related substances before this experiment. The volunteers were divided into five groups of four student each on the basis of compatibility and friendship. Two leaders who knew from past experience the positive and negative possibilities of the psilocybin reaction met with their groups to encourage trust, confidence, group support, and fear reduction. The method of reaction to the experience was emphasized (i.e. to relax and cooperate with, rather than to fight against, the effects of the drug). Throughout the preparation an effort was made not to suggest the characteristics of the typology of mysticism.

Double-blind technique was employed in the experiment so that neither the experimenter nor any of the participants (leaders or subjects) knew the specific contents of the capsules which were identical in appearance. Half of the subjects and one of the leaders in each group received psilocybin. Without prior knowledge of the effects, the remaining subjects and the other leader received nicotinic acid, a vitamin which causes transient feelings of warmth and tingling of the skin, in order to maximize suggestion for the control group.

Data were collected during the experiment and at various times up to six months afterwards. On the experimental day tape recordings were made both of individual reactions immediately after the religious service and of the group discussions which followed. Each subject wrote an account of his experience as soon after the experiment as was convenient. Within a week all subjects had completed a 147-item questionnaire which had been designed to measure phenomena of the typology of mysticism on a qualitative, numerical scale. The results of this questionnaire were used as the basis for a one-and-one-half-hour, tape-recorded interview which immediately followed. Six months later each subject was interviewed again after completion of follow-up questionnaire in three parts with a similar scale. Part I was open-ended; the participant was asked to list any changes which he felt were a result of his Good Friday experience and to rate the degree of benefit or harm of each change. Part II (52 items) was a condensed and somewhat more explicit repetition of items from the post-drug questionnaire, Part III (93 items) was designed to measure both positive and negative attitudinal and behavioral changes which had lasted for six months and were due to the experience. The individual, descriptive accounts and Part I of the follow-up questionnaire were content analyzed with a qualitative, numerical scale by judges who were independent from the experiment.

Prior to the experiment the twenty subjects had been matched into ten pairs on the basis of data from the pre-drug questionnaires, interviews, and psychological tests. Past religious experience, religious background, and general psychological make-up were used for the pairings in that order of importance. The experiment was designed so that one subject from each pair received psilocybin and one received the control substance,

nicotinic acid. This division into an experimental and control group was for the purpose of statistical evaluation of the scores from each of the three methods of measurements which used a numerical scale: the post-drug questionnaire, the follow-up questionnaire, and the content analysis of the written accounts.

The data from these three methods of measurement were presented by categories. The individual items which were used to measure each category were listed in groups for each method. The difference in score between each of the ten pairs of experimental and control subjects were analyzed statistically by the Sign Test for each item and also for the total scores of items in groups. In addition, examples of each of the nine categories were given in the form of excerpts from the descriptions which were written by the subjects.

From these data the conclusion was drawn that under the conditions of our experiment, those subjects who received psilocybin experienced phenomena which were apparently indistinguishable from, if not identical with, certain categories defined by our typology of mysticism. When analyzed statistically, the scores of the experimental subjects were significantly higher than those of the control subjects from all three methods of measurement in all categories except sense of sacredness. In all the other eight categories there were less than two chances in one hundred that the difference was due only to chance rather than to psilocybin, and in more than half the categories less than two chances in one thousand. Even sacredness showed a statistically significant difference in score (chance expectation of no more than five chances in one hundred) from both questionnaires, but not from the content analysis. The degree of completeness or intensity of the various categories was presented and discussed by comparing the consistency of score levels on individual items and groups of items among the three methods of measurement. Not all categories were experienced in the most complete way possible, although there was evidence that each category had been experienced to some degree.

In terms of our typology of mysticism, ideally the most "complete" mystical experience should have demonstrated the phenomena of all the categories in a maximal way. The evidence (particularly from the content analysis and also supported by impressions from the interviews) showed that such perfect completeness in all categories was not experienced by the experimental subjects. The phenomena of internal unity, however, were experienced to a rather complete degree; and because unity is the heart of the mystical experience, phenomena of the other categories might also have been expected to have been experienced to just as complete a degree as "by-products". In our data such a prediction was correct for transcendence of time and space, transiency, paradoxicality, and persisting positive changes in attitude and behavior toward self and life. The evidence indicated a less, although almost, complete experience of external unity, objectivity and reality, joy, and alleged ineffability. There was a relatively greater lack of completeness for sense of sacredness, love, and persisting positive changes in attitude and behavior toward others and toward the experience. Each of these last eight categories or subcategories was termed incomplete to a more or less degree for the experimentals, but was definitely present to some extent when compared with the controls. When analyzed most rigorously and measured against all possible categories of the typology of mysticism, the experience of the experimental subjects was considered incomplete in this strictest sense. Usually such incompleteness was caused by results of the content analyses.

The control subjects did not experience much phenomena of the mystical typology and even then only to a low degree of completeness. The phenomena for which the scores of the controls were closest to (although still always less than) the experimentals were: blessedness and peace, sense of sacredness, love, and persisting positive changes in attitude and behavior toward others and toward the experience.

The design of the experiment suggested an explanation for the experience of these phenomena at all by the controls. The meaningful religious setting of the experiment would have been expected to have encouraged a response of blessedness, peace, and sacredness. In the case of sacredness, implicit phenomena such as awe, wonder, mysterious fascination in spite of terror or fear, and sense of the wholly otherness of what was met in the experience showed a statistically significant score difference in favor of the experimentals compared to the controls, whereas phenomena with a more explicit indication of sacredness by the use of conventional religious or theological terminology did not show a significant difference between the two groups. In the case of love and persisting changes toward others and toward the experience, observation by the controls of the profound experience of the experimentals and interaction between the two groups on an interpersonal level appeared from both post-experimental interviews to have been the main basis for the controls' experience of these phenomena.

The experience of the experimental subjects was certainly more like mystical experience than that of the controls who had the same expectation and suggestion from the preparation and setting. The most striking difference between the experimentals and controls was the ingestion of thirty milligrams of psilocybin, which it was concluded was the facilitating agent responsible for the difference in phenomena experienced. This conclusion gave support to the claims made by others who have used psilocybin or similar drugs such as LSD or mescaline to aid in the induction of experiences which are concluded to be not unlike those described by mystics. Such evidence also pointed to the possible importance of biochemical changes which might occur in so-called "non-artificial" mystical experience (especially the effects of ascetic practices).

After and admittedly short follow-up period of only six months, life-enhancing and -enriching effects similar to some of those claimed by mystics were shown by the higher scores of the experimental subjects when compared to the controls. In addition, after four hours of follow-up interviews with each subject, the experimenter was left with the overwhelming impression that the experience had made a profound impact (especially in terms of religious feeling and thinking) on the lives of eight out of ten of the subjects who had been given psilocybin. Although the psilocybin experience was quite unique and different from the "ordinary" reality of their everyday lives, these subjects felt that this experience had motivated them to appreciate more deeply the meaning of their lives, to gain more depth and authenticity in ordinary living, and to rethink their philosophies of life and values. The data did not suggest that any "ultimate" reality was no longer important or meaningful. The fact that the experience took place in the context of a worship service with the use of symbols which were familiar and meaningful to the participants appeared to provide a useful framework within which to derive meaning and integration from the experience, both at the time and later.

The relationship and relative importance of psychological preparation, setting, and drug were important questions raised by our results. A meaningful religious preparation, expectation, and environment appeared to be conducive to positive drug experiences although the precise qualitative and quantitative role of each factor was not determined. For example, everything possible was done to maximize suggestion, but suggestion alone cannot account for the results because of the different experience of the control group. The hypothesis that suggestibility was heightened by psilocybin could not be ruled out on the basis of our experiment. An effort was made to avoid suggesting the phenomena of the typology of mysticism, and the service itself made no such direct suggestion. Psychologists of religion by their interest in psychology and presumed religious sensitivity should be well qualified to study the variables at work here.

Mention was made of the elucidating suggestiveness of our experimental findings for a better psychological understanding of the theological significance of worship and of such doctrines as the efficacy of the sacraments, the Incarnation, the Holy Spirit, the presence of Christ, and *gratia activa*. Questions were raised as to the place of the emotional factor compared to the cognitive in religious worship and as to the validity of mystical experience in terms of religious truth.

The demonstration of at least psilocybin, if not LSD and mescaline by analogy, as a tool for the study of the mystical state of consciousness suggested both further research and implications for the future. Possibilities for research in the psychology of religion with these chemicals were divided into two different kinds in relation to the aim: (1) theoretical understanding of the phenomena and psychology of mysticism and (2) experimental investigation of possible social application in a religious context.

The method suggested for the first or theoretical kind was to approach the mystical state of consciousness as closely as possible under experimental conditions and to measure the effect of variables. Suggestions were given for confirmatory studies of the work already done, additional new experiments, and better techniques of measurement. This dissertation was only a start toward this approach for a better understanding of mysticism from a physiological, biochemical, and psychological perspective.

Several experimental approaches were envisioned for the second kind of research to determine the best method for useful application in a religious context. One suggestion was the establishment of a pilot research center on the model of a religious retreat where carefully controlled drug experiments could be done by a trained research staff which would consist of psychiatrists, clinical psychologists, and ministers. Another suggestion was a study of the effect on small natural groups of four to six people who would meet periodically, both prior to and after a drug experience, for serious personal and religious discussions, Bible study, and worship in the form of prayer and meditation.

It was emphasized, however, that more research is needed at the theoretical level before such pilot research projects should be started because confirmation is first required that personally and socially useful changes in attitude and behavior are facilitated through the administration of these drugs with a meaningful religious preparation and setting. Care and caution were stressed because of the social resistance to be overcome and, most importantly, because of potential dangers involved.

Although relatively rare and not evident in our experimental results, possible harmful effects of the drug experience were discussed, such as, psychological dependence, apathy toward productive work and accomplishment, and suicide or prolonged psychosis in depressed or unstable individuals who would not be able to manage the intense emotional discharge. Research to minimize such dangers was suggested.

With full recognition of the caution and sensitivity which would be required, great promise was seen for future research in this complex and challenging area of the psychology of religion. A plea was made, however, for a serious and thoughtful examination of the sociological, ethical, and theological implications while research on the primary or theoretical level is progressing and before projects for testing useful social application in a religious context become widespread.

Chapter I

INTRODUCTION

Psychology of religion has always been interested in religious experience, and especially such intense forms as conversion and mysticism. Research has had to depend mostly on autobiographical accounts long after the fact. There have been few truly empirical studies which have analyzed these phenomena during or shortly after they have occurred.

With increasing frequency, books and articles have been appearing which make the claim that certain chemical substances (most notably mescaline, lysergic acid diethylamide, and psilocybin) are capable of inducing under appropriate conditions "mystical" or "religious" experience. Such claims have been met with skepticism from many religious people, and rightly so. The evidence presented has been, in most cases, a series of very subjective personal accounts which, while interesting, does not systematically attack the problem or prove the point.

In the first place, "mystical" or "religious" experience is too broad and general a term; it lacks precise definition as to what exactly is meant. One cannot be sure that any two persons are talking about the same thing unless the phenomena are first carefully defined. In the second place, personal accounts and subjective claims do not prove anything without controlled studies to rule out the possibility that these experiences were due to factors other than drugs. Also, such experiences usually occur under a variety of conditions and circumstances in which the number of unknown factors is so complex as to defy differentiation and elucidation. In the third place, an enthusiastic claim made by a person who has had the experience is open to the suspicion of misguided personal bias in the interpretation of what actually occurred.

This investigation was undertaken, therefore, to study in an empirical way the similarities and differences between experiences described by mystics and those induced by these drugs. The research was designed to overcome the three shortcomings which were mentioned above.

(1) A phenomenological typology of the mystical state of consciousness was carefully defined after a study of the writings of the mystics themselves and of scholars who have tried to characterize mystical experience.

(2) Some drug experiences were empirically studied not by collecting such experiences wherever an interesting or striking one might have been found and analyzed after the fact, but by conducting a double-blind, controlled experiment with subjects whose religious background and experience as well as personality were evaluated *before* their drug experiences. The preparation of the subjects, the setting under which the drug was administered, and the collection of data about the experiences, were made as uniform as possible.

(3) The experimenter himself conducted the experiment, collected the data, and wrote up the results without ever having had an experience with any of these drugs. Furthermore, the typology by which the drug experiences were measured was constructed before the drug experiment was run.

Before proceeding with a presentation of our typology of mysticism and our experimental evidence, we shall briefly review the historical use of naturally occurring psychedelic¹ substances used in connection with religious practice as well as the literature on so-called "mystical" or "religious" experiences produced by synthetic psychedelic chemicals.

1. "Psychedelic" was coined by Dr. Humphrey Osmond from the Greek and, literally translated, means "mind-manifesting" or "mind-opening" ("A review of the clinical effects of psychotomimetic agents," *Annals of the New York Academy of Sciences*, Vol. LXVI, [1957], pp. 418-434.) These substances produce changes in the mental state with the retention of mental clarity and awareness. Mescaline, psilocybin, and lysergic diethylamide (or, more simply, LSD) are the best known. Other terms which have been used are: "psychotomimetic," "hallucinogenic," "illusionogenic," "mind-distorting," etc. Although such effects may also occur, these words imply a negative evaluation, whereas the phenomena herein studied were generally regarded positively by those who experienced them.

Chapter II

RELIGION AND PSYCHEDELIC SUBSTANCES: A SURVEY

Data from History, Archaeology, Anthropology, Botany, and Psychopharmacology

Evidence from archaeology and anthropology has indicated that certain plants have been used in connection with rituals and religious ceremonies in the past; and there are groups of people who still employ them for such purposes in order to induce unusual states of consciousness. In some instances, such naturally-occurring substances are taken by a priest, shaman, or witch doctor to induce a trance for divinatory or revelatory purposes; sometimes they are taken by groups of people who are participating in sacred ceremonies.¹ Many of these plants have been found to contain compounds identical with, or closely related to, mescaline, LSD, or psilocybin.² From this evidence, some of which he has helped to discover, and from personal experience as a participant observer in certain of these ceremonies, R. Gordon Wasson has proposed the hypothesis that the use of such plants was an important factor in the origin of religious ideas among primitive peoples.³

No one knows when "mescal buttons," the spineless heads of the small, gray-green cactus, *Lophophora williamsii*, first began to be used by the Indians of Mexico. But when the Conquistadores arrived, they found that the Aztecs regarded peyote as a sacred plant and used it for ritual dances and curing ceremonies.⁴ Some sources indicate that peyote was known and used as a religious sacrament as far back as 300 B.C.⁵ The ritual and medicinal use of peyote spread northward to the United States sometime between 1700 and 1880, but there is no agreement as to whether this was by slow diffusion or because of knowledge gained while northern tribes were on warring expeditions into Mexico.⁶

Peyotism in Mexico, with its shamanistic emphasis on curing and divination, tribal dancing, and close association with agriculture and hunting, is compared and contrasted in detail by La Barre with the Mescalero or transitional peyotism of the Southwest and with Plains peyotism.⁷ According to Slotkin, by 1885 "the tribal dancing rite had been changed into the form of a religion-like rite of singing, prayer, and quiet contemplation. ... both as a symbol of the spirits being worshiped and as a sacrament."⁸ This peyotism of the Plains Indian spread farther northward from tribe to tribe by active proselytization all the way to Canada. The "Peyote Religion" of the Native American Church, which was officially founded in Oklahoma in 1918, has followed the form of Plains peyotism, which combines traditional Indian ritual and symbology with some Christian elements.⁹

The ceremony itself has some important features in common among different groups. The rite is an all-night affair from about 8:00 p.m. on Saturday until about 8:00 a.m. on Sunday. Four or five Indian officials lead the rite which usually takes place in a tipi with a fire in the center. The time is spent in prayer; songs by each participant in turn, accompanied by the water drum; ingestion of the sacramental peyote; and contemplation.

-
1. Richard Evans Schultes, "Pharmacognosy," *The Pharmaceutical Sciences* (Third Lectures Series; Austin, Texas: University of Texas College of Pharmacy, 1960), pp. 142-185.
 2. A. Hofmann, "Chemical, Pharmacological, and Medical Aspects of Psychotomimetic," *J. Exper. Med. Sci.*, Vol. V, No. 2 (September, 1961), pp. 32-34.
 3. R. Gordon Wasson, "The Hallucinogenic Fungi of Mexico: An Inquiry into the Origins of the Religious Idea among Primitive Peoples," *Botanical Museum Leaflets, Harvard University*, Vol. XIX, No. 7 (1961), pp. 137-162.
 4. Weston La Barre, *The Peyote Cult* ("Yale Univ. Publications in Anthropology," No. 19; New Haven: Yale Univ. Press, 1938), pp. 109-110.
 5. Bernardino Sahagún, *Historia General de las Cosas de Nueva España*, ed. Carlos Maria de Bustamante, (Mexico, 1829-30), cited by R. E. Schultes, "Peyote - An American Indian Heritage from Mexico," *El Mexico Antiquo*, Vol. IV, No. 5/6 (April, 1938), p. 200.
 6. Schultes, *ibid.*, pp. 201-203.
 7. Weston La Barre, *op. cit.*, pp. 29-56.
 8. J. S. Slotkin, *The Peyote Religion* (Glencos, Ill.: The Free Press, 1956), pp. 34, 28.
 9. *Ibid.*, pp. 58, 68-77.

The ritual follows a definite general pattern, but the contents of the individual prayers and songs are spontaneous. At midnight there is a water-drinking ceremony and at dawn, after a ritual "baptism" with water from the drum, a ceremonial breakfast of water, parched corn in sweetened water, fruit, and dried sweetened meat, is eaten.¹⁰

The ceremony is regarded as very sacred by the participants who feel that peyote aids contemplation by increasing the powers of introspection, sensitizing the conscience, and producing visions of great meaning. Preparation for the rite is taken seriously by the Indians who conduct themselves with due solemnity throughout the ceremony.

Proper ritual behavior includes being physically clean; spiritually pure; and psychologically humble, sincere, and in a mood for concentrated meditation.¹¹

White men who have attended these worship services and eaten peyote with the Indians in a receptive way as participant-observers, have confirmed the serious and sacred nature of the ceremony. "I had respect for the ceremony. It was reverent and well conducted."¹² "On a number of occasions, I have taken peyote in Indian ceremonies in Oklahoma, and I must say that I am impressed with the reverence and seriousness of the Indian in the practice of the peyote ceremony, the moral teachings of which are of the highest."¹³ "I have never been in any white man's house of worship where there is either as much religious feeling or decorum."¹⁴

Peyote has been found to contain mescaline and seven other anhalonium alkaloids of the isoquinoline series. One of mescaline's notable effects is the production of richly colored visual imagery.¹⁵

Another plant used for religious purposes by the Aztecs was called *ololiuqui* and has been identified as the climbing morning glory, *Rivea corymbosa*. The brown seeds were crushed and eaten, usually by an individual rather than by a group, as an aid in divination for lost objects or diagnose and treat disease. The effect was the production of revelatory visions. *Ololiuqui* was held in great veneration and was considered a powerful force in native religious philosophy. The seeds were thought to possess a deity and therefore were called "divine food." These seeds are still used in a sacred way by the Chinantec, Mazatec, Mixtec, and Zapotec Indians of Oaxaca Province.¹⁶

Badoh negro, the black seeds of another morning glory, *Ipomoea violacea*, have recently been discovered to have a similar ceremonial use in some parts of the Zapotec country.¹⁷

Both *ololiuqui* and *badoh negro* seeds have been found to contain the same three derivatives of LSD-25 (*d*-lysergic acid diethylamide): (1) *d*-lysergic acid amide, (2) *d*-isolysergic acid amide, and (3) chanoclavine. Of these derivatives, *d*-lysergic acid amide has the most similarity in psychic effects to LSD, but is much weaker on an equivalent-weight basis.¹⁸

The practice of a sacred-mushroom cult has survived in three parts of the world: Northeastern New Guinea, the mountains of Oaxaca Province in Mexico, and Western Siberia.¹⁹ Not much is known about the New Guinea cultic use, but research is in progress.

10. For a detailed description of the ritual plus diagrams of the arrangement, see Omer C. Stewart, *Washo-Northern Paiute Peyotism*, ("University of California Publications in American Archaeology and Ethnology," Vol. XL, No. 3; Los Angeles; Univ. of California Press, 1944), pp. 99-113; and Weston La Barre, *op. cit.*, pp. 57-92.

11. J. S. Slotkin, "The Peyote Way," *Tomorrow Magazine*, Vol. IV, No. 3 (1956), pp. 67-68.

12. H. Osmond, "Peyote Night," *Tomorrow Magazine*, Vol. IX, No. 2 (1961), p. 112.

13. Schultes, *The Pharmaceutical Sciences*, p. 156.

14. J. S. Slotkin, "Menomini Peyotism," *The Drug Experience*, ed. David Ebin (New York: Orion Press, 1961), pp. 237-269.

15. Schultes, *The Pharmaceutical Sciences*, p. 154. For a complete list, with a summary of physiological effects, see La Barre, *op. cit.*, pp. 138-150.

16. R. E. Schultes, *A Contribution to our Knowledge of Rivea Corymbosa. The Narcotic Ololiuqui of the Aztecs*. (Cambridge: Botanical Museum of Harvard University, 1941.)

17. R. Gordon Wasson, *op. cit.*, pp. 151-153, citing Thomas MacDougall, "Ipomoea tricolor: A Hallucinogenic Plant of the Zapotecs," *Boletin of the Centro de Investigaciones Antropológicas de Mexico*, No. 6 (March 1, 1960).

18. Hofmann, *op. cit.*, pp. 38, 46-48.

19. V. P. Wasson and R. G. Wasson, *Mushrooms, Russia and History* (New York: Pantheon Books, 1957), Vol. II, pp. 215-216.

The sacred mushrooms of Mexico were called *teonanacatl*, "flesh of the gods," by the Aztecs. In 1939 Schultes presented evidence from historical, anthropological, and botanical sources for the existence of such cultic rites.²⁰ Johnson and his party were the first modern white people to observe, but not participate in, the sacred ceremony, which has survived in Mexico from before the Spanish conquest until the present.²¹ In 1957 the Wassons presented a review of all the previous evidence along with their own discoveries. They argued that the pre-Columbian "mushroom stones" which had been found in the highlands of Guatemala really were meant to represent mushrooms as a symbol of the center of a sacred cult. The earliest of these artifacts have been dated about 1500 B.C.²²

The ceremony itself has been described in detail (with pictures) by the Wassons, who were the first outsiders to partake of the sacred mushrooms in the secret rite, which took place at night and combined ancient Indian religious tradition with some Roman Catholic symbols. The mushrooms are used in different ways in different places in the remote mountains of Oaxaca, but they are always considered sacred and used with solemnity and seriousness. The Wassons have testified in their account to the profound impression which the various ceremonies in which they have participated have made upon them.²³

Roger Heim, Director of the National Museum of Natural History in Paris, collaborated with the Wassons on later expeditions and classified most of the different sacred mushrooms as species of *Psilocybe*.²⁴ Hofmann identified and named the active ingredients as psilocybin and psilocin and was later able to synthesize both.²⁵

The mushroom ceremonies of the tribes of Western Siberia, in the area of Kamchatka, have not been studied in so great detail as those of the Mexican Indians. It is clear, however, that the *Amanita muscaria* has been used for centuries by shamans prior to ceremonial rituals, to induce oracular and ecstatic trances. These mushrooms are also eaten in group ceremonies, the religious character of which is not so evident.²⁶ *Amanita muscaria* has been found to contain muscarine and slight traces of bufotenine, but no psilocybin. Although bufotenine in sufficient quantity can affect psychic functioning in a way somewhat resembling psilocybin, there is considerable doubt that there is enough in these mushrooms to account for the effects produced.²⁷

Bufotenine has also been identified as an active ingredient of *cohoba* snuff of ancient Hispaniola, and is still used by Indian tribes. The seeds of several species of *Piptadenia*, a tree of South America and the Caribbean Islands, are pulverized and used as snuff to induce a trance-like state for prophesying, clairvoyance, and divination.²⁸ Also chemically present may be N,N-dimethyltryptamine, which is definitely responsible for the psychic activity of *vinho de Jurumena*, a drink made from the seeds of the closely related leguminose *Mimosa hostilis* and used in the magico-religious ceremonies of the Pancaru Indians in Pernambuco, Brazil.²⁹

The Indians of the Western Amazon prepare a magic drink called *ayahuasca*, *caapi*, or *yaje* (equivalent designations), from several species of *Banisteriopsis*, a jungle creeper, or in some areas, *Tetrapteryx methystica*.³⁰ This drink is used in religious manner, for prophecy, divination, the tribal initiation of male adolescents, and sacred feasts.³¹

20. Schultes, "Plantae Mexicanas II: The Identification of Teonanacatl, a Narcotic Basidiomycete of the Aztecs," *Botanical Museum Leaflets, Harvard University*, Vol. VII, No. 3 (1939), pp. 37-54.

21. Jean Bassett Johnson, *Elements of Mazatec Witchcraft* ("Ethnological Studies," No. 9; Gothenburg, Sweden: Gothenburg Ethnographical Museum, 1939) cited by Wasson and Wasson, *op. cit.*, p. 237.

22. Wasson and Wasson, *op. cit.*, Vol II, pp. 274-279.

23. *Ibid.*, pp. 287-316.

24. Wasson has listed the technical names and earliest reported sacred or divinatory use of the twenty-four Mexican hallucinogenic mushrooms which had been discovered through 1960. Nineteen out of these twenty-four were classified as species of *Psilocybe*. Wasson and Heim claimed responsibility for the discovery and classification of eighteen out of the twenty-four (R. G. Wasson, *Botanical Museum Leaflets*, Vol. XIX, pp. 159-162).

25. Hofmann, *op. cit.*, pp. 41-45.

26. W. Jochelson, "Religion and Myths of the Koryak," in *Jssup North Pacific Expedition VI* (New York: American Museum of Natural History, 1906), Vol. X, pp. 1-382, cited by Howard D. Fabing, "On Going Berserk: A Neurochemical Inquiry," *Scientific Monthly* Vol. LXXXIII, No. 5 (November, 1956), pp. 232-233. See also a fuller discussion on Wasson and Wasson, *op. cit.*, Vol. I, pp. 190-192, 194.

27. Hofmann, *op. cit.*, p. 34.

28. Schultes, *Pharmaceutical Sciences*, pp. 158-159.

29. *Ibid.*, p. 165.

30. *Ibid.*, pp. 170-179.

31. Robert S. DeRopp, *Drugs and the Mind*, (New York: St. Martin's Press, 1957), pp. 264-69.

There is still debate as to the exact nature of all the chemical compounds which are responsible for the pronounced psychic effects, but it seems very certain that harmine and its analogs, harmaline and *d*-tetrahydroharmine, are actively present.³²

Bufotenine (5-hydroxydimethyltryptamine) and N,N-dimethyltryptamine are both closely related to psilocybin (4-phosphoryloxy-w-N,N-dimethyltryptamine). Harmine and LSD also contain the same basic indole ring structure. All these compounds have a structural relationship to serotonin (5-hydroxytryptamine) which is found in the brains of warm-blooded animals and which plays an as yet unknown role in psychic functioning.³³

Data from Clinical Research

Once the active ingredients of these plants were isolated, their chemical structure determined, and a method of synthesis discovered, clinical research on their effects was facilitated. Mescaline was synthesized in 1920;³⁴ LSD in 1938 (although the mental effects were only discovered accidentally by Hofmann in 1943);³⁵ and psilocybin in 1958.³⁶ There was a surge of psychiatric interest on these drugs in the 1950's because many of their effects resembled psychotic symptoms. The drugs became known as "psychotomimetics."

Unger, in a comprehensive review article,³⁷ has shown how the possibility of rapid and positive personality change in contrast to the production of "model psychosis" began to be explored by some researchers who emphasized the importance of *extra-drug* variables in determining the type of reaction experienced by experimental subjects. These extra-drug factors included preparation and personality of the subject, a trust-filled setting in which the subject felt secure, and the expectation of both the subject and the experimenter. Unger has compared examples from William James' *Varieties of Religious Experience* with some of these experimentally-produced drug experiences.

Some of the researchers have reported that their subjects have tended to describe their drug experiences in mystico-religious language. A group of Canadian investigators, in their research on the treatment of alcoholics with LSD and mescaline, were struck by the resemblance of some of the drug experiences to religious conversions.³⁸ They also noted that the experiences which seemed to be the most therapeutic as measured by decrease in drinking were the ones which were the most intensely religious or transcendental in nature.³⁹ Sherwood *et al.*, using a similar method of preparation and administration, in their preliminary report, have described the results of these Canadian workers. Experiences which both the researchers and their subjects regarded as religious were encountered and also tended to be the most beneficial in terms of lasting therapeutic results. These experimenters classified such experiences in the "stage of immediate perception." The nature of the religious and philosophical insights reported by their patients were discussed in the appendix to their paper.⁴⁰

Chandler and Hartman have mentioned the mythological, symbolic, religious, mystical and philosophical content of the experience of some of their subjects.⁴¹

32. Schultes, *Pharmaceutical Sciences*, p. 179.

33. Hofman, *op. cit.*, pp. 47-49.

34. La Barre, *op. cit.*, p. 138.

35. Hofmann, *op. cit.*, p. 35.

36. *Ibid.*, p. 44.

37. Sanford M. Unger, "Mescaline, LSD, Psilocybin, and Personality Change: A Review," to be published in *Psychiatry*, Vol. XXVI, No. 2 (1963).

38. C. M. Smith, "Some Reflections on the Possible Therapeutic Effects of the Hallucinogens." *Quart. J. Stud. Alcohol*, Vol. XIX (1959), p. 293.

39. N. Chwelos, D. B. Blewett, C. Smith, and A. Hoffer, "Use of LSD-25 in the Treatment of Chronic Alcoholism." *Quart. J. Stud. Alcohol*, Vol. XX, 1959, pp. 580-584. See also Hoffer's comments on their work, at the Josiah Macy Foundation Conference. *The Use of LSD in Psychotherapy* (New York: Josiah Macy, Jr. Foundation Publications, 1960), pp. 114-115. Similar results were reported by J. R. MacLean, *et al.*, "The Use of LSD-25 in the Treatment of Alcoholism and Other Psychiatric Problems." *Quart. J. Stud. Alcohol*, Vol. XXII, 1961, pp. 34-45.

40. J. N. Sherwood, M. J. Stolaroff, and W. W. Harman, "The Psychedelic Experience - A New Concept in Psychotherapy." *J. Neuropsychiatry*, Vol. IV, No. 2 (Nov.-Dec., 1962), pp. 69-80.

41. A. L. Chandler and M. A. Hartman, "Lysergic Acid Diethylamide (LSD-25) as a Facilitating Agent in Psychotherapy," *A. M. A. Arch. Gen. Psych.*, Vol. II (1960), pp. 286-299.

Ditman and Whittlesey have recorded the rather numerous religious elements in questionnaire studies of their subjects after the experience. "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."⁴²

Leary found that even subjects who had no formal interest in religion found religious language most adequate in describing their psilocybin experiences:

We were dealing rather with the potentialities of expanded consciousness, the state of ego-suspension or self-transcendence. Such ancient concepts as faith, belief, trust, served as the best predictors.

Another surprising result was the frequent use of religious terminology to explain the reactions. Less than ten percent of our original sample were orthodox believers or churchgoers, yet such terms as "God," "divine," "deep religious experience," "meeting the infinite," occurred in over half of the reports.⁴³

Another clinical psychologist, Wilson Van Dusen, likened his LSD experience to the Zen Buddhist experience of *satori*, although his realizations were unexpected in the sense that he had not embarked upon the experience with such an expectation in mind.⁴⁴

Persons already interested in religion or philosophy who have personally had a meaningful drug experience have been struck by the similarity of their experiences with those described by mystics and visionaries from a variety of cultures. Aldous Huxley opened the eyes of many to such a possibility when he described his first mescaline experience in *The Doors of Perception*.⁴⁵ Some of the others who have compared their experiences favorably to religious or mystical experience are Watts,⁴⁶ Heard,⁴⁷ Jordan,⁴⁸ Graves,⁴⁹ and Dunlap.⁵⁰

Persons who have written in the field of the psychology of religion have been mixed in their reactions to drug-induced experiences as a method of approach to the study of religious or mystical experience. William James felt that in his own experiences with nitrous oxide, he approached closer than at any other time to a mystical state of consciousness. He was also extremely interested in the "anesthetic revelations" of others.⁵¹ In general he judged all religious experiences more by the pragmatic "fruits for life," rather than by their origin, and therefore was open to the study of any phenomenon, regardless of its cause.⁵² Stace has termed this "the principle of causal indifference"⁵³ and has himself included in his major work on mysticism a mescaline experience as a duly-qualifying example.⁵⁴

42. K. S. Ditman, M. Hayman, and J. R. B. Whittlesey, "Nature and Frequency of Claims Following LSD," *J. Nervous Mental Disease*, Vol. CXXXIV (1962), pp. 347-348.

43. Timothy Leary and Walter H. Clark, "Religious Implications of Consciousness-Expanding Drugs." *Relig. Educ.*, Vol. LVIII, No. 3 (1963), p. 252.

44. Wilson Van Dusen, "LSD and the Enlightenment of Zen," *Psychologia* (Kyoto), Vol. IV, No. 1 (March, 1961), pp. 11-16.

45. Aldous Huxley, *The Doors of Perception* (New York: Harpers, 1954). Huxley also stimulated a storm of protest from those who did not agree with him. One of the most immediate and critical attacks was by a Roman Catholic, R. C. Zaehner, in "Menace of Mescaline," *Blackfriars*, Vol. CXXXV (July-August, 1954), pp. 310-321. Zaehner followed this by a scholarly book, *Mysticism, Sacred and Profane: An Inquiry into some Varieties of Praeternatural Experience* (New York: Oxford Univ. Press, 1957). Since 1954, Huxley has continued to expound his position. A good summary of his views are found in his essay "Visionary Experience," in *Clinical Psychology*, ed. G. S. Nielsen (Proceedings of the XIV Int. Cong. of Appl. Psychol., Vol. IV; Copenhagen: Munksgaard, 1962), pp. 11-35.

46. Alan W. Watts, "The New Alchemy," in *This is It, and Other Essays on Zen and Spiritual Experience* (New York: Pantheon Books, 1960), pp. 127-153. See also his *The Joyous Cosmology: Adventures in the Chemistry of Consciousness* (New York: Pantheon Books, 1962).

47. Gerald Heard, "Can This Drug Enlarge Man's Mind?" *Horizon Magazine*, Vol. V, No. 5 (May, 1963), pp. 28-31, 114-115.

48. G. Ray Jordan, Jr., "LSD and mystical experiences," *J. Bible and Religion*, Vol. XXXI, No. 2 (April, 1963), pp. 114-123. This statement is more explicit than his earlier "Reflections on LSD, Zen Meditation, and Satori," *Psychologia* (Kyoto), Vol. V, No 3 (September, 1962), pp. 124-30.

49. Robert Graves, "A Journey to Paradise," *Holiday*, Vol. XXXII, No. 2, (1962), pp. 36-37, 110-111.

50. Jane Dunlap, *Exploring Inner Space* (New York: Harcourt, Brace & World, 1961).

51. *Varieties of Religious Experience* (Modern Library Edition; New York: Random House, 1902), pp. 378-384.

52. *Ibid.*, p. 21.

53. W. T. Stace *Mysticism and Philosophy* (Philadelphia and New York: J. B. Lippincott, 1960), pp. 29-31.

54. *Ibid.*, pp. 71-77.

Leuba had a chapter entitled "Mystical Ecstasy as Produced by Physical Means" in which he discussed the effects produced by alcohol, opium, hasheesh, and peyote, but he considered such experiences as lower forms of mysticism, and did not do any experimental work with these substances.⁵⁵ Laski⁵⁶ and Walker⁵⁷ discuss the issue, but tend to be more interested in, and favorable toward, "natural" experiences than "artificial." Zaehner, referred to in footnote 45, regarded such induced states as much nearer to psychotic than religious experience, and argued for the difference rather than similarity to Christian mysticism. Havens has presented a thoughtful and conservatively favorable review of the problem in relation to the religious experience of Quakers.⁵⁸ Clark has suggested the opportunities and challenges which such a research tool provides for future work in a relatively unexplored area in the psychology of religion.⁵⁹

55. J. Leuba, *The Psychology of Religious Mysticism* (New York: Harcourt, Brace, 1925), pp. 8-36.

56. Margarita Laski, *Ecstasy: A Study of Some Secular and Religious Experiences* (London: The Cresset Press, 1961), pp. 263-273.

57. Kenneth Walker, *The Conscious Mind: A Commentary on the Mystics* (London: Rider & Co., 1962), pp. 124-140.

58. Joseph Havens, "Memo to Quakers on the Consciousness-Changing Drugs." (Unpublished.)

59. Leary and Clark, *op. cit.*, pp. 254-56.

Chapter III

THE DEFINITION OF MYSTICISM

The purpose of this chapter is to define what we meant by the term, mystical state of consciousness. A typology of basic characteristics of mystical experience in the broad sense is developed. The broad sense means a basic typology which is universal and holds true for mystical experience in different cultures and religions. Before defining the typology in detail, we shall discuss mystical experience with regard both to its relationship to religious experience and to the universality of its occurrence.

Mystical Experience in General

The Relationship between Mystical Experience and Religious Experience

A simple identification of religious experience and mystical experience fails to take into account the many definitions of religion. Religions vary in their emphasis upon mysticism, although there is a tendency, especially among psychologists of religion who have been interested in the dramatic and intense phenomena of the mystical experience, to make the mystical element the most important characteristic of religion.¹

All religious experience is not necessarily mystical in the sense of our definition of mystical experience as given below. Pratt, for example, divides religion into four kinds or aspects, of which the mystical is only one, the other three being the traditional, the rational, and the practical or moral.² Even when quite emotionally meaningful, participation in a particular religion by such practices as observance of religious laws, intellectual belief in a certain creed or theology, institutional membership, and attendance at rites and rituals, may not result in or be the product of mystical experience.

On the other hand, all mystical experience is not necessarily religious. Again, of course, much depends on how one chooses to define religion. If one makes the concept of a "personal God" central in the definition of religion, many forms of mystical experience could not be considered religious. The phenomena of mystical experience, for example, may occur outside the framework of any formal religion, with no reference to any articulated theology.

The problem is by-passed or merely indicated, rather than solved, by broadening the definition of religion to include any experience which would qualify as mystical by our criteria. Tillich, for example, considers as religious an experience which gives ultimate meaning, structure, and aim to human experience or in which one is concerned ultimately.³ Wach gives a similar definition of religious experience as a total and intense existential response to what is experienced as Ultimate Reality (i.e., nothing finite) and adds the practical criterion that the experience must compel to action.⁴

Rather than attempting to define religion and religious experience in order to differentiate precisely the relationship between religious and mystical experience, we have indicated the nature of the problem and the error of loosely speaking of religious and mystical experience as if the two were always synonymous.

-
1. William James reflects this attitude by his preference for religion which is an "acute fever" rather than a "dull habit" (*op. cit.*, p. 8).
 2. J.B. Pratt, *The Religious Consciousness: A Psychological Study* (New York: Macmillan, 1921), p. 14. Compare a similar discussion of the elements of religion by R. M. Thouless, *An Introduction to the Psychology of Religion* (Cambridge: Cambridge University Press, 1956), pp. 12-15. Pratt includes all four divisions in his definition of religion, which is as follows: "the serious and social attitude of individuals or communities toward the power or powers which they conceive as having ultimate control over their interests or destinies" (*op. cit.*, p. 2). Note Thouless's similar definition of religion: "a felt practical relationship with what is believed in as a superhuman being or beings" which are "felt to be greater than man or may be looked up to by him" (*op. cit.*, p. 4).
 3. Paul Tillich, *Systematic Theology* (Chicago: University of Chicago Press, 1951), Vol. I, pp. 11-14. It is Tillich's opinion that what is truly ultimate can be best symbolized by Jesus who is called the Christ, in Christian theology (pp. 15-18).
 4. Joachim Wach, *The Comparative Study of Religions*, (Columbia Paperback Edition; New York: Columbia University Press, 1961), pp. 30-36. See also his important work, *Types of Religious Experience: Christian and Non-Christian* (Chicago: The University of Chicago Press, 1951), pp. 32-33.

Our attention will be focused upon the nature of the mystical experience, whether the experience be religious or not.

The Universality of the Characteristics of Mystical Experience

Many of the well-known commentators on and analysts of mystical experience have made the presupposition that there are certain fundamental characteristics of the experience itself which are universal and are not restricted to any particular religion or culture, although particular cultural, historical and religious conditions may influence both the understanding and the description of the essential mystical experience.

James lists four common or universal characteristics of mystical experience: (1) ineffability, or the feeling that the experience cannot adequately be expressed with words; (2) noetic quality, or the certainty that the knowledge gained as insight is true; (3) transiency, or the impermanence of the mystical state; (4) passivity, or the feeling that one is not acting but, rather, being acted upon.⁵ His examples range from persons with no particular religious allegiance to monks and nuns, but the cases in his series possess these common characteristics. Pratt provides a broad and universal definition of mysticism as a consciousness of Beyond, or the sense or feeling of the presence of a being or reality, via other means than sense perception or reason.⁶ He distinguishes between mild and extreme types. The mild is characterized by (1) ineffability, (2) noetic certainty, especially of the presence of the Beyond, and (3) joy and calm.⁷ The extreme type is exemplified by the unitive state of ecstasy which includes the phenomena of (1) suddenness, (2) passivity, (3) loss of sense impressions of the outside world, (4) noetic insight or knowledge or acquaintance which combines feeling and cognitive intuition, (5) ineffability, (6) immediate intuition of the Beyond, or God's presence, and (7) intense, ecstatic joy and love.⁸ He takes his examples from both Eastern and Western sources.

Bucke has collected cases from various times and cultures with the following universal criteria of cosmic consciousness": (1) suddenness or instantaneousness, (2) photism or subjective light, (3) moral elevation, with an emotion of joy, assurance, and triumph, (4) ineffable intellectual illumination, (5) sense of immortality, (6) loss of the fear of death, (7) loss of the sense of sin, (8) usual occurrence between the ages of 30-40, and (9) added charm to the personality after the experience.⁹

Underhill gives four universal tests which must be satisfied by any example of true mysticism and which penetrate behind the particular descriptive symbolism employed.¹⁰ For her mysticism must: (1) be an organic life-process in which the whole self is involved in an active, practical, and intense experience (this in contrast to an intellectual opinion which can be merely passive and theoretical), (2) have a wholly transcendental and spiritual aim (i.e., the mystic is interested in a realm of ultimate reality, the changeless One, beyond ordinary, everyday reality); (3) know this One not merely as the Reality of all that is, but also as a living personal object of Love which draws one's whole being under the guidance of the heart - love is defined as the driving power and deep-seated desire of the soul toward its Source and is "the ultimate expression of the self's most vital tendencies";¹¹ (4) have a Living Union with this One involving the liberation of a new, or rather latent, form of consciousness which is called "ecstasy" or better, the Unitive State.

Clark also makes the assumption that there are universal characteristics of the mystical state of consciousness. He lists and comments upon those mentioned by James and Underhill and adds (1) that "the language of mysticism makes extensive use of figures of speech and paradox,"¹² (2) that the mystics "regard

5. James, *op. cit.*, pp. 371-372.

6. Pratt, *op. cit.*, pp. 337-341.

7. *Ibid.*, pp. 346-362.

8. *Ibid.*, pp. 394-429.

9. R. M. Bucke, *Cosmic Consciousness: A Study in the Evolution of the Human Mind* (Philadelphia: Innes & Sons, 1901), pp. 60-62.

10. E. Underhill, *Mysticism: A Study in the Nature and Development of Man's Spiritual Consciousness* (New York: Meridian, 1955), pp. 81-94.

11. *Ibid.*, p. 85.

12. W. H. Clark, *The Psychology of Religion: An Introduction to Religious Experience and Behavior* (New York: Macmillan, 1955), pp. 81-94.

what the ordinary man considers the Real as the Unreal, and what the ordinary person considers the Unreal as the Real"¹³ and (3) that the mystic has a "tendency toward extravagance in behavior" which expresses his "desire for integration of the psychic life."¹⁴

Johnson universally defines mystical experience as the state of illumination in which the sense of separateness, of individuality, is to a great degree lost and which has positive significance, value, and certainty for the experiencer.¹⁵ Such experiences are divided into the slighter and the more profound types. He finds the following four common features of the slighter type:

(a) The illumination or radiance which is seen to infuse everything 'without' is felt to come from 'within.' (b) The sense of belonging to a new and greater unity is always felt. That which is seen forms a part of a larger whole (c) The emotional tones are always supremely attractive: pulsing light, livingness, joy, peace, happy wonder. Through them, and interwoven, is an enormously enhanced sense of the supreme values, and the most adequate description usually seems to the experiencer to be a 'revelation of God.' (d) Words fail to express the experience, and the terms used are known to be only symbols and analogies.¹⁶

He lists the universal features of the more profound type in two groups:

1. Those who have had the more profound type of mystical experiences, no matter in what age or to what race or creed they have belonged, tell us the *same* fundamental things: the sense of separateness vanishes into an all-embracing unity, there is certain knowledge of immortality, there is an enormously enhanced appreciation of values, and there is knowledge that at the heart of the universe is Joy and Beauty. This unanimity of testimony is quite remarkable.
2. Those who have known such an experience are always profoundly impressed by its significance as a revelation of truth. There is from then onwards, not the satisfaction of an intellectual answer to life's ultimate questions, but a serenity born of the knowledge that all is well, and that the secret purpose of the universe is good beyond all telling.¹⁷

Johnson quotes experiences which are described in traditional religious language as well as those which do not mention orthodox religious symbols yet still have the universal phenomenology covered by his description. Walker considers the mystical consciousness a state of Universal Consciousness which is a higher level than the usual self-consciousness of everyday existence. Characteristics include an intuitive, experiential realization that "the small individual self has *always* been a part of the great Universal Self," a "melting away of the individual 'self' into 'boundless being'"¹⁸ and "a world completely *outside* of time."¹⁹ His chief examples are Edward Carpenter, Wordsworth, Sri Aurobindo, R. M. Bucke, Jacob Boehme, H. G. Wells, Plotinus, Meister Eckhart, and his own personal experience. His quote from Ouspensky demonstrates his own presupposition and that of the other writers mentioned above:

If we follow neither the religious nor the scientific views, but try to compare descriptions of the mystical experiences of people of entirely different races, of different periods and of different religions, we shall find a striking resemblance amongst these descriptions, which can in no case be explained by similarity of preparation, or by any resemblances in ways of thinking and feeling. In mystical states, utterly different people, in utterly different conditions, *learn* one and the same thing, and what is still more striking, in mystical states there is no difference of religion. All the experiences are absolutely identical: the differences can be only in the language and in the form of discipline.²⁰

13. *Ibid.*, p. 273.

14. *Ibid.*, pp. 274-275.

15. R. C. Johnson, *The Imprisoned Splendor: An Approach to Reality, based upon the significance of data drawn from the fields of Natural Science, Psychological Research and Mystical Experience* (New York: Harper, 1953), pp. 300-302.

16. *Ibid.*, pp. 324-325.

17. *Ibid.*, pp. 320-321.

18. Walker, *op. cit.*, p. 40.

19. *Ibid.*, p. 41.

20. *Ibid.*, pp. 92-93, quoting from P. D. Ouspensky, *A New Model of the Universe* (London: Routledge & Kegan Paul, 1937), p. 51.

Although Suzuki doesn't make the claim that the *satori* experience is the same as other mystical states of consciousness, his description has many of the same universal characteristics given by other writers on mysticism: (1) irrationality which defies intellectualization, conceptualization, or logical explanation, (2) intuitive insight, (3) authoritativeness or finality, (4) affirmation or positive acceptance of all things that exist, (5) sense of the beyond or a melting away into something indescribable and of quite a different order than that to which one is accustomed, (6) impersonal tone, (7) feeling of exaltation, (8) momentariness - abruptness and transitoriness.²¹

W. T. Stace in *Mysticism and Philosophy* has surveyed the mystical literature to make his case for the universality of the basic phenomena of mystical experience. He has given examples from the writings of those who have personally experienced mystical states of consciousness to support what he calls the universal core of mystical experience. He has distinguished between introvertive and extrovertive types which both "culminate in perception of, and union with, a Unity or One though this end is reached through different means in the two cases."²² He has listed seven characteristics of each type but five of the seven are the same. These five common elements are:

1. Sense of objectivity or reality, (comparable to James' noetic quality which leads to certainty of the objective reality of what is learned in the experience).
2. Feelings of blessedness, joy, peace, happiness, satisfaction, etc.
3. Feeling that what is apprehended is holy, divine, and sacred.
4. Paradoxicality.
5. Alleged by mystics to be ineffable.²³

The introvertive type as the name suggests is inner-directed and its essence is the experience of undifferentiated unity which is "... the Unitary Consciousness, from which all the multiplicity of sensuous or conceptual or other empirical content has been excluded, so that there remains only a void and empty unity."²⁴ The Unitary Consciousness is by definition nonspatial and nontemporal. The extrovertive type is outer-directed and is experienced through the physical senses in or through the multiplicity of objects. The essential characteristic for this type is "... the unifying vision expressed abstractly by the formula 'All is One.'" The One is apprehended "... as being an inner subjectivity in all things, described variously as life, or consciousness, or a living Presence."²⁵ Spatiality is paradoxically preserved, but the normal sense of time may be lost.

The extrovertive and introvertive are not mutually exclusive and may occur in the same mystic.²⁶ Stace shows how Meister Eckhart is an example of this.²⁷ Brinton's study of Jacob Boehme supports Stace's point. Boehme harmonized the in-going and out-going wills by going from one goal to the other and back in a kind of dynamic equilibrium.²⁸ Stace maintains that although the extrovertive and the introvertive One are experienced in different ways, they are identical.²⁹

Primary Experience versus Interpretation

After a general discussion of the problem of the universal core Stace quotes the writings of representative mystics from a wide variety of cultures to substantiate the extrovertive and introvertive types and each of their common characteristics. He always tries to reach behind individual interpretations which he feels are conditioned by various theological and intellectual frames of reference, to the raw experience itself. Again and

21. D. T. Suzuki, *Zen Buddhism: Selected Writings of D. T. Suzuki*, ed. William Barrett (Doubleday Anchor Edition; Garden City, New York: Doubleday, 1956), pp. 103-108.

22. Stace, *op. cit.*, p. 62.

23. *Ibid.*, pp. 13-132.

24. *Ibid.*, p. 110.

25. *Ibid.*, p. 79.

26. *Ibid.*, pp. 63-65.

27. *Ibid.*, pp. 98-99.

28. H. H. Brinton, *The Mystic Will: Based on a Study of the Philosophy of Jacob Boehme* (New York: Macmillan, 1930), p. 21.

29. *Ibid.*, p. 152, 273-274.

again he emphasizes his distinction between primary phenomenology and interpretations conditioned by culture. He feels that his characteristics of the universal core are the basic phenomenology of mystical experience stripped bare of interpretation.³⁰

Stace's distinction between the primary experience and the interpretation is either stated or implied by other writers who attempt to abstract general characteristics of the mystical experience from the phenomenological accounts thereof. Some examples are as follows:

Such symbolism as this - a living symbolism of experience and action, as well as of statement - seems almost essential to mystical expression. The mind must employ some device of the kind if its transcendental perceptions - wholly unrelated as they are to the phenomena with which intellect is able to deal - are ever to be grasped by the surface consciousness. Sometimes the symbol and the perception which it represents become fused in that consciousness, and the mystic's experience then presents itself to him as 'visions' or 'voices' which we must look upon as the garment he has himself provided to veil that Reality upon which no man may look and live. The nature of this garment will be largely conditioned by his temperament - as in Rolle's evident bias toward music, St. Catherine of Genoa's leaning toward the abstract conceptions of fire and light - and also by his theological education and environment. Cases in point are the highly dogmatic visions and auditions of St. Gertrude, Suso, St. Catherine of Siena, the Blessed Angel of Foligno; above all of St. Teresa, whose marvellous self-analyses provide the classic account of these attempts of the mind to translate transcendental intuitions into concepts with which it can deal. (underlinings mine)³¹

We must however, be careful to distinguish between the content of the intuition which takes place during the ecstasy, and the truths which the mystic comes to believe as a result of reflecting upon his experience.³²

I recognize the fact that those who have enjoyed mystical experiences are likely to describe them afterwards in terms of their own religion, and that this entails their making use of the terminology and the beliefs of the religion in which they happen to have been brought up.³³

This mystical experience, in its essential aspects as *experience*, is pretty much the same through the centuries and in all lands. What accounts for the historical *types* is, there fore, not the nature of the experience as such is, therefore, not the nature of the experience as such, but the prevailing theological or metaphysical conceptions of the time and place, which color the *expectation* of the given mystic, and form the background setting through which he interprets his illumination.³⁴

The fact is that the mystical feeling of enlargement, union, and emancipation has no specific intellectual content whatever of its own. It is capable of forming matrimonial alliances with material furnished by the most diverse philosophies and theologies, provided only they can find a place in their framework for its peculiar emotional mood.³⁵

As far as the psychology of satori is considered, a sense of the Beyond is all we can say about it; to call this the Beyond, the Absolute, or God, or a Person is to go further than the experience itself and to plunge into a theology or metaphysics.³⁶

It is recognized that not all writers on mysticism accept the presupposition that mystical experience has a universal core which is basically the same but which is interpreted differently according to time, place, personality, and culture. We are not speaking of Rudolph Otto who in *Mysticism, East and West* might seem to

30. See especially pp. 62-133, 153-182.

31. Underhill, *op. cit.*, pp. 78-79. See also her *Essentials of Mysticism* (Dutton Everyman Paperback Edition; New York: E. P. Dutton, 1960), pp. 4, 18-19.

32. Pratt, *op. cit.*, p. 407.

33. Walker, *op. cit.*, pp. 156-157.

34. Rufus Jones, *The Radiant Life* (New York: Macmillan, 1944), p. 100.

35. James, *op. cit.*, pp. 416-417.

36. Suzuki *op. cit.*, p. 106.

take the position that mysticism is *not* fundamentally one and the same, and therefore, that the essence of the experience is not independent of circumstances and conditions. For example, he says:

It is still very generally held that mysticism, however diverse the sources from which it springs is fundamentally one and the same, and as such is beyond time and space, independent of circumstances and conditions. But this seems to me to contradict the facts. Rather, I hold that, in spite of the similarity of terms, which can be surprising enough, there is a diversity in mystical experience which is not less than that of religious feeling in general.³⁷

Diversity which he emphasizes here is the variety of expression or interpretation. For example: he distinguishes between the soul-mysticism of Yoga and Buddhism and the God-mysticism (mysticism of union) of Theism.³⁸ He points to subtle differences between Eckhart and Sankara in use of metaphors and ethical content reflected in doctrines of salvation, justification, sanctification, and grace as well as in valuating of the world.³⁹ He devotes the longest part of his discussion, however, to a comparison of their similarities, both in regard to their experiences and to their metaphysical speculations.

In terms of Stace's position, these differences are mainly differences of interpretation or intellectual expression rather than of the primary experience itself. In fact, Otto also makes this distinction when he gives the conclusions of his study:

We maintain that in mysticism there are indeed strong primal impulses working in the human soul which as such are completely unaffected by differences of climate, of geographical position or of race. These show in their similarity an inner relationship of types of human experience and spiritual life which is truly astonishing. Secondly, we contend that it is false to maintain that mysticism is always and everywhere one and the same quantity. Rather, there are within mysticism many varieties of expression which are just as great as the variations in any other sphere of spiritual life, be it in religion generally, or in ethics or in art. (underlining mine)⁴⁰

Many of Stace's categories are illustrated as basic to the experience of both Eckhart and Sankara even when Otto is trying to show their metaphysical differences. For example, the introvertive and extrovertive types are discussed by Otto as "the two ways: the mysticism of introspection and the mysticism of unifying vision" which interpenetrate and become one in both Sankara and Eckhart.⁴¹ Both describe an experience of unity with a losing of self and a submergence into the absolute, unqualified, one divinity.⁴² The category of objectivity and reality is illustrated by the discussion of their common intuitive mystical knowledge.⁴³ Both hold to a metaphysical theism which resulted from a personal experience of the holy, sacred, and divine.⁴⁴ Both give evidence of the experience of the exalted feeling of mystical, numinous rapture, although Otto feels that Eckhart also paradoxically emphasizes humility as result of the experience of numinous majesty.⁴⁵

The Otto of *The Idea of the Holy* is closer to Stace's approach because here Otto describes the phenomenology of what he calls the "characteristic notes of mysticism in all its forms, however otherwise various in contents."⁴⁶ The universal features he lists are (1) annihilation of the self or rejection of the delusion of selfhood by means of a consciousness of the transcendent as the sole and entire reality⁴⁷ and (2) "Identification in different degrees of completeness, of the personal self with the transcendent Reality ... the Something that

37. R. Otto, *Mysticism East and West: A Comparative Analysis of the Nature of Mysticism* (Living Age Edition; New York: Meridian, 1957), p. 139. See also pp. 162, 165, 168, 206.

38. *Ibid.*, pp. 142-146.

39. *Ibid.*, pp. 181-211.

40. *Ibid.*, p. XVI.

41. *Ibid.*, pp. 38-69.

42. *Ibid.*, p. 166.

43. *Ibid.*, pp. 35-67.

44. *Ibid.*, pp. 103-136.

45. *Ibid.*, pp. 181-182.

46. R. Otto, *The Idea of the Holy: An Inquiry into the non-rational factor in the idea of the divine and its relation to the rational* (Galaxy Edition; New York: Oxford University Press, 1958), pp. 21-22.

47. *Ibid.*, p. 21.

is at once supreme in power and reality and wholly non-rational."⁴⁸

R. C. Zaehner clearly does not agree with Stace's argument for the universal core and in *Mysticism, Sacred and Profane* argues against such a view throughout.⁴⁹ Zaehner goes one step beyond Otto's analysis by stating: "But there is not only a difference in tone between Eckhart and Sankara, which Otto himself fully brought out; there is obviously a fundamental difference in the experiences which must have formed the basis of the two men's writings" (underlining mine).⁵⁰ In his analysis of mystical experience Zaehner distinguishes three types which he insists are quite distinct: (1) the pan-en-henic (all-in-one) experience found especially in nature mystics, (2) the Atman-Brahman union of the individual self with the Absolute (in this experience the phenomenal world is superceded), and (3) Christian theistic mystical union with God by love (in this experience the self remains a distinct entity).⁵¹

Zaehner admits his own Roman Catholic bias.⁵² He implies that Christian theistic mysticism at its best is true supernatural union with God, whereas the Atman-Brahman experience, although theistic, reaches only self-isolation in rest and emptiness within the self. For him the pan-en-henic experience is definitely inferior to either of the other two, because to admit that nature mysticism is a form of union with God would be pantheism and would identify God with the evil in nature.⁵³

The pan-en-henic and Atman-Brahman types correspond to Stace's extrovertive and introvertive experiences of unity with the One, although he would maintain that the same One or Absolute was being experienced in both types.⁵⁴ Stace argues that the Atman-Brahman and Christian theistic types represent the same basic experience and that culture and individual conditioning account for the apparent differences.⁵⁵ Here again Stace insists that interpretation not be confused with the primary experience.

No one would deny that there are many varieties of expression and interpretations of mystical experience. This study is not an attempt to settle the debate as to whether there is a universal core of primary experience interpreted differently because of differences in cultural situation and individual conditioning or whether there are many varieties of expression and interpretation because different cultural situations and individual conditioning actually produce different experiences which have no universal, basic core of identity. The former position is taken as our presupposition on the basis of the work of Stace and the others mentioned above.

As a tool of evaluation for the empirical data from drug experiences, a typology of the phenomenology of mystical experience is developed below. Stace's position has been used as a presupposition in two ways. First, his list of the basic characteristics of the universal core of mystical experience has been used as a framework which has been enriched and expanded from other thinkers who have dealt with the same problem. Second, his distinction between primary experience and the interpretation of this experience points toward an ideal of phenomenological analysis. The reservation must be added that perhaps it is impossible ever to reach pure uninterpreted experience.

48. *Ibid.*, p. 22.

49. The first part of the final chapter gives a clear statement of his position (*op. cit.*, pp. 198-199).

50. *Ibid.*, p. 182.

51. *Ibid.*, pp. 28-29.

52. *Ibid.*, p. XII.

53. *Ibid.*, p. 200.

54. Stace, *op. cit.*, p. 152.

55. *Ibid.*, p. 97 (footnote 44).

Phenomenological Typology of Mystical States of Consciousness

Category I: Unity

Category of unity is divided into internal and external types, which are different ways of experiencing and undifferentiated unity. The major difference is that internal unity is experienced through an "inner world" *within* the experienter, and external unity is perceived with the senses through the external world *outside* the experienter.⁵⁶ The experiences themselves are phenomenologically different. Both are experiences of unity and therefore are listed as subcategories.

Internal Unity

The essence of internal unity is the direct experience of an undifferentiated unity. This unity comes with the loss of the multiplicity of all particular sense impressions. There is a fading or melting away into pure awareness with no empirical distinctions or particular content except the awareness of the unity itself.⁵⁷ One is beyond the self-consciousness of sense impressions or empirical ego, yet one is not unconscious, but very much aware of the undifferentiated unity. There is a loss of the sense of finite selfhood and personal separate identity, but experience is not extinguished: it has its content the pure awareness of the empty, yet full and complete unity. During the experience there is a dissolution of individuality with no internal or external distinctions, yet the person is aware of the experience.⁵⁸ After the experience such a phenomenon can be remembered. Such a non-empirical, inner experience is by definition non-temporal and non-spatial.⁵⁹ These phenomenological descriptions contain several paradoxes which Stace maintains are necessary in order to give as adequate a representation in words as is possible of an experience which the mystics allege to be ineffable. He calls the loss of the empirical ego with the retention of awareness of the unity one example.⁶⁰ The undifferentiated unity itself is called empty, yet full and complete; is considered both impersonal and personal; is experienced both as totally inactive, static, and motionless and as dynamic, creative, and active. Stace calls this the vacuum-plenum paradox referring to the negative and positive aspects respectively. These aspects are not mutually exclusive, but one side may be emphasized more than the other due to culture, personality, and intellectual frame of reference. Stace gives examples from representative mystics of the world.⁶¹

Such a discussion of paradox involves the question of interpretation. Interpretations are handles with which to get a hold on and deal with the experience conceptually. We are interested chiefly in the universal core of primary experience. Some mention, however, of the various interpretations which different mystics have used to integrate their experiences into their philosophies of life or theological frameworks is necessary in order to recognize the basic experience more easily.

According to Stace, the closest to the pure experience of internal unity with no interpretation added is the Hinayana Buddhist experience of Nirvana which is revealed and participated in when the stream of ordinary conscious states is gradually stopped. Nirvana "transcends both the individual consciousness and the space-time world."⁶² Hinayana Buddhism stops with this experience of pure undifferentiated unity and makes no interpretation of what this experience is other than to call it Nirvana. The mystical traditions of all the other higher cultures go at least one step further and interpret this unity as the pure ego or the unity of the self. The Samkhya, Yoga, and Jaina philosophies stop here, but other cultures then push the interpretation and identify the pure undifferentiated unity which is reached after transcendence of the usual sense of self or empirical ego with something greater-than-self or all-encompassing.⁶³

56. Internal and external unity correspond to Stace's introvertive unitary consciousness and extrovertive unifying vision, respectively (*op. cit.*, pp. 63-133).

57. Stace, *op. cit.*, pp. 86-87.

58. *Ibid.*, pp. 111-123, 245.

59. *Ibid.*, p. 110.

60. *Ibid.*, pp. 224-245.

61. *Ibid.*, pp. 163-178.

62. *Ibid.*, p. 127.

63. *Ibid.*, pp. 123-127.

Suzuki describes the *satori* or enlightenment experience of Zen Buddhism as a dissolution of the usual sense of individuality by melting "away into something indescribable, something which is of a quite different order from what I am accustomed to."⁶⁴ It is this something of a quite different order which has received many names. For example, for Tennyson, "individuality itself seemed to dissolve and fade away into boundless being." (underlying mine)⁶⁵ For Koestler, "the I ceases to exist because it has, by a kind of mental osmosis, established communication with, and been dissolved in the universal pool."⁶⁶ J. A. Symonds, the nineteenth century man of letters, called this underlying or essential consciousness "a pure absolute, abstract Self."⁶⁷ Plotinus described the state of simple unity as a merging with the Supreme or the One.⁶⁸ It is Stace's opinion that the Hinduism of the Upanishads and the advaita Vedanta identify the pure ego with the Universal or Cosmic Self (Brahman or the Absolute)⁶⁹ and that Mahayana Buddhism uses the concept of Sunyata or the pure Void for the same basic experience.⁷⁰

According to Stace, orthodox Islam, Christianity and Judaism have emphasized the transcendence of God and condemned pantheism or identity with God as heresy. Their mystical traditions reflect this emphasis and regard the experience of unity as something less than identity with God.⁷¹ In the Sufi mysticism of Islam, *fana* (passing away or melting away into the Infinite is correlative to *baga*, "which means the survival in God of the soul which has experience fana."⁷² Orthodox Christian mysticism uses such terms as union with God, the Divine Unity, or spiritual marriage, but is careful to qualify such statements with the explanation that "the individual soul does not wholly pass away into God, but remains a distinct entity."⁷³ Stace regards Judaism as the least mystical of all the great world religions. Judaism insists on the greatest gulf between creature and Creator, yet does not rule out relationship between the individual and God. The Haisidic mystics are closest in phenomenological description to an experience of internal unity, but Stace does not consider them the major trend in Judaism.⁷⁴

With the example of Martin Buber, the Jewish philosopher, we come back to the basic experience, free from interpretation.

"Now from my own unforgettable experience I know well that there is a state in which the bonds of the personal nature of life seem to have fallen away and we experience an undivided unity." (underlining mine)⁷⁵

Stace points out how Buber at first interpreted this experience as "union with the primal being or the God-head," but that later he repudiated this interpretation and chose to understand his experience as "the basic unity of my own soul ... certainly beyond the reach of all the multiplicity it has hitherto received from life ... though not in the least beyond individuation ... and not 'the soul of the All.'" Such a position shows similarities with Hinayana Buddhism in the basic phenomenology of the experience and the refusal to interpret the experience beyond the self. Buber's Jewish background may well be the reason for his repudiation of his initial interpretation, as Stace suggests, but his basic experience of undivided unity still remains.⁷⁶

Various metaphorical expressions occur in descriptions of this state of internal unity and can be classified according to which side of the vacuum-plenum paradox they belong.

64. Suzuki, *op. cit.*, p. 105.

65. Stace (*op. cit.*, p. 119) cites this example which James (*op. cit.*, p. 374) quoted from Tennyson's letter to Mr. B. P. Blood (no reference given).

66. A. Koestler, *The Invisible Writing* (New York: MacMillan, 1954), p. 352, quoted in Stace, *op. cit.*, pp. 120-121.

67. Stace, *op. cit.*, p. 91, uses this example from James, *op. cit.*, p. 376, who quotes it from H. F. Brown, *J. A. Symonds, A Biography* (London, 1895), pp. 29-31.

68. Stace, *op. cit.*, pp. 104-105, citing from Plotinus, *Works* (trans. by Stephen MacKenna; New York Medical Society, n.d.), Enneads VI, IX, XI.

69. Stace, *op. cit.*, p. 120.

70. *Ibid.*, pp. 107-109.

71. *Ibid.*, p. 113.

72. *Ibid.*, p. 115. Stace uses as his authority, R. A. Nicholson, *Studies in Islamic Mysticism* (London, n.d.), p. 66.

73. Stace, *op. cit.*, p. 114.

74. *Ibid.*, p. 157-158.

75. Martin Buber, *Between Man and Man* (London: Routledge & Kegan Paul, 1947), pp. 24-25, cited by Stace, *op. cit.*, p. 155.

76. Stace, *op. cit.*, pp. 156-157, quoting from Buber, *op. cit.*, pp. 24-25.

The vacuum or negative side includes nouns as emptiness, darkness, nothingness, void, abyss, silence, stillness, nakedness, nudity, or desert; and such adjectives as contentless, imageless, numberless, formless, wayless, fathomless, soundless, spaceless, or timeless. The plenum or positive side includes such nouns as fullness, completeness, brightness, light, oneness, perfection, or pureness; and such adjectives as harmonious, infinite, limitless, or boundless. Both sides are needed to give a complete picture of the basic experience and sometimes they are paradoxically joined in the same metaphor.⁷⁷

Other writers on mystical experience besides Stace have described the phenomena of internal unity as an important characteristic of the mystical state.

The central aspect of it (genuine mystical experience) is the fusion of the self into a larger undifferentiated whole.⁷⁸

Underhill says the following in her account of the state of mystical ecstasy:

In this experience the departmental activities of thought and feeling, the consciousness of I-hood, of space and time - all that belongs to the World of Becoming and our own place therein - are suspended. The vitality which we are accustomed to split amongst these various things, is gathered up to form a state of 'pure apprehension': a vivid intuition of - or if you like conjunction with - the Transcendent.⁷⁹

Self-mergence, then - that state of transcendence in which ... the barriers of selfhood (are) abolished ... is the secret of ecstasy.⁸⁰

Others do not give as precise a phenomenological description as Stace, but the similarity is apparent. Pratt describes the unity as a state of consciousness in which the outside world is shut out and the senses are closed.⁸¹

Johnson states that "the highest mystical experiences show that the Spirit of man, his true Self, lies beyond this (usual sense of selfhood) and is normally veiled from the Ego ... The essence of mysticism is the glimpsing of the true Self by the Ego." In the highest state when all the "veils" are stripped away, "there is complete blissful unity in the One, the Impersonal, the Absolute."⁸² Walker's mention of "the melting away of the individual 'self' into 'boundless being'" (underlining mine) is similar to the passages quoted from Suzuki and Tennyson above.⁸³

Stace classifies the experiences of Tennyson and Koestler (see quotes above) as incomplete examples of internal unity because they did not *completely* experience undifferentiated unity. There was not a total loss of extraneous sense impressions or complete certainty of the loss of individuality, and therefore, not truly *pure* awareness.⁸⁴ Such a distinction is an attempt to be very precise, but if some of the mystics which Stace uses as examples of the complete experience could have been questioned as Koestler was, perhaps their experiences, too, would have to be categorized as incomplete. However, this distinction between complete and incomplete can be used as a general guide when other statements which might be included under the subcategory of internal unity are examined. For example, the consciousness of "Beyond" as described by Pratt⁸⁵ and Clark⁸⁶ or the awareness of a "More" with which one's higher self is coterminous and continuous as discussed by James⁸⁷ is not alone sufficient for internal unity without also the loss of sense impressions and pure awareness.

77. Stace, *op. cit.*, pp. 299-301.

78. Rufus Jones, *The Inner Life* (New York: Macmillan, 1916), p. 185.

79. Underhill, *Mysticism*, p. 367.

80. *Ibid.*, p. 373.

81. Pratt, *op. cit.*, pp. 396-397.

82. Johnson, *op. cit.*, pp. 331-332.

83. Walker *op. cit.*, p. 40.

84. Stace *op. cit.*, pp. 119-123.

85. Pratt, *op. cit.*, pp. 337-341, 412-413.

86. Clark, *op. cit.*, p. 263.

87. James, *op. cit.*, pp. 498-499.

Although such phenomena are certainly very close to internal unity and can form a valid part of the complete experience, alone they are not enough. Similarly the boundaries of the personal self of usual experience may be partially broken down or dissolved within the self without complete loss of all distinctions and the emergence of pure awareness.

Also the kind of loss of sense of self which results in unconsciousness as in sleep or coma is not the same as the paradoxical dissolution of the self in internal unity. Without the phenomena which includes the essential experience of undifferentiated unity, these experiences are characteristic only of an incomplete form of internal unity.

In summary, there are both complete and incomplete forms of the basic introvertive experience of internal unity, and there are various metaphors and ways of interpretation. The essence of the experience stripped bare of all interpretation is a direct, conscious experience of undifferentiated unity in pure awareness when all sense impressions fade or melt away and the empirical ego is transcended.

The state then attained is called by various names in the major mystical traditions: Nirvana, the Void, the Pure Self, the Universal or Cosmic Self, the Absolute, the One, or union, bond, or contact with God. But here interpretation begins and basic phenomenological analysis ends.

External Unity

Unity may also be experienced through the physical senses as an underlying oneness behind the empirical multiplicity of the external world. The sense of oneness with external objects (inanimate or animate) is the essence of this subcategory. The observer or subject feels that the usual separation between himself and an object is no longer present, yet the subject still knows that his individuality is retained. In spite of the empirical multiplicity of objects, which are still perceived as separate, the subject-object dichotomy is nevertheless in a paradoxical sense dissolved. On one level the objects are separate, yet at the same time at another and more basic level they are one with the subject.⁸⁸ Another way of expressing this phenomenon is to say that the essences of objects are experienced intuitively while their outward forms are experienced through the senses. At the deepest level the essence or inner reality of all things is felt to be one.⁸⁹ The subject feels a sense of oneness with these objects, because he "sees" that at the most basic level all are a part of a single unity.⁹⁰ External unity may also present itself as a deeply felt awareness of the life or living presence in all things or as the realization that nothing is "really dead."⁹¹ The unifying vision is experienced at an insightful rather than purely rational level through animate and/or inanimate "objects" external to the self. This profound feeling of oneness as an expression of the underlying undifferentiated unity despite empirical multiplicity is the criterion.

The most complete form of external unity has both depth and breadth. The deep oneness experienced through individual objects or people is felt to be part of the underlying unity in all things. Any experience without this cosmic dimension lacks maximum completeness.

The fully developed experience of external unity certainly includes an expansion of consciousness beyond the usual sense of self as well as a consciousness of a "Beyond" or "More" which in such a case may represent the unity. As in the instance of internal unity, however, these phenomena alone, without any relation to undifferentiated unity experienced through the external world of objects, are not enough to constitute external unity. At best they may be considered incomplete or undeveloped forms. They are necessary but not sufficient elements.

88. Stace, *op. cit.*, pp. 64-65.

89. *Ibid.*, pp. 69-70.

90. Walker, in describing the level of Universal Consciousness experienced by Edward Carpenter, states: "...we lose the customary feeling of existing as separate individuals and find ourselves, instead, a part of everything else ... the subject and object coalesce and become one." (*op. cit.*, p. 39.) Johnson phrases the same thought as "The sense that all the visible, tangible world is a part of a larger whole and is apprehended as having an underlying unity ..." (*op. cit.*, p. 326).

91. Stace *op. cit.*, p. 78. Bucke also describes such a living presence in his own experience of cosmic consciousness. (*Op. cit.*, p. 8.)

Stace expresses external unity abstractly by the formula, "all is One." He makes this kind of unity by the chief characteristic of the extrovertive type of mystical experience.⁹² Underhill discusses the same kind of experience as the illuminated vision of the world or the pantheistic and external type of mysticism.⁹³ The claim is made in both the experiences of internal and external unity that a level of reality other than the ordinary is touched. Stace identifies this reality or unity as basically the same in both kinds although the unity is perceived in a different way. He feels that the "all is One" of external unity has the same "One" which is experienced during the state called internal unity.⁹⁴ Although Stace's argument is impressive, it is not crucial to our thesis.

Category II: Transcendence of Time and Space

This category refers to loss of the usual sense of time and space. Time means clock time, but may also be one's personal sense of his past, present, and future.⁹⁵ Transcendence of space means that a person loses his usual orientation as to where he is during the experience in terms of the usual three-dimensional perception of his environment. Experiences of timelessness and spacelessness may also be described as an experience of "eternity" or "infinity."

The experience of internal unity by definition includes transcendence of both time and space because of the loss of all empirical sense impressions. The experience of external unity may or may not include the transcendence of time, but space is paradoxically and only partially transcended because external objects seem both separate and yet not separate because of the feeling of underlying unity.

Category III: Deeply Felt Positive Mood

The most universal elements (and therefore, the ones which are most essential in the definition of this category) are joy, blessedness, and peace. Their unique character in relation to the mystical experience is that their intensity marks them as being at the highest levels of the human experience of these feelings and they are valued highly by the experiencers.⁹⁶ Joy may be of an exuberant or quiet nature and may include such feelings as exultation, rapture, ecstasy, bliss, delight, and/or happiness.⁹⁷ Peace is of the profound nature that "passeth understanding." Closely related to peace is blessedness which includes beatitude, satisfaction, and/or a sense of well-being. Tears may be associated with any of these feelings of positive mood because of the overpowering nature of the experience.⁹⁸ These feelings may be directly associated with the peak of the experience or occur during the "ecstatic afterglow" when the peak has passed, but its effects and memory are still quite vivid and intense.⁹⁹

Love is also an element of deeply felt positive mood which has been mentioned by many students of mysticism, but love does not have the same universality as joy, blessedness, and peace.¹⁰⁰ One example of mystical love is the love which may rise to an indescribable intensity and tenderness.¹⁰¹

92. Stace, *op. cit.*, p. 79.

93. Underhill, *Mysticism*, pp. 254-265.

94. Stace, *op. cit.*, pp. 152, 273-274.

95. Walker in describing the experience of Universal Consciousness says: "...the words 'before' and 'after' seem to have lost all their former meaning for us, so that we appear to have been transported to a world completely *outside* of time." (*Op. cit.*, p. 41.)

96. Stace, *op. cit.*, p. 68. Pratt, *op. cit.*, pp. 351-352.

97. Underhill, *Mysticism*, p. 366.

98. Laski, *op. cit.*, pp. 85-86.

99. "This is the condition that I call the 'ecstatic afterglow' when, with returning consciousness, the realization, appreciation, and interpretation of the experience begins." Laski feels that especially calm, stillness, peace, and sense of well-being are likely to carry over into an "ecstatic afterglow." (*Ibid.*, pp. 85-86)

100. Stace does not include love as one of the "universal core" characteristics (*op. cit.*, pp. 68). Pratt suggests that the more personal that God is to the mystic, the more the sentiment of personal love is aroused (*op. cit.*, p. 349). The very mention of "God" is for Stace already an interpretation rather than a description of the basic psychological experience.

101. Underhill, *Mysticism*, pp. 425-428.

Love has an interrelation with several other categories. The love of God which is especially common in Christian mysticism is an obvious example of the experience of sacredness (see next category). Love in terms of Union with God is one way of interpreting the experience of internal unity.¹⁰² External unity also may have a mood of love especially if the oneness is attained through people, who become a symbol of the oneness in all things. The deeply felt mood or feeling in this case is not necessarily interpreted as love of "God."

In summary, deeply felt positive mood is most universally expressed by joy, blessedness, and peace. Love is closely related and may also be present.

Category IV: Sense of Sacredness

This category comprises the sense of sacredness which is evoked by the mystical experience. The sacred is here defined broadly as that which a person feels to be of special value and capable of being profaned. The basic characteristic of sacredness is a non-rational, intuitive, hushed, palpitant response in the presence of inspiring realities. No religious "beliefs" need necessarily be involved even though a sense of reverence or a feeling that what is experienced is holy or divine may be included.¹⁰³

As Rufus Jones points out, Rudolph Otto calls such a non-rational (yet deeply felt) response the consciousness of the "numinous" which uniquely transcends the finite or ordinary and moves one with awe and wonder.¹⁰⁴ Otto's phenomenological description includes feelings of awe (with the emphasis on uncanniness or numinous dread), profound humility before the overpowering majesty of what is felt to be holy, numinous energy or urgency, a sense of the wholly otherness of what is experienced, and mysterious fascination in spite of terror or fear in the sense of shaking or trembling in the innermost depths of one's being.¹⁰⁵ These characteristics which Otto mentions are sufficient, but not exclusively necessary conditions. If they are present they can lead to a feeling of sacredness; but such a feeling may be experienced in other ways as well.

Otto emphasizes the feelings of fear, creaturehood, finitude, and humility in his description of the response to the holy. However, the previously listed elements of joy, blessedness, peace, and love may be closely related to, but not identical with, the sense of sacredness.¹⁰⁶ Positive mood and unity may be the emphasis rather than fear and separation. Awe has two elements, wonder and fear, and contributes to both types of experience; wonder is an important part of one type, and fear predominates in the other. Both types give rise to the feeling that what is apprehended is sacred, and both may be present at different points in the same experience.

It might be argued that an exclusive experience of separation could not also include the experience of unity. Fear and creatureliness emphasize the negative side of the vacuum-plenum paradox. The full range of the mystical experience must take into consideration both negative and positive possibilities or a combination of the two sides.¹⁰⁷ An experience with no element of unity or no joy, blessedness, or peace would not be considered the most complete kind of mystical experience. (See the last section in this chapter for a further discussion of completeness.)

The expressions, "joy of the Lord" or "Love of God," which are used by Christian mystics show the close relationship between deeply felt mood and sacredness.¹⁰⁸ The phenomenology from the category of sacredness may be interpreted by the experiencer as an experience of "God," the presence of some other specific deity, or simply as a "sense of Presence."¹⁰⁹ Spontaneous acts of worship such as prayer or kneeling may be evoked. Otto argues that a profound existential experience of "creature-feeling" makes the experiencer strongly feel that the numinous is objective and outside the self.¹¹⁰ Such a feeling is one possible example of the category of

102. Stace, *op. cit.*, pp. 101-105.

103. Stace, *op. cit.*, p. 341.

104. *New Studies in Mystical Religion* (New York: Macmillan, 1927), pp. 31-32.

105. Otto, *Idea of the Holy*, pp. 13-46.

106. Stace, *op. cit.*, p. 79.

107. *Ibid.*, p. 250.

108. Pratt, *op. cit.*, pp. 356-357, 416-418.

109. Stace, *op. cit.*, p. 79.

110. Otto, *op. cit.*, pp. 10-11.

objectivity and reality which is to be defined and discussed next. However, an interpretation is involved if this something objective outside the self is identified as "God."

Category V: Objectivity and Reality

These category has two inter-related elements:

- (1) insightful knowledge or illumination felt at an intuitive, non-rational level and gained by direct experience and
- (2) the authoritativeness of the experience or the certainty that such knowledge is truly real, in contrast to the feeling that the experience is a subjective delusion. These two elements are connected because the knowledge through experience of ultimate reality (in the sense of being able to "know" and "see" what is really *real*) carries its own sense of certainty. The experience of "ultimate" reality is an awareness of another dimension not the same as "ordinary" reality which is the reality of usual, everyday consciousness, yet the knowledge of "ultimate" reality is quite real to the experienter.

Such knowledge does not mean necessarily an increase in facts, but rather in insightful knowledge or intellectual illumination, e.g. seeing new relationships of old facts or ideas, new understandings of meanings, new appreciation of the universe as a whole, or an experience of "everything falling into place."¹¹¹ This immediate feeling of objective truth is called by James the noetic quality.¹¹² Things seen in a new light can become vital and living as never before.¹¹³ Although the mystics do not dwell on personal psychological insights, Underhill has described an increase in self-understanding which comes from the mystical experience.¹¹⁴ Such insight is also an example of intuitive knowledge which seems very real.

The lasting authoritativeness or conviction of the true reality of the experience and the sense of the profound significance of the content are at least closely related to, and perhaps enhanced by, the totality and intensity of the response. This knowledge at the level of intuition and insight is felt to require no proof at a rational level by the experienter.¹¹⁵ There is a feeling of being totally grasped and dealt with by ultimate reality. James calls this passivity.¹¹⁶ The intensity and totalness is such as to leave no doubt to the experienter of his participation at a very deep and basic level which although non-rational and even non-verbal is most convincing.¹¹⁷ The unshakable certainty of the objective reality of the experience persists even after the experience is over. Stace discusses in detail the validity of the claim to objective reference, but we are concerned here only with the fact that the mystic is convinced of the objective reality of the experience of what to him is ultimate reality.¹¹⁸

Category VI: Paradoxicality

Rational statements about, descriptions of, and even interpretations of the mystical experience tend to be logically contradictory when strictly analyzed. Such paradoxical language is universally found in the writings

111. Bucke describes such intellectual illumination in his definition of cosmic consciousness: "Like a flash there is presented to his consciousness a clear conception (a vision) in outline of the meaning and drift of the universe ... The person who passes through this experience will learn in the few minutes, or even moments, of its continuance more than in months or years of study, and he will learn much that no study ever taught or can teach. Especially does he obtain such a conception of THE WHOLE, or at least of an immense WHOLE, as dwarfs all conception, imagination or speculation, springing from and belonging to ordinary self consciousness, such a conception as makes the old attempts to mentally grasp the universe and its meaning petty and even ridiculous." (*Op. cit.*, p. 61).

Similar is his description of his own experience: "...it was impossible for him ever to forget what he at that time saw and knew, neither did he, or could he, ever doubt the truth of what was then presented to his mind." (*Ibid.*, p. 3.)

112. James, *op. cit.*, pp. 331-332.

113. Pratt, *op. cit.*, p. 411.

114. *Mysticism*, pp. 375, 378.

115. "There is no certitude to equal the mystic's certitude." (Underhill, *Mysticism*, p. 331.)

116. "...the mystic feels as if his own will were in abeyance, and indeed sometimes as if he were grasped and held by a superior power." (James, *op. cit.*, p. 372.)

117. Pratt, *op. cit.*, pp. 347-48, 400-403.

118. Stace, *op. cit.*, pp. 67-68, 134-206.

of those who have had mystical states of consciousness when they try to describe their experiences.¹¹⁹

Examples of paradox have been mentioned in the typology above as a basic part of the mystical consciousness. In the experience of internal unity there is a loss of all empirical content in an *empty* unity which is at the same time *full* and complete. This loss includes the loss of the sense of self and dissolution of individuality, yet something individual remains to experience the unity. The "I" both exists and does not exist. External unity is experienced through the empirical multiplicity of the external world with the insight that all is One. There may also be a paradoxical transcendence of space.¹²⁰ The vacuum-plenum or negative-positive paradox has three aspects: the One or Universal Self is both unqualified and qualified, both impersonal and personal, and both inactive and active.

Category VII: Alleged Ineffability

The impossibility of adequate expression in words or unintelligibility of the mystical state of consciousness has been stressed as a main characteristic by writers on mysticism.¹²¹ A distinction must be made between the time during the actual experience and afterwards. During the experience of either internal or external unity, there are no concepts or multiplicity to describe within the "unity" or the "One."¹²² The profound intensity of positive mood accompanying the experience adds to the inadequacy of words to accurately communicate and tends to make one fall silent.¹²³ It would appear that there are grounds for the claim that during the experience, ineffability is a characteristic. But afterwards when they have had time to integrate and interpret, mystics have written descriptions of their remembered experiences while at the same time they have insisted that the actual experiences were indescribable.¹²⁴

Stace gives an interesting psychological explanation for this alleged ineffability. Any experience, sensory or nonsensory, cannot be adequately communicated with words to a person who has not had the experience himself.¹²⁵ The unique and actual characteristic that mystics allege their experiences to be ineffable is based on an embarrassment with language. Statements made afterwards about the actual experience stripped of interpretation are literally true descriptions, but because mystical experience is paradoxical in nature, an attempt to be strictly logical involves contradiction. To avoid the frustration of contradiction, the mystic calls his experience ineffable.¹²⁶ The categories of ineffability and paradoxicality are thus closely related.¹²⁷ The category of objectivity and reality also has a close relationship to ineffability because the intuitive and insightful knowledge gained cannot be adequately communicated to others, although it remains of profound significance and reality to the experienter.¹²⁸ Whether or not Stace's explanation is accepted, the alleged ineffability of mystical experience is a more accurate description of this category than simply "ineffability." If the actual experiences were truly beyond words, not much could be accomplished in a study of the mystical state of consciousness by a phenomenological analysis of even the remembered descriptions.

119. James, *op. cit.*, pp. 408-412. Suzuki feels that persons who experience satori "are always at a loss to explain it coherently or logically." (*Op. cit.*, p. 103) Stace argues that mystical paradoxes are meant to be true paradoxes (i.e., both sides although contradictory are actually experienced and are not due to confusion or unclearness (*op. cit.*, pp. 257-276). The extensive use of figures of speech and paradox is one of Clark's characteristics of the mystical experience (*op. cit.*, pp. 273-74). Stace would agree but would insist that much of what might at first be thought to be figure of speech or metaphor is in fact true description which is by nature paradoxical (*op. cit.*, pp. 299-303). This point is discussed further in the next section.

120. Stace maintains that this paradox of identity in difference gives rise to pantheistic philosophical interpretations of mysticism. For example, the contradictory propositions that the world is identical with God and that the world is distinct from God are both asserted to be true (*op. cit.*, pp. 212-218ff).

121. James, *op. cit.*, p. 371; Pratt, *op. cit.*, pp. 346-347, 476; Johnson, *op. cit.*, p. 325; Suzuki, *op. cit.*, p. 103.

122. Stace, *op. cit.*, p. 297.

123. *Ibid.*, pp. 281-283; Pratt, *op. cit.*, p. 410.

124. Stace, *op. cit.*, p. 298.

125. *Ibid.*, p. 283.

126. *Ibid.*, pp. 304-306.

127. Underhill, *Mysticism*, pp. 331-32. Suzuki uses the term "irrational" to cover both categories (*op. cit.*, p. 103).

128. Pratt, *op. cit.*, p. 476.

Category VIII: Transiency

Transiency refers to duration and means the temporariness of the mystical state of consciousness in contrast to the relative permanence of the level of usual consciousness. Transient appearance of the special and unusual levels or dimensions of consciousness which are defined by this typology with subsequent disappearance and return to the more usual is the characteristic of this category. The peak level or climactic moment of the experience may last for only a relatively short period (variously described from seconds to hours) although the feelings of an "ecstatic afterglow" effect may be experienced for many hours or even days.¹²⁹ The characteristic of transiency, however, means that the mystical state of consciousness cannot be sustained indefinitely.

An objection might be raised at this point on the grounds that the greatest mystics achieved a permanent state of mystical consciousness which continued while they led active lives in the world.¹³⁰ Although continuing effects of the ecstatic afterglow can remain (but with decreasing intensity unless there are repeated mystical experiences) a prolongation of the peak experience of unitary consciousness or unifying vision could not have been sustained at the same level or lives of fruitful activity in the world would have been impossible.¹³¹ With proper discipline for successful repetition of mystical experiences, a general change in level of consciousness may be induced, but this is not the same as a continual peak experience.¹³² Such changes and other permanent effects of the experience in the experiencers' lives are considered in the last category below. The mystics' own descriptions of internal unity usually include references to transiency.¹³³ Similarly, the actual experience of external unity is not described as permanent.¹³⁴ Transiency is a characteristic of the immediate mystical state of consciousness which is felt by the experiencer to be on a different level or dimension from his usual state. The transient nature is realized by contrast when the experience is over.

Closely related to transiency is the suddenness of appearance and disappearance of these levels or dimensions of consciousness which are different from usual. The unexpected character of coming with an element of surprise no matter how well prepared one is or how hard one has tried to gain the experience enhances the sense of striking change from ordinary consciousness. Although Suzuki¹³⁵ combines both suddenness and transiency in the same category (listed as momentariness), we consider transiency the universal and most important of the two elements.

Category IX: Persisting Positive Changes in Attitude and/or Behavior

If a person goes through the kind of experience characterized by the eight categories above, his attitude and/or behavior are changed.¹³⁶ He cannot remain indifferent to the experience. The profound personal impact is a strong motivation for action, even if the result is only a rearrangement of the life in order to cultivate more mystical experience.¹³⁷ Positive effects of the mystical experience in the life and personality of the experiencer

129. Laski, *op. cit.*, pp. 60-66. James, p. 372.

130. See Underhill's discussion of the "unitive life" (*Mysticism*, pp. 413-44) or Pratt's chapter on "The Mystic Life" (*op. cit.*, pp. 430-441).

131. Pratt speaks of the rhythm between contemplation and activity (*ibid.*, p. 433).

132. Underhill states that "the greatest of the contemplatives have been unable to sustain the brilliance of this awful vision for more than a little while." (*Mysticism*, p. 331.).

133. C. Butler in his *Western Mysticism* (Grey Arrow Edition; London: Arrow Books, 1960) includes transiency as a characteristic in his description of mysticism and gives specific examples from the writings of St. Augustine (pp. 165-167), St. Gregory the Great (pp. 140-141), and St. Bernard of Clairvoux (pp. 165-167).

134. For example, Jacob Boehme's experiences as related in Brinton's biographical chapter were temporary although the impact and insight gained were so great as to have a lasting influence on his life. (Howard H. Brinton, *The Mystic Will* [New York: Macmillan, 1930], pp. 47-52)

Bucke's own experience of cosmic consciousness happened only once. "The illumination itself continued not more than a few moments, but its effects proved ineffaceable; ...There was no return that night or at any other time of the experience." (*Op. cit.*, pp. 7-8).

135. *Op. cit.*, p. 108.

136. Johnson, *op. cit.*, p.332. Clark, *op. cit.*, pp. 274-275.

137. Compare this necessity for action to Wach's fourth universal characteristic of genuine religious experience - that it results in action. He distinguishes, however, the "right" action from any action. (Wach, *Comparative Study of Religions*, pp. 36-37).

is the criterion of whether or not to call the experience truly mystical by many commentators and also by mystics themselves.¹³⁸ Such a value judgment, as well as the fact that the phenomena observed extend over a longer time than just the few minutes or hours when the primary experience occurred, makes this category stand apart from the preceding eight. However, the "fruits for life" or "value for life" is included in the typology with this acknowledgment in order to distinguish the experience as defined above from an experience which might resemble the typology but result in negative effects in the individual's life. Quietism and unhealthy self-indulgence are examples of this possible potentiality for effects in a negative direction.¹³⁹ We seek a typology of a healthful, life-enhancing mysticism, and thus, the present category describes positive effects.

These effects can be divided into four main groups of persisting changes in behavior and/or attitude: (1) toward self, (2) toward others, (3) toward life, and (4) toward the mystical experience itself. The duration of the change must also be considered. Diminishing afterglow effects may persist for days or even weeks, but usually fade away in time unless the experience is repeated. Changes which remain even after the experience is only a memory are the most significant.

(1) Increased integration of personality is the basic inward change in the personal self. This may come about as a fruit of a radical experience of death and rebirth or conversion; or from the profound depth of the experience, insight may be gained which can subsequently be utilized in a gradual reorganization of the personality and growth in maturity. Undesirable traits may be faced in a way that enables them to be dealt with and finally reduced or eliminated. Issuing from personal integration, the sense of one's inner authority may be strengthened, and the vigor and dynamic quality of a person's life may be increased. Creativity and greater achievement efficiency may be released. There may be an inner optimistic tone with consequent increase in feelings of happiness, joy and peace.¹⁴⁰

(2) Attitudes and behavior toward others may change in such ways as more sensitivity, more tolerance, more real love.¹⁴¹ The effectiveness of such change is measured by the response in others who may remark on the development of a more positive relationship, or have the tone of their lives changed. Another result of increased personal integration may be to be more authentic as a person by being more open and more one's true self with others.

(3) The third area of change is in attitude toward life and what one works for in life. One's philosophy in life, sense of values, sense of meaning, and purpose in life may be changed.¹⁴² Vocational commitment may be strengthened or changed completely. The need to serve others may be felt. As a result of the experience of a new dimension in life, more appreciation for life and the whole of creation, a stronger sense of the preciousness of life, or an increased sense of reverence may emerge in a new way.¹⁴³ More time may be spent in devotional life and meditation.

(4) The experience itself is regarded as valuable and what has been learned is thought to be useful.¹⁴⁴ A positive experience is remembered as a high point, and an attempt may be made to recapture the experience or, if possible, to gain new experiences as a source of growth and inspiration. However, the experience is seen neither as a means to an end nor as an end in itself, but as a balance of both.¹⁴⁵ Mystical experiences of others

138. James uses such a pragmatic approach as a guide in evaluating all kinds of religious experience (*op. cit.*, pp. 21-22, 321). Pratt also judges the value for life by the practical fruits (*op. cit.*, pp. 466-477). Zaehner points to Ruysbroeck's condemnation of quietism on the basis of what it produced (*Mysticism, Sacred and Profane*, pp. 173-174).

139. H. N. Wieman and R. Westcott-Wieman, *Normative Psychology of Religion* (New York: Crowell, 1935), pp. 186-188.

140. Such positive changes toward self are emphasized in discussions by Jones, the Wiemans, and Underhill. R. Jones especially notes the optimistic tone and heightened dynamic quality in the life of a person who has been opened to the utilization of resources of vital energy through transcendent experience (*The Inner Life*, pp. 171, 180). The Wiemans give a balanced presentation of both the potential evils and values of mystical experience. (*op. cit.*, pp. 186-91). Underhill is one of the most enthusiastic describers of the life-enhancing power of mysticism. (*Mysticism*, pp. 413-46; *Essentials of Mysticism*, pp. 12-14.)

141. Underhill, *Mysticism*, p. 437.

142. Clark stresses extravagance in behavior, (i.e., acting in an imprudent way for self-benefit) as a characteristic effect of mystical experience, (*op. cit.*, pp. 274-275).

143. Wieman and Westcott-Wieman, *op. cit.*, pp. 190-191.

144. Walker, *op. cit.*, p. 156.

145. Stace, *op. cit.*, pp. 339-340.

are more appreciated and understood although even among mystics theological, philosophical, or cultural bias can lead to value judgments of preference for their own particular interpretations.

The Continuum of Mystical Experiences

Many writers on mysticism have noted a difference in degree in the experience. For example, Pratt distinguishes mild and extreme types of mystical experience.¹⁴⁶ Johnson divides his fifteen examples into three groups ranging from the slighter to the more profound.¹⁴⁷ Stace regards the extrovertive type of experience as on a lower level than the introvertive.¹⁴⁸ Thouless and Underhill differentiate various stages in the growth of the mystic life on a continuum from the prayer of quiet in which the self is awakened and illuminated to the ecstasy and spiritual marriage or unitive life.¹⁴⁹

The categories in the above typology allow for a difference in intensity or level within the mystical experience. The question arises as to when an experience ceases to be defined as mystical. Stace has classified experiences which do not have all the core characteristics of either the introvertive or extrovertive types as atypical or borderline.¹⁵⁰ Laski in her study of what she calls transcendent ecstasy includes aesthetic experiences in art, poetry, music, drama, and nature; creative experiences in writing or scientific work; and certain sexual and childbirth experiences as well as the commonly termed religious or mystical experiences. Some of her criteria are the same as our categories, but the breadth of her characteristics leads her to include experiences in which all our categories would not be represented.¹⁵¹ Such experiences would be called more or less atypical or borderline by our definition unless some essential characteristics from all of our categories were present. Some categories have a variety of phenomena which are an expression of the same universal characteristics. Not all the phenomena of each category need be experienced for the category to be counted positively in the evaluation of a particular experience (e.g., all the various elements of deeply positive mood or changes in attitude and behavior). What is experienced however, should occur to a strong or adequate degree to qualify that particular category when the completeness of the mystical typology as a whole is judged.

The category of unity is the most important, and if either external or internal unity is experienced, characteristics from the other categories are likely to be experienced also.¹⁵² If neither internal nor external unity is complete, unity has not been truly experienced. Even if all the other categories are represented, such an experience must be considered as close to, but not strictly the same as the most complete mystical experience by our definition. In such a case, the total experience would be classified as incomplete, although more complete than atypical or borderline.

All the phenomena which resemble and include mystical experience¹⁵³ can be placed on a continuum from dim aesthetic feelings in nature and the arts through experiences considered as atypical or borderline to the complete extrovertive type and finally to the most profound introvertive experience with the strongest presence of characteristics in each of our categories.¹⁵⁴ The ideal example of the most complete mystical state would be an experience in which all categories were experienced to the strongest or most complete degree. With the suggested continuum in mind, this categorization of mystical states of consciousness can now be used to evaluate drug experiences and determine where on the continuum, if at all, they fit.

146. Pratt, *op. cit.*, pp. 338-339.

147. Johnson, *op. cit.*, pp. 301-318.

148. Stace *op. cit.*, p. 132.

149. R. H. Thouless, *An Introduction to the Psychology of Religion* (Cambridge: Cambridge University Press, 1956), pp. 228-233. Underhill, *Mysticism*, pp. 167-443.

150. Stace, *op. cit.*, pp. 81-84.

151. See especially her Appendix D for a summary of her characteristics (*op. cit.*, pp. 482-495).

152. Stace, *op. cit.*, p. 67, 83, 110, 132-133.

153. The phenomena of visual and auditory hallucinations, trances involuntary vocal utterances, and/or automatic writing have not been included in the universal characteristics of the mystical state of consciousness. None of these phenomena are universal or necessary although they may be present along with mystical experience, but their varying content and presence are determined by the culture and temperament of the individual. (*Ibid.*, pp. 47-55.)

154. *Ibid.*, pp. 80-81.

Chapter IV

EXPERIMENTAL DESIGN

The purpose of the experiment in which psychedelic drugs were administered in a religious context was to gather empirical data about the state of consciousness experienced. These data form the basis for a comparison with the typology of the mystical state of consciousness which has been presented above. Tape recordings, written accounts, questionnaires, and personal interviews were used to collect the data.

Non-drug Factors

Although descriptions in the psychopharmacological literature of the effects of these substances (LSD, mescaline and psilocybin) vary from "model psychosis" to "transcendental experience", investigators seem to agree that an alteration in the usual state of consciousness is produced. Researchers who report "transcendental" experiences in their subjects claim that set and setting are important factors.¹ Set is defined as the personal expectation, mood, mental attitude and past experience of the subject; setting is the external environment and atmosphere and includes the expectations of the investigator. Trust and confidence in both the administrator and the situation are emphasized as crucial. In this view, the drug is seen as the necessary means by which this kind of potential experience may be actualized in a person who is properly handled and prepared.

The kinds of experiences reported by those who have studied the use of these substances in religious ceremonies seem to support this theory.² Both the setting and psychological expectation are conducive to an experience of great positive significance for the participant. The participant knows what the procedure of the ceremony will be, and feels at ease as part of a group which undergoes the experience together.

The effects of set and setting were planned to maximize the possibility that mystical phenomena would occur. The assumption was made that for experiences most useful for comparison with the typology of mysticism, the atmosphere should be broadly comparable to that achieved by tribes who actually use natural psychedelic substances in religious ceremonies. The particular content and procedure of the ceremony had to be made applicable (i.e. familiar and meaningful) for the participants. Attitude toward the experience, both before and during, was taken into serious consideration in the experimental design. Preparation was meant to maximize positive expectation, trust, confidence, and reduction of fear. Setting was planned to utilize this preparation through group support and rapport, friendship, an open and trusting atmosphere, and previous acquaintance with the procedure of the experiment in order to eliminate, if possible, feelings of manipulation which might arise. The physical environment was a private chapel. There, on Good Friday, a two-and-one-half-hour religious service which consisted of organ music, four solos, readings, prayers, and personal meditation was attended by twenty Christian theological students, some of whom had taken psilocybin prior to the service.

Choice of Drug

Psilocybin was chosen because its duration of action is only four to five hours, compared to eight to ten for LSD and ten to twelve for mescaline, in doses equivalent in potency. The practical problem of the time needed

1. For a general statement of this position see T. Leary's article, "How to Change Behavior," in *Clinical Psychology*, ed. G.S. Nielsen (Proceedings of the XIV International Congress of Applied Psychology, Vol. IV; Copenhagen: Munksgaard, 1962), pp. 62-64. A more detailed account of the application and implications of this approach from the work of Leary's group is given by R. Metzner, G. Litwin, and G. Weil in *The Relation of Expectation and Setting to Experience with Psilocybin: A Questionnaire Study* (Dittoed by Harvard University Department of Social Relations) pp. 1-30. The method pioneered by A.M. Hubbard and used by the Canadian investigators, N. Chwelos, D.B. Blewett, C.M. Smith, A. Hoffer, H. Osmond, J.R. MacLean, D.C. MacDonald and U.P. Byrne, is explained in detail in Chwelos and Blewett's *Handbook for the Therapeutic Use of Lysergic Acid Diethylamide 25* (to be published), pp. 15-48. Sherwood, Stolaroff, and Harman have come to similar conclusions (*op. cit.*, p. 69).
2. As was mentioned in Chapter II, the following have been participant-observers in Indian ceremonies in which sacred mushrooms or peyote were eaten: Wasson and Wasson (*op. cit.*, pp. 287-316, Slotkin (*Tomorrow Magazine* Vol. IV, No. 3, pp. 64-70), and Osmond (*Tomorrow Magazine*, Vol. IX, No. 2, pp. 105-125).

to supervise experimental subjects dictated that the use of psilocybin was more feasible. Claims of various differences in the effects of these three drugs have not been conclusively demonstrated, e.g., greater color and visual imagery with mescaline, or more unpleasant reactions with LSD.³ Any apparent advantage of psilocybin in terms of less preoccupation with imagery or generally more pleasant reaction is perhaps because psilocybin is newer and has not yet been researched as thoroughly. Also, because of the greater potency per unit weight of LSD, comparisons are not always between dosage effects of equivalent potencies. Higher doses of the same drug usually produce more intense effects, whether positive or negative. The oral dosage of psilocybin used was 30 mg. This dosage corresponds roughly to 150-200 micrograms of LSD or 500-750 mg of mescaline. The controls received 200 mg of nicotinic acid in identical capsules. This control substance produces transient vasodilation of blood vessels in the skin, especially of the face, and general relaxation.⁴ This was used to potentiate suggestion in the control subjects, all of whom knew that psilocybin produced various somatic effects, but none of whom had ever had psilocybin or any related substance before the experiment.

Recruitment and Pre-testing of Subjects

Subjects were student volunteers from a local theological seminary. They were recruited through a lecture on rehabilitation-experiments in which psilocybin was given to convicts at the Concord State Prison. Those students who wanted a personal experience with psilocybin met with the experimenter. At this meeting it was explained that psilocybin would be administered during a private Good Friday worship service, and questions were answered about possible harmful effects and risks involved in taking an experimental drug. An effort was made not to overemphasize negative effects such as fear and psychotic-like symptoms which might produce a negative set. The California Psychological Inventory (CPI) as well as a medical-history form⁵ and a pre-drug questionnaire⁶ was completed by all volunteers. The medical history form was similar to that used by the Harvard University Health Services for screening volunteers for the Harvard Psilocybin Project (sponsored by the Center for Research in Personality).

The pre-drug questionnaire was designed by the experimenter to assess personal religious background, training, and experience in a predominantly open-ended way. Questions included church affiliation, theological position, conversion experience, mystical or other religious experience, and devotional life. During the following week, each volunteer participated in a two-hour interview with the experimenter. During this time the medical history was reviewed with further questioning on any positive item which had been mentioned. Particular note was taken of metabolic diseases; previous consumption of drugs, alcohol, and tobacco; seizures; family and personal history of mental illness and psychotherapy; and symptoms of hysteria. Each person was asked to interpret the meaning of the proverb, "A rolling stone gathers no moss," in order to check on fundamental abstract reasoning power. A physical exam was given to evaluate general physical condition and to provide a baseline in case any physical complaints developed after the experiment. Suggestibility was tested by having the person stand with his eyes closed and imagine that a strong wind was pushing him backwards. This test was also a measure of the degree of resistance or cooperation with the experimenter.

Conditions which would have been grounds for rejection of a volunteer were cardiac impairment sufficient to limit exercise or contraindicate emotional strain, liver enlargement or history of liver disease (e.g. hepatitis or jaundice), history of psychosis, present psychological imbalance (especially depression), or current intensive psychotherapy or analysis for severe psychological problems. No volunteer needed to be rejected on these grounds.

3. Unger summarizes the evidence (*op. cit.*, pp. 2-3 of his manuscript copy). The similarity between LSD and mescaline is stated by P. Hoch, H. Pennes, J. Cattell, *Chemical Concepts of Psychosis*, ed. M. Rinkel (New York: McDowell, 1958), p. 143. H. Isbell found similar effects produced by LSD and psilocybin ("Comparison of the reactions induced by psilocybin and LSD-25 in man," *Psychopharmacologia*, Vol. I 1959, p. 37). He also reported cross-tolerance which indicates the probability of a common pathway for LSD and psilocybin (H. Isbell et al., "Cross-tolerance between LSD and psilocybin," *Psychopharmacologia*, Vol. II 1961, pp. 147-159).

4. L.S. Goodman and A. Gilman, *The pharmacological Basis of Therapeutics* (New York: Macmillan, 1955), p. 1701.

5. See appendix A for a sample of the medical-history form.

6. See appendix B for a sample of the pre-drug questionnaire.

After the physical exam and review of the medical history, the pre-drug questionnaire was used as a guide in discussing the person's religious background and, especially, experience. Most of this time was spent in eliciting a description of the most meaningful religious experiences in the person's life. Care was taken not to suggest the basic phenomenology of the mystical experience to the subject, but rather to let him talk about his own experiences which he had mentioned in his questionnaire.

Preparation and Grouping of Subjects

Each person was given a written summary of the planned procedure of events on Good Friday and of the cooperation which was expected from him in collecting data during the days following. These points were discussed and questions answered. Suggestions were made for preparation by self-examination in depth, meditation, private devotional life, or reading of literature deeply meaningful to the person. These were suggestions only, and each person was told to prepare in the way which suited him best, but every effort was made to have him prepare, in as serious a manner as possible, for a meaningful experience.

When all the interviews had been completed, the data on each person were reviewed. Notes had been taken during each interview, and afterwards a general impression of the person had been written by the experimenter.

Related data from the questionnaire supplemented by the interview were combined into categories which were scored with a 0-5 rating scale made relevant to each category. The categories fell into three main divisions: 1) Past religious experience, 2) Religious background and training, 3) General psychological makeup. Ratings on the categories in these groups, the CPI scores, and the interviewer's general impression of each person were used to match the twenty volunteers into ten pairs. (For a more detailed description of the data used in matching, and how the 0-5 scale was adapted to each category, see the next chapter).

The twenty subjects were also divided into five groups of four persons each, on the basis of friendship and compatibility. Most of the subjects were in the same classes, ate together, and lived in the two dormitories which were next to each other on the campus. Groups were constituted without reference to matched pairs. There were only two different groups in which a pair of subjects were together. Each group was assigned two leaders who met with the group before the experiment.

These leaders were familiar with the effects and potentialities of psilocybin through personal experience and observation of others in group sessions of the Harvard Psilocybin Project. Each of the five leaders with the most experience worked in a group with another leader who had not had quite as much experience in helping people through the experience. The two leaders who worked together knew each other and felt compatible working as a team. They knew from past experience the positive and negative possibilities of the drug experience, and their very presence was a reassuring factor to the subjects. The chief purpose of these leaders was to aid in creating a friendly and trust-filled set and setting which, it was hoped, would maximize the potential for positive experience, and to manage with confidence any disturbing reactions which might occur. There was one leader for each subject who received psilocybin.

The experimenter held a briefing meeting with the leaders. Each leader received a printed summary of his purpose and functions, and a protocol of the experimental procedure. Stress was placed on a supportive but non-directive role so that each subject's experience could have its own development. The leaders were purposely not told the characteristics of the typology of mysticism and were not shown the post-drug questionnaire or any of the data already collected on the subjects. Neither the leader nor the experimenter knew which subject would receive psilocybin. The experimental procedure was discussed in detail so that the leaders could be of maximal help in making the experiment run smoothly. Emphasis was placed on creation of an atmosphere which would not create feelings of manipulation, suspicion, or psychotic terror in the subjects. Strategies for handling such disturbing reactions were reviewed (e.g., taking the subject out of the chapel and reassuring him). Leaders were instructed not to interfere unless a subject was having obvious difficulty. Group assignments were made, and the procedure and purpose of the group meetings to be held by the leaders with their groups before the experiment were discussed.

Each group of subjects met with its two leaders for two hours on one occasion two to five days before Good Friday. The meeting was held in the dormitory room of one of the group members. The purpose of this meeting

was to develop group spirit and to prepare subjects for as positive and meaningful an experience as possible. Group members had an opportunity to become acquainted and feel at ease with their leaders. Subjects were encouraged to let themselves go into unexplored realms of experience during the actual experiment and not to try to fight the effects of the drug, even if the experience became very unusual or frightening. The method of reaction to the experience was suggested, rather than specific content either positive or negative. The point was made that each person's drug experience was to be uniquely his own and could not be predicated with accuracy at the present state of knowledge. Possible physical symptoms such as nausea and vomiting were discussed as unwanted side effects which could be minimized or not experienced at all if the subjects were reassured that they were in good hands and that the experience, no matter how unusual, would be temporary. Personal preparation and the plan of the day on Good Friday were reviewed and discussed so that everyone was clear on the expected procedure. Subjects were instructed to eat an early, very light, non-fat breakfast. Each group selected its own meeting place on campus for the morning of the experiment.

Experimental Procedure

Drug Preparation

Double-blind technique was employed. The subjects had been told that some of them would receive psilocybin and some would be controls, but they did not know, that two of the subjects in each group would receive psilocybin, nor that the other two members, as controls, would receive a control substance, nicotinic acid. They had been told that one of their two leaders would receive a small dose of psilocybin. This was meant to add to the reassurance of the subjects and to aid group spirit and rapport with the leaders. Each pair of leaders knew that one of them and two of their group would receive psilocybin, but they were not told the nature of the control substance. Thirty capsules which were identical in outward appearance were prepared, eight hours before the experiment. Ten contained 30 mg of psilocybin; five contained 15 mg of psilocybin; and fifteen contained 200 mg of nicotinic acid. Powdered sugar was used to fill any unused space in the capsules. Each capsule was sealed in an unmarked envelope, and the envelopes were kept in three groups, according to contents.

The list of paired subjects was given to a helper who did not participate in the experiment and did not know any of the subjects or leaders. He flipped a coin for each pair to designate which would be experimental and which would be control. He then checked the group lists to make sure that the experimental and control subjects were divided evenly in each group. In one instance, the coin-flip determination was arbitrarily changed to maintain this balance. A similar procedure was followed for the five pairs of leaders. The helper then wrote the names on the appropriate envelopes, and the coding key was sealed in an envelope and locked in a drawer.

Protocol During the Experimental Day

The actual experiment in which psilocybin was administered to half of the participants occupied most of the day on Good Friday. A church in Boston provided exclusive use of a small prayer chapel which was connected by a hallway to three adjoining rooms in the basement. This chapel was large enough for fifty people. Two of the rooms were large, and the other was considerably smaller, but large enough to accommodate easily a group of six persons. The rooms were comfortably furnished with sofas and chairs. The "live" Good Friday service in the main sanctuary of the church upstairs was transmitted through a high-fidelity amplifier to speakers in the private chapel and two large rooms. Lighting in the chapel was controlled by a rheostat which was set for dim light. Candles were lit on the altar on either side of a golden cross. There were three stained-glass windows behind the altar. No incense was used. Exits from the experimental area were locked, except for one which could not be. A helper who was a clergyman was stationed there throughout the experiment to keep all participants in the experimental area and to prevent any persons not connected with the experiment from entering. Signs were placed on the outside of all other exits to indicate that a private worship service was in progress.

On the morning of the experiment, the two leaders met the four members of their group at their own predetermined meeting place at about 9:30 AM and went as a group by automobile to the church. By 10:05

AM, all groups had assembled in the church basement. Separate areas were assigned to each of the five groups so that one group met in each end of the two large rooms, and the fifth group in the smaller room. Participants helped to arrange the sofas and chairs into small circles with a tape recorder in the middle of each area. An opportunity was given for each person to become familiar with the physical surroundings of the experimental area, i.e., the chapel, the three rooms opening off the hallway, and the toilet facilities which also were entered from the hall. A brief meeting was held for everyone in one of the large rooms and to enable all student participants to meet the other group leaders whom they had not seen before. The minister who was to "stand guard" at the unlocked entrance was introduced and his function explained. The participants were encouraged to stay together in the chapel for the entire service, but were given the freedom to leave if they had to go to the toilet or if they felt restless. The understanding was made clear that everyone was to stay in the experimental area during the course of the day. An effort was made to allay any fearful tension and to encourage serious expectancy.

After this meeting, each group of four student volunteers and two leaders sat together in their assigned area. Shortly thereafter, at 10:30 AM, the envelopes were distributed to the group by the experimenter who watched as the capsules were swallowed with a small amount of water. For the next eighty minutes until it was time to move into the chapel, silence was observed in each group. Each individual was free to read, meditate or pray. The leaders were ready to help anyone who became frightened or experienced disturbing physical symptoms.

At 11:45 AM, a bell was sounded as the pre-arranged signal for all the group to move into the chapel. Each group sat together with their leaders. The minister welcomed everyone in the chapel before he went upstairs to start the service. An organ prelude was heard before the actual service started.

The experimenter remained outside the chapel in the hall to be of assistance in case of emergencies. Oral and injectible thorazine were available as well as other standard emergency drugs. A written record was taken of the subjects and leader who left the service from time to time to go to the toilet or to one of the other rooms. One of the large rooms was reserved for subjects who wanted to talk and the other for those who wanted to sit in silence. Each person who came out of the service was encouraged but not coerced to return. Most of the subjects remained in the chapel for the entire service.

At 2:30 PM when the service was over, the groups remained in the chapel. One leader went with one subject at a time back to the original group area where each subject described his experience into a tape recorder. After recording, each subject was escorted back to his group in the chapel. The other leader stayed with the group in the chapel during the recording.

At about 3 PM, after all the recordings were made, each group assembled in its area for a discussion and sharing of the experience. Fruit and juice were provided. All this conversation was recorded on tape.

By 4:30 PM, all subjects were judged recovered enough to leave. Each group was dismissed as a unit, and went out to eat together. After the meal, the leaders took each person home.

Collection of Data after the Experiment

The next morning, each subject called the experimenter to report his physical and psychological condition and how he had slept. Mental alertness and clarity, and presence or absence of headache, nausea, or dizziness were specifically elicited. The schedule of post-session interviews was arranged at this time.

In the days following the experiment, each subject wrote a description of his experience and mailed it to the experimenter. During the two-hour post-session interview, a 147-item questionnaire⁷ was completed by each participant in about 30 minutes before any discussion. Certain items were based on the categories of the typology of mystical experience. Other items measured physical symptoms or unpleasant reactions such as fear, terror, anxiety, loneliness, depression, or hatred. The person was asked to evaluate the degree to which he experienced each item on a scale from 0-4:

7. See appendix C for a sample of this post-drug questionnaire.

- 0 - None, or not experienced at all.
- 1 - Experienced so slightly as to be doubtful.
- 2 - Experienced slightly.
- 3 - Experienced moderately.
- 4 - Experienced strongly.

It was explained that the highest rating ("4" or "strong") was for extreme experiences. For an item to be scored as "4", the experience had to equal or excel an experience which the participant considered *strong*, either in comparison to his personal past experiences or to what he would regard as strong in terms of each particular item. The written description and post-drug questionnaire were used as the basis for the ensuing interview. Unclear points were discussed. A tape-recording was made of each interview. A summary of each person's experience and reactions to Good Friday was written by the experimenter.

Six months after the experiment another two-hour period was devoted to each subject. A follow-up questionnaire which consisted of three parts was first completed.⁸ Part I was open-ended. The participant was asked to list any changes which he felt were a result of his Good Friday experience, and to rate the degree of benefit or harm of each change. Part II (52 items) was a condensed and somewhat more explicit repetition of items from the post-session questionnaire. Part III (93 items) was designed to measure specific changes in attitude and behavior, both positive and negative. The same rating scale as in the post-session questionnaire was employed in all three parts except that the scale used was from 0-5. A distinction could be made in the highest rating as to whether this experience merely equalled what had previously been thought to be a strong experience ("4"), or excelled it ("5"). Thus "4" and "5" are more precise ratings of what would have been scored as "4" on the 0-4 scale of the post-session questionnaire. In the one-and-one-half-hour interview which followed, most emphasis was placed on a discussion of the nature of any changes which had been indicated. With the aid of Part II, the phenomena of the main categories of the typology were quickly reviewed. The interviewer took a more active role in this part than in the post-session interview. Categories were described in phenomenological terms, and the subject was asked to compare this Good Friday experience to these categories. The response to Part III was used as a basis for fuller description during the interview of any changes in attitude or behavior which had persisted for the six months since Good Friday.

Subjects were also invited to express their feelings about the whole experiment and asked how they would have preferred the set and setting to have been structured. The whole interview was taped. After each interview the experimenter wrote a summary of each subject's experience compared to the mystical typology. Subjects were not told whether they were experimentals or controls. The interviewer himself did not know until after completion of the content analysis of the individual writeups.

The accounts written within a few days after the Good Friday experience and those written six months later (Part I of the follow-up questionnaires) were content analyzed for phenomenological evidence of the categories from the typology of mysticism. The content analysis proceeded in three steps. First, the categories of this typology were described by the experimenter in the form of a training manual for judges who were unsophisticated in both mysticism and psychological experimentation. The description attempted neither to use theological concepts nor to identify the experience as "religious"; it sought instead to describe the phenomenology of the categories of mysticism without naming them as such. These phenomena were described in levels of completeness or intensity, corresponding to the following 0-3 scale for each category:

- 0 - None, or not experienced at all.
- 3 - Experienced to a strong degree.
- 2 - Experienced to a moderate degree.
- 1 - Experienced to a slight degree.
- 0 - None or not experienced at all.

The judges were instructed to read the accounts and make a qualitative rating for the highest level attained in each experience for each category or sub-category.⁹

8. See appendix D for a sample of this questionnaire.

9. See appendix E for the training manual and judges' score sheet.

Second, the category description and rating system were pre-tested on five judges. Originally the plan was to score the content both for qualitative intensity or completeness, and for quantitative number of mentions of each level for each category. The results of this pre-test showed that the category descriptions were in general satisfactory but that there were too many confusing sub-categories. Also, the overlapping nature of the categories made quantitative scoring quite confusing, because the categories were imposed *a priori* on the accounts, rather than derived from the accounts. New, non-overlapping categories were not devised because a major purpose of the content analysis was to determine whether or not phenomena which would correspond to the *a priori* categories were present before the administration of the questionnaire, which could have suggested such phenomena.

Third, the scoring of the categories was revised to a more simple method, and an additional three final judges were trained. These judges were former school teachers who were now housewives and mothers. They did not know the nature or design of the experiment, or that drugs had been given. They were not told that there were experimental and control groups. They were asked to score twenty experiences reported by persons who had attended a Good Friday worship service. The categories were explained by the written description in the training manual, and sample accounts were scored and discussed. All three judges attended the same training session and so were exposed to the same supplemental oral explanation. They received mimeographed copies of the accounts (60 single-spaced typewritten pages) which had been edited to remove all mention of receiving a drug and which were coded to remove all names. A different code was used for the authors of each account and for mention of these same persons in other accounts so that one writer's impression of someone else's experience would not bias the judges.

The accounts were arranged in the same order for each judge. Matched pairs of subjects were placed consecutively with the order of experimental followed by control, or vice versa, determined by a coin-flip. The judges were instructed to read all the accounts through at one sitting and then to proceed with the individual scoring of each account one by one. With enough time allowed to finish all the categories in any account which was started, each judge gave qualitative score to each subcategory or category on a 0-3 scale, as described in the training manual. (Twenty-two items for each account, or 440 in all, were used.) The attempt to score each qualitative level of each item quantitatively was dropped. The scoring procedure was designed so that each account was read five times and different categories scored each time. The easiest categories (e.g., loss of time and space, and positive mood) were scored first. The more difficult categories were then scored after the account became more familiar through repeated readings. This technique was meant to reduce the chance that data would be missed. Each judge estimated that between 15 and 20 hours were required for the scoring of all 20 accounts. The Kendall Rank Correlation Coefficient (γ)¹⁰ was found by comparing ranks of the total scores given by each judge for the same subjects. The ranking procedure using the 0-3 scale was found to be quite reliable. The rankings of the judges' scores were found to have a high correlation with each other ($\gamma = .80$; p less than .001) (See appendix E).

There was *total* initial agreement among all three judges in 68.7% of the 440 items. After each judge's score on each item had been recorded, the three judges held a meeting in which consensus was reached on the remaining 31.3% or 138 items on which there had not been initial total agreement. The experimenter organized the meeting and explained the procedure, but did not participate in the discussion. He only listened to the deliberations from another room to gain an impression of how well the judges had understood the category definitions. For most of the items discussed two of the three judges were already in agreement. Most of the disagreement had been due to one judge having missed a piece of datum rather than a basic misunderstanding of the categories. The ease with which they came to final consensus reflected the good level of initial agreement as well as an adequate understanding of the categories. These final scores were used in statistical calculations which compared the scores of experimental and control subjects.

10. S. Siegel, *Nonparametric Statistics for the Behavioral Sciences* (New York: Mc-Graw-Hill, 1956), pp. 213-223.

Chapter V

DATA USED IN MATCHING OF SUBJECTS

Pre-drug Questionnaire and Interview Data

Rating Scale

For use in matching pairs of subjects groups of items from the pre-drug questionnaire were combined into categories which were scored by the experimenter with the following rating scale:

- 0 - None, or not experienced at all
- 5 - Very Strong
- 4 - Strong
- 3 - Moderate
- 2 - Slight
- 1 - So slight as to be Doubtful
- 0 - None or Not at All

This scale was adapted to the phenomena of each category. These categories and the score distribution for the twenty subjects are listed in table 1.

TABLE 1						
DATA USED IN MATCHING PAIRS OF SUBJECTS FROM PRE-DRUG QUESTIONNAIRES AND INTERVIEWS						
I. Religious Background	Frequency Distribution of Scores					
	5's	4's	3's	2's	1's	0's
A. Formal religious commitment & practice of parents	1	9	7	1	1	1
B. Religious atmosphere, influence, & training in the home	4	4	7	2	2	1
C. Participation in the life of the church up to high school graduation	4	8	5	1	1	1
D. Theological conservatism	0	2	7	7	4	0
II. Past Religious Experience						
A. Meaningfulness of public worship	0	11	7	1	1	0
B. Conversion or vocational decision experience	7	3	4	6	0	0
C. Certainty of vocational commitment	6	6	7	1	0	0
D. Intensity and regularity of prayer	5	5	5	3	2	0
E. Sense of sin	3	7	4	4	2	0
F. Experiences in nature	0	2	8	6	3	1
G. Transcendence of time and space	0	2	2	2	2	12
H. Sense of presence, mystical union, or experience of the Numinous	0	5	2	5	6	2
I. Joy, blessedness, peace	0	2	4	6	8	0
III. General Psychological Makeup						
A. Moralism	0	0	3	4	4	9
B. Apprehension about participation in the experiment	1	2	6	9	2	0
C. Suggestibility	6	4	4	5	1	0
D. Proverb interpretation	6 Negatives			14 Positives		

Categories

The first main division of categories was *religious background*. The formal religious commitment and activities of the parents were scored "5" if they were in full-time Christian service such as ministers of missionaries, "4" if they were very active in the life of the church as well as in attendance, "3" if they were faithful in attendance

at services but did not participate in many other activities, "2" if they were interested enough to be irregular attenders, and "1" if they were only interested enough to send their children to Sunday school or church. Religious atmosphere, influence, and training in the home were scored "5" if there were regular and meaningful family worship, prayers, grace, and religious discussions; "4" if only some of these activities were regularly practiced but in a meaningful way; "3" if they were irregular and partial, but meaningful; "2" if they were irregular, partial, and generally unmeaningful; and "1" if they were only occasional. Participation in the life of the church through high school graduation was scored "5" if the person regularly, actively, and meaningfully participated in all the activities of the church which were available to him such as Sunday school, church, young people's meetings, and summer church camp, "4" if he participated regularly and meaningfully as an attender but took no active part in planning or helping, "3" if he participated only in some of the activities he could have, "2" if he was an irregular participator because he found such activities not particularly interesting or meaningful, "1" if only an occasional participator; and "0" if he did not participate at all. The preparation for, and meaningfulness of, joining the church were also given consideration in this score. Theological conservatism was scored according to degree of orthodoxy, with "5" representing fundamentalism; "3" neo-orthodoxy, and "1" the most liberal liberalism. "4" and "2" indicated gradations between these positions. Theological discussions, however, were avoided during the interview.

The second major division of categories and the one on which the most time was spent during the pre-drug interview was *past religious experience*. Meaningfulness of public worship (including communion services) was scored "5" if it was usually very meaningful; "4" if it was sometimes very meaningful; "3" if it was usually moderately meaningful; "2" if it was usually slightly meaningful; and "1" if it was usually unmeaningful. Conversion or vocation decision experience was scored according to the intensity of original emotional expression in relation to the present significance of the experience. A "5" experience was one that was sudden, climactic, dramatic, and intense and provided considerable emotional release. The person at the time of the interview still regarded the experience as a peak experience, a turning point, and still significant in his on-going life. A "4" experience was similar but not as intense, although still meaningful. A "3" experience was similar to "5" or "4" in intensity of original emotional expression but one which was not still considered particularly important, valuable, or meaningful. A "2" experience did not have the sudden or "twice-born" character, but was a slowly-dawning gradual decision which was made after considerable thought, yet remained very significant for the on-going life of the subject. A "1" experience was purely a gradual intellectual decision without much emotional involvement.

Certainty of vocational commitment combined such elements as sense of call, dedication, and definiteness of future plans, but was scored on strength of certainty. Intensity and regularity of prayer life (exclusive of public worship) were scored "5" if the person had an active and regular personal devotional life which had great meaning for him. Sin combined both general and specific senses of sin.

The more characteristic mystical elements were divided into four categories: 1) experiences in nature; 2) transcendence of time and space; 3) sense of presence, mystical union, or experience of the Numinous; and 4) joy, blessedness, and peace. These categories were scored "5" only if they corresponded to the most complete or intense degree of the typology of mysticism. A score of "4" meant a definite though less complete resemblance. Lesser degrees were scored from 1-3 with a score of "1" having only the faintest general similarity.

The third main division was *general psychological make-up*. Moralism was evaluated by asking the person about his attitude toward smoking and drinking in himself and others. A score of "5" indicated a very puritanical and legalistic attitude. The degree of apprehension that the person felt about participation was scored after review of several points in the interview. There had been a discussion of direct fears about immediate or long-term effects, the appropriateness of using drugs in a religious service (to discover any prejudice against such an experiment), and the motivation for volunteering. The person had also been asked how apprehensive he felt. A score of "5" for suggestibility meant that the person fell backwards almost immediately without trying to fight the suggestion of the wind. Scores of 4-2 represented persons who eventually fell with varying degrees of resistance. A score of "1" meant that the person did not fall backwards, but was suggestible enough so that he had to fight to maintain balance. Each person's interpretation of the proverb about the rolling stone was listed as either P (for positive), meaning that a person who keeps active and moving does not get stagnant, or N (for negative), meaning that a person who doesn't settle down to one thing is shiftless and will never accomplish anything. This was assumed to be one measure of the person's

background and general outlook on life.

The data in table 1 show the homogeneity of the volunteers in terms of religious background, interest, and experience. Other pre-drug questionnaire data also supported this conclusion. The very fact that they were all undergoing professional training for the Christian ministry at a denominational seminary tended to serve as a screening factor. All volunteers were healthy young males between the ages of 22 and 35. The average age was 24. 17 out of the 20 were first year students and had recently graduated from college. They were all from the free church tradition. Denominations represented were Baptist (9), United Church of Christ (7), Congregationalist (1), and Swedenborgian (3).

Description of Average Subject

The average subject came from a home where there was interest in religion but not in an extreme way, and the parents were active in the church. He attended Sunday school as a child and joined the church in his early teens. During high school he attended the church youth group and perhaps went to summer church camp. The decision to take ministerial training was a gradual one which was made during college after much consideration of vocational possibilities. It was done with serious commitment although at present the exact type of ministry was not certain. At some point there had been a sudden conversion which was prompted by the kind of religious service which stressed a "personal decision for Christ" in order to be "saved". The theology behind the experience had been rethought and modified, but the experience was regarded as important in the religious development of the person. His theological position was neo-orthodox. He was generally unfamiliar with the characteristics of mystical experience either through experience or reading. The elements which were present were only of low intensity and completeness. Prayer was regarded as important and some kind of private devotional life was practiced in addition to public worship, which was usually moderately meaningful. Sense of sin was moderately well developed. Moralism was low. There was openness to the possibility of a meaningful religious experience through the use of psilocybin. Apprehension about participation was moderate. Suggestibility was high.

California Psychological Inventory Data

Certain categories of the California Psychological Inventory were chosen as most relevant for matching subjects whom it was hoped would have similar natural inclination for the mystical state of consciousness. The assumption was made that psychological make-up would have something to do with the potentiality for such experiences. The categories which were used in matching are listed in table 2 which gives a summary of the range of scores, median score, and average score for each category. As a whole the medians and averages were all between 55 and 63 except for socialization and self control which were just below 50. There were more scores above 50 than below and not too many extremely high or low scores. The majority of scores were between 40 and 60. Self acceptance had the most scores above 60. Flexibility had the widest range (37-79).

TABLE 2
FROM THE CALIFORNIA PSYCHOLOGICAL INVENTORY: RELEVANT SCORES USED IN MATCHING PAIRS OF SUBJECTS

Categories	Range of Scores	Median Scores	Average Scores
Sa (self-acceptance)	41-82	63.0	63.7
Wb (sense of well-being)	26-66	56.0	53.15
So (socialization)	29-61	48.5	49.85
Sc (self-control)	34-62	47.0	48.2
To (tolerance)	32-69	59.0	58.5
Py (psychological-mindedness)	47-69	59.5	59.9
Fx (flexibility)	37-79	62.5	62.5
Fe (femininity)	34-70	55.0	53.0
Sy (sociability)	39-65	59.0	57.8

The data in tables 1 and 2 plus the general impression from the two-hour interview were used in matching the twenty subjects into ten pairs. The categories listed under past religious experience were given the most weight, especially the more mystical elements, conversion or vocation decision experience, vocational

commitment and devotional life. Next in importance were the categories under religious background. Categories under general psychological make-up and scores on the California Psychological Inventory were not given as much weight in the matching decisions. The general impression of the person by the interviewer also played a significant part, especially where the other data did not indicate a clear cut match. The pairings were done mostly on the basis of subjective impressions by the interviewer, because he scored the pre-drug questionnaires, but were done before the administration of the drug. The initial impressions which the volunteers gave were confirmed, rather than changed, by subsequent interviews.

Chapter VI

DATA FROM QUESTIONNAIRES, INTERVIEWS, AND CONTENT ANALYSES

Data Relevant to the Categories of the Typology of Mysticism

Method of Presentation

The available data for each category will be discussed separately, and the relevant information from the methods used to measure each category will be compared. The post-drug questionnaire (within one week), followup questionnaire (six months later), and judges' content-analysis of individual accounts (written a day or two after the experience as well as after six months) complement each other and measure the same category from different perspectives. For example, the followup questionnaire was not an attempt to repeat the same individual items exactly as in the post-drug questionnaire, but to measure the same category in a clearer or more precise way. The judges' score was on most cases a single category score which was based on the definition of each category as explained in the training manual. Each category will also be illustrated by quotations from individual accounts and tape recordings.

The single-tailed, non-parametric Sign Test was used throughout in statistical calculations of significance levels both for individual items and items combined into categories.¹ For each pair the score or sums of scores (for more than one item) of the control subject was subtracted from the comparable score of the matched experimental subject, and the number of differences was counted. In the tables "N" is the number of pairs with a difference (differences of 0 were not counted); the statistical calculation took into account the relative number of differences with a positive or negative sign. The prediction was made for most of the phenomena measured that the experimental subjects who took psilocybin would score significantly higher than the controls. The items for which a higher control score was predicted will be indicated.

The items used for each method of measurement were listed for each category with the level of probability (p) that the difference between the experimentals and controls was due to chance. A p -value less than .05 means that the experimentals (as predicted unless otherwise indicated) scored significantly higher than the controls on the phenomena described by that item or category. In other words there would be less than five chances in one hundred that the observed difference was due to chance rather than to psilocybin. The p -values were listed for individual items which measured the category for groups of items within the category, and for each category as a whole (i.e., the combination of all the items in the category).

The scores of the combined items in each category or sub-category were summarized in table form.² The frequency distribution of scores at comparable levels on the rating scale of each method of measurement were listed (i.e., the number of *times* that the ten experimentals or controls responded at each level). The total numerical sum of all scores at all levels for the ten experimentals and ten controls was listed next to the maximum possible score (i.e., the numerical sum obtained if all subjects had scored all items at the highest possible level). The p -value for the combination of items was also indicated.

The data were arranged to answer four questions for each category. Each question expressed a progressively more rigorous examination of the data to elicit the similarities and differences between the phenomenology of the drug experience and that of the mystical typology. 1) Did the experimentals score significantly higher than the controls on a combination of the scores of all items in the category? This question was answered by the p -value for the category. 2) If there was a significant difference in the category as a whole, was it because of high or low scores? The difference between "4" and "0" and "1" and "0" counts the same under the Sign Test. This question was answered by a comparison of the total score and frequency distribution for experimentals

1. For a detailed explanation of the Sign Test and the tables used see Siegel, *op. cit.*, pp. 65-78.

2. See appendix F for a more detailed explanation of the columns and symbols used in the tables.

and controls. 3) Which individual items in the category showed a significant difference between experimental and control scores? This question was answered by each item's *p*-value, which was calculated using all scores on the scale for that item. 4) Did the difference in these items remain significant if only the scores at the top of each scale were used in calculation of the difference? This question was answered by another application of the Sign Test to the items selected in question 3, but all differences which were obtained from scores of "moderate" or lower were counted as 0. This loss of data would be expected to increase the probability (*p*) that the difference between experimentals and controls was due to chance unless, in fact, the difference was originally due a strong scores, which would indicate that this phenomenon of the mystical typology had been experienced to a complete degree. The cluster of items which emerged as most significant were then compared to the original definition of the category.

Another technique of analysis was also employed. In some categories the number of items which contributed to the category covered a broad range. Some of these items corresponded more closely to the *a priori* definition of the category than others which were more supplementary but which helped to gather all evidence for the category. Therefore, not only will the results of the combined scores of all items related to the category be given, but also the combination of only those items most crucial to the category as defined in the mystical typology above. The use of this technique added precision to the analysis. The significance level of these essential items when only "strong" scores were used was a valuable measure of the completeness of the category.

Category I: Unity

As shown in Table 3, the experimental subjects scored significantly higher than the control subjects on the category of unity as a whole when the scores of individual items in all subcategories were combined (*p* less than .002 for all three methods of measurement). In other words there were only two chances in 1000 that this difference was due to chance rather than to psilocybin. The score distribution revealed that the experimentals had higher total scores and many more "strong" scores (maximum possible on various rating scales) than the controls, who had relatively few scores as high as "moderate" and a predominance of scores of "0".

Each subcategory was analyzed both as a combination of items and item by item in order to discover the contributing factors to the significance of the data as a whole.

Items	Subject group (<i>n</i> =10)	Frequency Distribution (Number of <i>times</i> scored)				Total score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	<i>N</i>	<i>p</i>
13 Post-drug:	Exper:	68	12	22	28	337	520	10	.001
	Contr:	1	11	18	98	65	520		
14 Follow-up:	Exper:	72	4	20	45	387	700	10	.001
	Contr:	0	9	12	120	45	700		
2 Content Analysis:	Exper:	9	5	2	14	39	60	9	.002
	Contr:	0	1	0	29	2	60		

Internal Unity

As shown in Table 4 the subcategory of internal unity as a whole was significant at the .002 level for all three methods of measurement. The score distribution revealed that with all three methods the experimentals had had more total score and a predominance of scores at the top of the scales, while the controls had only a few scores as high as moderate and a predominance of scores of "0".

TABLE 4
Category I: UNITY
Internal Unity

Items	Subject group (n=10)	Frequency Distribution (Number of times scored)				Total score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	N	p
4 Post-drug: P72a, P73, P74, P9	Exper:	24	3	7	6	113	160	10	.001
	Contr:	0	5	1	34	17	160		
6 Follow-up: F18, F19, F33, F42, F43, F47	Exper:	33	2	8	18	178	300	9	.002
	Contr:	0	4	3	53	16	300		
1 Content Analysis: C7	Exper:	6	3	0	1	24	30	9	.002
	Contr:	0	1	0	9	2	30		

The eleven individual items which measured this subcategory are listed in Table 5 with the probability of each that the higher scores of the experimentals were due to chance rather than psilocybin. All the individual items had a p less than .008 except F43 which is the same as F42 only with a negative rather than positive value judgment by the subject about the phenomenon of loss of self. The fact that F43 did not show a significant difference between experimentals and controls would imply that the experimentals regarded their experience of loss of self as more positive than negative. When highest possible or "strong" scores were used in computing differences between pairs of experimentals and controls, only P74 (unity with ultimate reality) lost its significance (p less than .063). Perhaps this loss was due to the addition of the interpretive phrase, "ultimate reality," as was suggested by several subjects during the interviews. The items which were most essential to the definition of internal unity (loss of sense of self, loss of all sense impressions, and pure awareness) remained significant at the .04 level and most of the items were significant at the .01 level. All three methods of measurement were consistent.

The content analysis data illustrated these essential elements:

TABLE 5
LIST OF ITEMS USED TO MEASURE INTERNAL UNITY

	p values (for experimentals)	
	Using all scores:	Using only "strong" scores:
(1) Post-drug questionnaire data (4 items):		
P9 Loss of self:	.001	.008
P72a Sense of the loss of the multiplicity of all particular sense impressions:	.004	.016
P73 Pure awareness with no empirical distinctions (i.e., one is beyond the self-consciousness of sense impressions, yet one is not unconscious):	.002	.008
P74 Sense of unity with ultimate reality at the level described by 72a & 73:	.008	(.063)
(2) Follow-up data (6 items):		
F18 Loss of your own identity:	.004	.008
F19 Pure awareness beyond any empirical content:	.002	.004
F33 Fusion of the self into a larger undifferentiated whole:	.008	.032
F42 Loss of sense of self as a predominantly positive experience:	.004	.008
F43 Loss of sense of self as a predominantly negative experience:	(.13)	(.25)
F47 Freedom for the limitations of the self in connection with a unity or bond with what was felt to be all-encompassing and greater-than-self:	.004	.032
(3) Content-analysis data (1 item):		
C7 Internal unity:	.002	.016

Experimental Subject RM:

I saw the cosmos. It was all molten plastic. Then I knew that I must be somewhere there. Where was my self? What am I? Where am I in the real (plastic) world? Then I was afraid no more. My self is no one place, but in many places. It floats, I float. Body is not real. Only the adventurous *self* is real. The adventurous self floats into all Being, the orange plastic cosmos. It leaves the old ego behind. The old ego is behind but it glows like a far away harbor light. I can always return.

(Comment: This is a good example of lostness of self and unity with all Being, symbolized by "the orange plastic cosmos").

Experimental Subject KR:

I found myself grunting in agreement or mumbling "Of course, it has always been this way" over and over again as the panorama of my life seemed to be swept up by this unifying and eternal principle. ... I seemed to relinquish my life in "layers"; the more I let go, the greater sense of oneness I received. As I approached what I firmly believed to be the point of death, I experienced an ever greater sense of an eternal dimension to life. There seemed to be infinite possibilities of time and space.

Experimental Subject QX:

I lapsed into a period of complete lostness of self that must have lasted for an hour but seemed very brief. This was a blank sensation, better still, a void. ... My experience seemed to be dominated by a sense of *oneness, unity, and harmony.*

(Comment: This resembles the classical phenomenological description of undifferentiated unity with pure awareness yet no specific content and loss of usual sense of self.)

The evidence from total scores of all items, frequency distribution, and individual item analysis has indicated that psilocybin induced the phenomena of internal unity in the experimental subjects to a rather complete degree.

External Unity

As shown in Table 6, this subcategory was significant at the .016 level for all methods of measurement. The distribution of scores revealed that the controls hardly experienced the phenomena of external unity at all and none to more than a slight degree. The predominance of high scores for the experimentals was not so marked as in the case of internal unity. All individual items were significant at the .032 level except oneness through objects other than people (C8), which had a *p* greater than .25. C8 is more crucial to the definition of external unity than oneness through people (C9), unless the underlying unity of the whole external world were experienced through people as the means for the expression of this deep and broad unity of all things. For his to be the case, however, the highest scores on the judges' rating scale should have been used (i.e., "3's"), but for both C8 and C9, *p* is greater than .25 when only these top scores were used.

Items	Subject group (n=10)	Frequency Distribution (Number of times scored)				Total score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	N	p
4 Post-drug: P68, P69, P70, P71	Exper:	14	4	8	14	80	160	8	.008
	Contr:	0	0	4	36	5	160		
3 Follow-up: F25, F37, F44	Exper:	11	0	5	14	58	150	6	.016
	Contr:	0	0	1	30	2	150		
2 Content Analysis: C8, C9	Exper:	3	2	2	13	15	60	6	.016
	Contr:	0	0	0	20	0	60		

The dissolving of the subject-object dichotomy (P68) and loss of feelings of difference from objects (F25) are essentially the same phenomenon and were the only items which remained significant at the .032 level under such a rigorous treatment of the data. This phenomenon is an important element in the experience of external unity and is alone enough to make the data from this category qualify as an example of this subcategory of the mystical typology. Against this evidence must be placed the lack of confirmation from the judges. The content analysis data showed a greater depth of underlying cosmic unity or oneness through people than through

objects.

Experimental Subject HQ:

Couple of times I kicked against YS's leg accidentally, and I opened my eyes, for my foot seemed to combine with his left leg.

Experimental Subject QX:

I remained in a bent a prayerful position, but I was not praying. What seemed to be happening was my becoming complete, i.e., my body was whole or one. My arms seemed to merge into my body, yet I knew I still had arms. I could rub my hands into my legs, yet I still had hands. Everything was a part of the other yet distinct in itself. From this, I moved to a oneness with the pews, both the one I was sitting on and the one in front of me. The pew seemed to be giving itself to me when I would turn in my seat or assume different positions. It seemed to "give" to my movements all the while aiding and giving to my comfort. Even my legs which touched against the pew in front of me seemed to find an extremely giving and helping friend in the wooden pew.

(Comment: These two examples of the dissolution of the subject-object dichotomy do not have the cosmic dimension at this point in the experience.)

Experimental Subject KR:

Early in the sequence, the "I"- "You" structure broke down both in relation to my inner experience and to the others in the room. A sense of "we-ness" took its place eventually.

Experimental Subject QX:

My attention was directed toward L6 when I felt a sensational oneness with him. I felt he and I had seen and interpreted life as it truly was meant to be understood, i.e., as man in harmony and love and oneness through all eternity.

For more examples of oneness through people see the section on love in Category III below.

	p values (for experimentals)	
	Using all scores:	Using only "strong" scores:
(1) Post-drug questionnaire data (4 items):		
P68 Paradoxical dissolving of the subject-object dichotomy in spite of the empirical multiplicity of objects (they are still perceived as separate):	.008	.016
P69 Intuitive experience of the essences of objects:	.016	(.13)
P70 Sense of unity with these objects:	.008	(.13)
P71 Felt awareness of the life or living presence in all things:	.032	(.25)
(2) Follow-up Questionnaire data (3 items):		
F25 Loss of feelings of difference from objects:	.016	.032
F37 Intuitive experience of the essences of objects:	.032	(.63)
F44 Sense of unity with objects:	.032	(.5)
(3) Content-analysis data (2 items):		
C8 Oneness through external objects other than people:	(.25)	(1)
C9 Oneness through people:	.032	(.25)

The strongest evidence for external unity is from the questionnaire data because of the dissolution of the subject-object dichotomy. The content analysis failed to show the depth and breadth necessary for the most

complete level. We conclude, therefore, that the phenomenon of external unity did occur in the experimental subjects but in an incomplete way.

Supplementary Phenomena

The items in this subcategory as explained in the typology are corroborative, but not definitive, phenomena which occur in connection with either internal or external unity or both. Table 9 lists these items and their significance levels which indicate that the experimentals showed significantly higher scores than the controls (p less than .016) for most individual items. Only P77 (consciousness of a "Beyond" or "More") and P67 (sense of being a part of a larger whole) showed no significant difference between experimentals and controls. During the interviews several subjects commented that the "Beyond" or "More" seemed to imply a theological interpretation which they were not ready to make. Only items F36 (feeling of completeness) and F49 (unity with ultimate reality) lost significance when only "strong" scores were used. In F49 the interpretive phrase "ultimate reality" (cf. P74) may have been responsible.

As seen in Table 8 the scores of the experimentals compared to those of the controls followed the same pattern in score distribution and significance level of difference, as for the category of unity as a whole (p less than .001). We conclude that these closely related items strengthen, and certainly do not weaken, the conclusions made about the subcategories "internal" and "external unity."

TABLE 8
Category I: UNITY
Supplementary Phenomena

Items	Subject group (<i>n</i> =10)	Frequency Distribution (Number of <i>times</i> scored)				Total score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	<i>N</i>	<i>p</i>
5 Post-drug: P67, P77, P78, P79, P96a	Exper:	30	5	7	8	144	200	10	.001
	Contr:	0	6	13	30	43	200		
5 Follow-up: F31, F32, F36, F41, F49	Exper:	28	2	7	13	151	250	10	.001
	Contr:	0	5	8	37	27	250		

TABLE 9
LIST OF SUPPLEMENTARY PHENOMENA OF UNITY

	<i>p</i> values (for experimentals)	
	Using all scores:	Using only "strong" scores:
(1) Post-drug questionnaire data:		
P67 Sense that what is experienced forms part of a larger whole:	(.26)	(.26)
P77 Consciousness of a "Beyond" or "More":	(.15)	(.15)
P78 Expansion of usual personal consciousness to other dimensions <i>within</i> the self:	.001	.008
P79 Expansion of usual personal consciousness to other dimensions <i>beyond</i> the self:	.004	.004
P96a Sense of belonging to a new and greater unity during the experience:	.008	.063
(2) Follow-up questionnaire data:		
F31 Expansion of usual personal consciousness to other dimensions <i>within</i> the self:	.001	.001
F32 Expansion of usual personal consciousness <i>beyond</i> the self:	.004	.016
F36 Feeling of completeness:	.004	(.13)
F41 Sense of belonging to a new and greater unity:	.008	.016
F49 Unity with ultimate reality:	.016	(.13)

Category II: Transcendence of Time and Space

As is shown in Table 10, this category as a whole had significantly higher scores for experimentals than for controls (p less than .001 for all three methods of measurement). The distribution of scores showed a predominance of high scores for the experimentals and "0's" for the controls. On the basis of total scores, controls experienced these phenomena to a negligible extent. As shown in Table 11, when the subcategories of time and space were analyzed separately, all the differences between experimentals and controls were in the same direction as in the analysis of the category as a whole (p less than .001 for time and less than .004 for space). In other words there were less than four chances in 1000 that this transcendence of time and space was due to chance rather than psilocybin.

The individual items which were used to measure the subcategories of time and space are shown in Table 12. All individual items were significant in the same direction (p no greater than .004 for any item). When only the "strong" level scores were used, all the items remained significant on at least the .016 level.

Examples of the loss of sense of time were numerous in the content-analysis data:

TABLE 10
Category II: TRANSCENDENCE OF TIME AND SPACE
Combination of all Subcategories

Items	Subject group (n=10)	Frequency Distribution (Number of times scored)				Total score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	N	p
5 Post-drug:	Exper:	39	0	4	7	162	200	10	.001
	Contr:	0	2	3	45	12	200		
5 Follow-up:	Exper:	37	3	5	5	195	250	10	.001
	Contr:	0	3	5	42	17	250		
2 Content Analysis:	Exper:	16	4	0	0	56	60	10	.001
	Contr:	0	0	4	16	4	60		

TABLE 11
Category II: TRANSCENDENCE OF TIME AND SPACE

Items	Subject group (n=10)	Frequency Distribution (Number of times scored)				Total score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	N	p
Transcendence of Time									
2 Post-drug: P75, P80	Exper:	17	0	2	1	71	80	10	.001
	Contr:	0	2	1	17	8	80		
3 Follow-up: F1, F26, F35	Exper:	25	0	3	2	125	150	10	.001
	Contr:	0	3	2	25	12	150		
1 Content Analysis: C1	Exper:	8	2	0	0	28	30	10	.001
	Contr:	0	0	2	8	2	30		
Transcendence of Space									
3 Post-drug: P76, P81, P72	Exper:	22	0	2	6	91	120	8	.004
	Contr:	0	0	2	28	4	120		
2 Follow-up: F2, F34	Exper:	12	3	2	3	70	100	9	.002
	Contr:	0	0	3	17	5	100		
1 Content Analysis: C2	Exper:	8	2	0	0	28	30	10	.001
	Contr:	0	0	2	8	2	30		

TABLE 12
LIST OF ITEMS USED TO MEASURE TRANSCENDENCE OF TIME AND SPACE

	p values (for experimentals)	
	Using all scores:	Using only "strong" scores:
(1) Transcendence of Time		
a. Post-drug questionnaire data:		
P75 Transcendence of time in the sense defined by items 72a to 74 (internal unity):	.002	.004
P80 Transcendence of time in the sense defined by items 77 to 79 (supplementary phenomena of unity):	.001	.002
b. Follow-up questionnaire data:		
F1 Loss of usual time sense:	.001	.001
F26 Eternity:	.002	.008
F35 Timelessness:	.004	.008
c. Content-analysis data:		
C1 Loss of usual sense of time:	.001	.004
(2) Transcendence of Space		
a. Post-drug questionnaire data:		
P72 Paradoxical transcendence of space as defined in items 68 to 71 (external unity):	.004	.008
P76 Transcendence of space in the sense defined by items 72a to 74 (internal unity):	.004	.008
P81 Transcendence of space in the sense defined by items 77 to 79 (phenomenon of unity):	.004	.004
b. Follow-up questionnaire data:		
F2 Loss of usual awareness of where you were:	.002	.016
F34 Spacelessness:	.004	.016
c. Content-analysis data:		
C2 Loss of usual sense of space:	.001	.004

Experimental Subject HQ:

It seemed that I was there for the longest time. I recall looking at the clock again and again, but it didn't change.

Experimental Subject SE:

I kept looking at my watch and thinking, looking and thinking, looking and thinking - time seemed to stand still, to be endless.

Experimental Subject QX:

Matter and time seemed to be of no consequence. I was living in the most beautiful reality I had ever known, and it was eternal.

Experimental Subject CZ:

Space and position were meaningless - I could as well have been wandering lost on the moon.

Experimental Subject GP:

The place was nowhere I had ever been, nor any place that I belonged in. I was afraid sometimes that there was nothing outside, or before, or after ... I did not know where I was, nor when it was, nor where I had come from nor how long I had been there.

Experimental Subject EB:

Somewhere about this time I lost contact with myself ... There was no center; there was no sense of time; there was no sense of space in the physical sense. I just felt a sense of unity with an endless world of abstract, colorful beauty which didn't seem to be going anywhere, but just was...

(Comment: Some of these examples show that transcendence of time and space is an integral part of the experience of internal unity.)

We conclude from the data presented in this section that the transcendence of time and space, corresponding to the most complete degree defined by our typology of mysticism, was experienced by the experimental subjects who took psilocybin.

Category III: Deeply Felt Positive Mood

As shown in Table 13, the experimental subjects scored significantly higher than the controls when the scores of individual items in both subcategories of deeply felt positive mood were combined (p less than .020 for all three methods of measurement). The frequency distribution of scores revealed that all of the highest scores were recorded by the experimental subjects, and the controls recorded the great majority of the "0's". In the middle range of the rating scales, however, the balance was more even between experimentals and controls.

For more precise analysis, the two subcategories were treated separately.

Items	Subject group (n=10)	Frequency Distribution (Number of times scored)				Total score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	N	p
12 Post-drug:	Exper:	40	33	23	28	284	400	9	.020
	Contr:	3	36	27	54	167	400		
10 Follow-up:	Exper:	50	5	15	21	269	500	9	.020
	Contr:	6	15	24	45	115	500		
3 Content Analysis:	Exper:	9	4	7	10	42	90	9	.002
	Contr:	0	0	3	27	3	90		

The most universal phenomena (Joy, Blessedness, and Peace)

As seen in Table 14, the combined scores of the sixteen items describing joy, blessedness, and peace were significantly higher for experimentals than controls from all three methods of measurement (p less than .020). Although the controls scored these phenomena on the lower ranges of the scoring scales, the highest scores were exclusively from the experimentals as seen from the total scores and frequency distribution. These items are listed in Table 15. All items which were aspects of joy were significant at the .020 level except F13, happiness. No individual items under blessedness and peace were significant (p greater than .063 in all cases). When only the "strong" scores were used, exultation (P39), ecstasy (F13), delight (F29), and joy (F39) remained significant (p less than .032), but important items which lost their significant difference were ecstatic joy (P52) and joy (C3) (p less than .063).

TABLE 14
Category III: DEEPLY FELT POSITIVE MOOD

Items	Subject group (n=10)	Frequency Distribution (Number of times scored)				Total score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	N	p
Joy, Blessedness, Peace									
7 Post-drug: P39, P52, P44, P50, P14, P7, P49	Exper:	23	13	17	17	158	280	9	.020
	Contr:	0	11	16	43	60	280		
7 Follow-up: F13, F11, F29, F39, F40, F12, F45	Exper:	32	4	9	16	173	350	9	.020
	Contr:	4	8	11	37	59	350		
2 Content Analysis: C3, C5	Exper:	7	2	4	7	29	60	9	.020
	Contr:	0	0	1	19	1	60		
Love									
5 Post-drug: P41, P43, P90a, P122, P124	Exper:	17	16	6	11	126	200	8	(.15)
	Contr:	3	25	11	11	107	200		
3 Follow-up: F24, F28, F51	Exper:	18	1	6	5	96	150	10	.055
	Contr:	2	7	13	8	56	150		
1 Content Analysis: C4	Exper:	2	2	3	3	13	30	8	.035
	Contr:	0	0	2	3	2	30		

TABLE 15
LIST OF ITEMS USED TO MEASURE THE MOST UNIVERSAL PHENOMENA OF DEEPLY FELT POSITIVE MOOD (JOY, BLESSEDNESS, AND PEACE)

	p values (for experimentals)	
	Using all scores:	Using only "strong" scores:
(1) Post-drug data (7 items):		
P39 Exultation:	.020	.032
P44 Exuberance:	.002	(.13)
P50 Overflowing energy:	.008	(1)
P52 Ecstatic joy:	.004	(.063)
P14 Sense of well-being:	(.38)	(.38)
P47 Blessedness:	(.15)	(.15)
P49 Peace:	(.09)	(.09)
(2) Follow-up questionnaire data (7 items):		
F11 Ecstasy:	.004	.016
F13 Happiness:	(.23)	(.23)
F29 Delight:	.016	.016
F39 Joy:	.016	.032
F46 Exultation:	(.37)	(.37)
F12 Peace:	(.50)	(.50)
F45 Blessedness:	(.11)	(.13)
(3) Content-analysis data (2 items):		
C3 Joy:	.020	(.063)
C5 Peace or blessedness:	(.063)	(.13)

Experimental Subject KR:

Having died only to have life given back gave me a tremendous sense of exultation and manliness. I grasped the back of the pew or wooden upright in front of me as I exclaimed and I delighted in the heightened sensations of all five senses.

Experimental Subject GP:

I heard PK (or whoever it was) return to the chapel and play "Jesus Christ is Risen today, Hallelujah!" I had a brief but violently intense feeling of joy.

Experimental Subject FK:

Then I read the Scripture, put out the candles (which I believe to be symbolic of the crucifixion of Christ), and after more *blackness*, found myself in the pulpit, preaching about love and peace. ... I attempted to play the organ, wanting to play "Christ the Lord is Risen Today," being motivated by a strange sense of joy in the reality of this event.

(Comment: This example shows the close relationship between various elements of positive mood as well as their possible close interrelation with sense of sacredness.)

Other evidence of blessedness and peace combined with a sense of sacredness is as follows:

Experimental Subject KR:

Opening my eyes I noticed that tears were streaming down L1's face, that we were all caught up in a glow of holy light from off the altar, that we were all participating in one great cosmic drama of all races, creatures and eras, in short, that we were experiencing beatitude.

Experimental Subject QX:

There seemed to be complete support from all the surrounding elements; no hostility at all was present in anything. I would on occasion lower my head and close my eyes as if to pray and would seem to be in the realm of eternity. It was sheer bliss and something I didn't want to leave.

Control Subject BL:

Such communion with God as I experienced on Good Friday is not quite the same as another experience with the Divine which I describe through such terminology as "being grasped," or melting." I did not approach this experience of "exalted or divine tenderness" which in the past has caused me to feel one with everything that is. The peace which comes through this experience was missing from the worship Service on Good Friday.

This control subject did not experience the most profound peace he has ever known but he did score peace and blessedness at a level of "moderate" degree. Other controls also scored these items. The experimentals in general did not score peace to the most complete degree as shown by the lack of significant difference between experimentals and controls on each individual item which measured these phenomena.

We conclude that although the subcategory as a whole showed a significant difference between experimentals and controls, the difference was due to the usually intense joy which was a part of the psilocybin experience. Because all the data were not consistent in measuring this joy at the highest intensity, we conclude that the experience of the experimentals was not the most complete example of the joy described by your typology for this category.

Closely Related Phenomena (Love)

Although love is not one of the *universal* characteristics of the typology of mysticism, the experience of love may occur in connection with joy, blessedness, and peace. As seen in Table 14, the experimentals experienced the phenomena of love more than the controls at a significance level of .055 in the follow-up data and .035 in the content analysis data. The experimentals had higher total score and had more strong scores with each method of measurement. The reason for no significant difference in the post-drug data was that the controls also scored this phenomenon (total score of 126 for experimentals and 107 for controls).

The nine items which were used to measure the phenomenon of love are listed in Table 16. Individual items were mostly not significant at the .05 level except for P41, F24, and C4 (p less than .035). The only item which remained significant when only "strong" scores were counted was F24, deep interpersonal relations (p less than .035).

Cosmic love such as love of God was not significant. Psilocybin seemed to increase depth of interpersonal relationships on a very human level both for experimentals and the controls with whom they interacted.

TABLE 16
LIST OF ITEMS USED TO MEASURE LOVE

	p values (for experimentals)	
	Using all scores:	Using only "strong" scores:
(1) Post-drug questionnaire data (5 items):		
P41 Love:	.035	(.063)
P43 Tenderness:	(.66)	(.66)
P90a Feeling of love toward others:	(.38)	(.38)
P122 Did you particularly like or feel close to either of leaders?:	(.11)	(.25)
P124 Did you particularly like or feel close to any participant in the experiment?:	(.35)	(.35)
(2) Follow-up questionnaire data (3 items):		
F24 Deep interpersonal relations with other people present:	.035	.035
F28 Love:	(.26)	(.26)
F51 Love of God or Christ:	(.26)	(.26)
(3) Content-analysis data (1 item):		
C4 Love:	.035	(.25)

Some examples of such love from the content-analysis data are as follows:

Experimental Subject EB:

There was a certain feeling that all people were good, and that I wanted to *love* them for it.

Experimental Subject FK:

However, my strongest feelings were toward L3, who in a sense wanted to help me. Never before have I sensed such a feeling of *filia* (Greek for love, i.e., friendship); he represented the forces of good, forcing me to face my frailty and human fallibility; ... I felt that the only one who really understood me when I was "under", was L3, for he understood what I was going through, for he had undergone the same experience himself. This alone, not counting the other far more significant aspects of my experience, would make the situation of real value.

Experimental Subject QX:

I looked up at the front of the Chapel but the light seemed to be too bright for my eyes and I had to lower my head. I was overcome by a feeling of oneness with L6 and FK. I seemed to be caught up in a realm of complete understanding of them and with them.

All this time, I felt a strong pull to FX - which said to me he needed my support if nothing else. I saw him as himself but also as representing all men, and I knew deep within that I could not turn my back on him. At that time, I went over and sat by him. I did not speak a word. I just sat in a chair between him and L6. Another fellow was sitting on the sofa with FK, and during one of the songs he and FK clasped hands and this was very beautiful and significant to me, for I saw two men at one with each other in genuine love existing in eternity.

(Comment: The depth of oneness expressed by QX is an example of the oneness through people which can be part of the subcategory "external unity." This example shows the relationship between the two subcategories of "love" and "external unity.")

Control Subject NJ:

FK went to the altar, turned around, and showed us his face - a face I had never seen before on a human being. This caused the service to be more meaningful than ever before - why? Although FK moved up to the altar with a vigorous drive, clutched the cross firmly, exhibiting such strength, and a first seemed as if he was going to tear everything from one end to the other, he turned and showed himself differently. His face showed as much love, gentleness, sincerity and strength to bear real suffering as any face has ever shown.

(Comment: NJ's experience of love was caused by the experimental subject FK's experience.)

We conclude, therefore, that although the category of "deeply felt positive mood" was significant as a whole for all three methods of measurement, psilocybin produced the most significant difference between experimentals and controls in this category in the experience of joy. There was also a difference in the experience of love on a human level for the most part, but not so significantly, and the experience of blessedness and peace was not significantly different between experimentals and controls.

Category IV: Sense of Sacredness

As seen in Table 17, the combined scores of all items related to this category were significantly higher for the experimentals than for the controls from the post-drug data (*p* less than .020). From the follow-up data, the significance level was .055, and the content-analysis data showed no significant difference (*p* equal to .37). In other words, the evidence is very suggestive but not conclusive that psilocybin induced a sense of sacredness in the experimental subjects. In all methods of measurement, a basic pattern in the data was reflected by the frequency distribution of scores. The top-of-the-scale scores were made almost exclusively by the experimentals. The controls, however, had more total middle-range scores than the experimentals did.

Items	Subject group (n=10)	Frequency Distribution (Number of times scored)				Total score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	N	p
13 Post-drug:	Exper:	52	23	22	33	304	520	9	.02
	Contr:	1	25	55	49	173	520		
8 Follow-up:	Exper:	43	5	12	20	231	400	10	.055
	Contr:	3	10	30	37	99	400		
1 Content Analysis:	Exper:	4	1	0	5	14	30	8	(.37)
	Contr:	0	2	4	4	8	30		

The twenty-two items which were used to measure sacredness are listed in Table 18 with the probability that the difference found in each case was due to chance rather than psilocybin.

Only eight out of these twenty-two individual items showed a significant difference between experimentals and controls at the .035 level, and one more item (humility - P61) was close to being significant (p equal to .062).

TABLE 18
LIST OF ITEMS USED TO MEASURE SENSE OF SACREDNESS

	p values (for experimentals)	
	Using all scores:	Using only "strong" scores:
(1) Phenomena with implicit indication of sense of sacredness:		
a. Post-drug data (6 items):		
P7 Sense of wonder:	.004	(.13)
P56 Sense of awe or awesomeness:	.011	.016
P58 Mysterious fascination in spite of terror or fear (in the sense of a shaking or trembling in the utmost depths of your inner being):	.008	(.13)
P59 Sense of the wholly-otherness of what was met in the experience:	.035	(.063)
P6 Sense of finitude:	(.23)	(.23)
P13 Sense of humility:	(.35)	(.35)
b. Follow-up data (2 items):		
F22 Awe:	.011	.011
F14 Sense of presence of what can only be described as nameless:	.032	(.063)
(2) Phenomena with explicit mention of holy, sacred, or divine:		
a. Post-drug data (7 items):		
P61 Sense of profound humility before the majesty of what was felt to be sacred or holy:	(.063)	(.063)
P60 Sense of your own finitude in contrast to the infinite:	(.090)	(.090)
P77 Consciousness of a "Beyond" or "More":	(.15)	(.15)
P62 Sense of presence of what was felt to be sacred or holy:	(.64)	(.64)
P57 Sense of reverence:	(.78)	(.78)
P83 Contact or bond with God:	(.64)	(.64)
P82 Sense of the presence of God:	(.83)	(.83)
b. Follow-up data (6 items):		
F48 Sense of being at a spiritual height:	.016	.032
F30 Sense of your own finitude in contrast with the infinite:	.020	.032
F51 Love of God or Christ:	(.26)	(.26)
F15 Sense of sacredness with which you regarded your experience:	(.37)	(.37)
F40 Sense of reverence:	(.50)	(.50)
F50 Sense of the presence of God:	(.50)	(.50)
c. Content-analysis data (1 item):		
C6 Sense of sacredness:	(.37)	(.37)

When only "strong" scores were used, the items which remained significant were: awe (F56 and F22), sense of finitude in contrast with the infinite (F30), and spiritual height (F48) - p less than .032 for all four items. Sense of wholly otherness (P59) and sense of nameless presence (F14) were almost significant (p less than .063) under this rigorous analysis. The other two items which complete the list of eight significant ones were: wonder (P7) and mysterious fascination in spite of terror or fear (P58).

Six of these eight significant items were phenomena with an implicit indication rather than explicit mention of the holy, sacred, or divine. The items which were most explicit, such as reverence (P57 and F40), sacredness (F15), sense of Presence (P62), consciousness of "Beyond" (P77), or those which mention God (P82, P83, F50, and F51), were *not* significant at the .05 level.

For the purpose of a more precise analysis, the explicit and implicit items in the post-drug and follow-up data were combined separately. As shown in Table 19, the experimentals scored significantly higher than the

controls on the implicit group (p less than .02 for both methods) but not on the explicit (p less than .09 for both questionnaires). In other words there were only two chances in one hundred that this implicit phenomena experienced by the experimentals was not due to psilocybin.

TABLE 19
Category IV: SENSE OF SACREDNESS

Items	Subject group ($n=10$)	Frequency Distribution (Number of <i>times</i> scored)				Total score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	N	p
Phenomena with implicit indication of sense of sacredness									
6 Post-drug: P6, P7, P13, P56, P58, P59	Exper:	24	15	13	8	159	240	9	.020
	Contr:	1	8	22	29	62	240		
7 Follow-up: F14, F52	Exper:	12	2	2	4	66	100	10	.011
	Contr:	0	1	6	13	14	100		
Phenomena which explicitly mention the Holy, Sacred, and Divine									
7 Post-drug: P57, P60, P61, P62, P77, P82, P83	Exper:	28	8	9	25	145	280	9	(.09)
	Contr:	0	17	33	20	111	280		
6 Follow-up: F15, F30, F40, F48, F50, F51	Exper:	31	3	10	16	170	300	9	(.09)
	Contr:	3	9	24	24	85	300		

The explicit items are more conventionally "religious," while the implicit items are more representative of the basic phenomenology of the "holy" described by Rudolf Otto.³ Both explicit and implicit are examples of the category of sacredness as defined by our typology. The experimental subjects in our experiment experienced more implicit phenomena than did the control subjects. The phenomena of this category that the controls did experience were mainly explicit (see distribution of scores in the tables). Such an occurrence could have been expected, because the experiment was conducted with a worship service for setting and on a day particularly meaningful for Christian theological students who were the subjects. This could explain the lack of significant difference in the content-analysis data.

There were examples of the sense of sacredness in the content-analysis data, in both experimentals and control subjects, as the following excerpts show:

Experimental Subject RM:

My eyes began to water and there was a wholesome beauty as I massaged the soft fleshy eyebags in my tears. I strained to fall on my knees with the meaningfulness of my younger days in lower school. My cowardliness was finally overcome and true humility ensued. The organ music blended beautifully and the scripture reading was the chorus of angels in bass clef.

Experimental Subject GP:

I began the service with a feeling of intense devotion, and another strange, detached feeling... I directed my thoughts to the Passion Story, and saw Christ carrying his cross in a procession. Someone stepped in to help him, then I stepped in, too.

Experimental Subject KR:

Rev. X's voice and manner set a definite mood in me. He was at one with the total experience of the divine and holy in that chapel.

3. *Idea of the Holy*, pp. 24-35.

Control Subject IA:

My first reaction to the chapel was its appropriateness for inducing a religious experience. The altar display, the darkness, and the solemnness of the congregation, were immediately for "getting in tune with God." Later Rev. X's penetrating voice, combined with his very meaningful prayers and devotions, brought me to a spiritual height for the week.

Control Subject BL:

I immediately began to meditate and pray and read my New Testament - I Cor. 13 ... I thought about the possibility of exploring new dimensions of one's self, and I prayed for God through Christ to be Lord of this dimension of being, for certainly no dimension of reality escapes His jurisdiction. Although I was curious about the experience of others around me, yet I was more concerned with my own private worship.

When we entered the chapel, I began to pray for forgiveness and to praise God for the blessings of life. Although I did look around me on occasion, yet I found myself very much able to concentrate on my own private worship-service. As the organized service began, I found myself calmly participating in the richness of its structure. Often I would drift off into my own private prayer and devotional response, yet I was very able to find meaning in the long passages of prayer and poetry which I did hear. It seems that I was able to escape the distractions which usually hamper corporate worship, and to "lose myself" in the dimension of the religious. When interruptions did occur in my concentration, I did regain a certain intellectual curiosity, yet it lasted for only short durations of time. I easily re-entered the world of prayer and communion. ... In speaking of the worship service itself, I must stress that God seemed very close to me at this time. I found myself freed from the intellectual and conceptual dimensions of myself, to a large extent, and able to plunge into the emotive-intuitive dimension where my response was often that of "listening" to God. Very seldom were my conscious prayers "forced" in any way; rather, they followed naturally from "listening."

Control Subject MC:

The chapel service was a meaningful one for me. ... Though the religious service was meaningful ... I cannot remember what Rev. "X" said, only what he did. He did move me, I remember, especially in his Scriptural readings. I was able to feel being with Christ. Christ stood out to me as he has only a few times before.

Control Subject NJ:

As to the meaningfulness of the service - well, here goes. At first, the service became as any prior service. Then Rev. "X" caught me up into the real power and life of it (was he tremendous!).

Item P63, "sense of absence of anything that was felt to be holy, sacred, or divine," was *not* significant (p equal to .35). This is also indirect support for the conclusion that some degree of sacredness was experienced by both experimentals and controls.

The evidence has indicated, however, that sacredness was experienced more by the experimentals than by the controls, particularly the implicit type of phenomena, of which *awe* was an outstanding example. But from the lack of significance in the content-analysis data (p equal to .37), and the borderline significance of the combined follow-up data (p less than .055), we hesitate to conclude that sacredness was experienced by the

experimental subjects in the most intense and complete way as defined by the mystical typology. That there was significant implicit phenomena in the experience of experimental subjects who had psilocybin has been demonstrated.

Category V: Objectivity and Reality

When all items which contributed to this category were combined, as shown in Table 20, p was not over .020 for any method of measurement. The distribution of scores showed a predominance of high scores for the experimentals, and "0's" for the controls.

All the items which contributed to this category are listed in Table 21 with the probability that the difference between scores of experimentals and controls was due to chance rather than to psilocybin. When individual items were examined, certainty of encounter with ultimate reality (P33, F17, and F70), intellectual illumination (P54 and F10), gain of some type of intuitive knowledge (P18, P23, F7, F27 and C11), increased capacity of mind (F4) and intensity and totality of the experience (P37, P38, P55, F5, F6, F38) all had significantly higher scores for the experimentals than for controls (p was less than .035 for each of these items). One item involving the retention of the certainty about the encounter with ultimate reality (P34) and one item involving intellectual illumination (P53) had p value of .062. This slight lack of significance was counterbalanced by the five other items measuring the same specific phenomena with p values all less than .035. Item F3 (certainty of the reality of the experience was also significant at the .02 level, but was not listed as essential because a reality other than ordinary reality is not specifically mentioned. Most controls, in fact, rated this item as "4" ("strong" - similar to other strong experiences of reality), and most experimentals rated it as "5" ("very strong" - stronger than ever before in my life). Other individual items which were not significant were: seeing symbolic meanings (P1), knowing everything (P4), knowledge of personal immortality (P24), communion with ultimate reality (F23), and psychological insight (C12). All these items received some scores from the experimentals but not enough to show a significant difference from the controls. P1, P4, and P24 are clearly supplementary when compared to the *a priori* definition of the category, and not essential. C12 compared to C11 showed that the intuitive insight gained through the experience was regarded by the experimentals as more philosophical-religious than personal-psychological.

When these 18 individual items which were significant were analyzed most rigorously by only counting the "strong" level scores, the p values of P54, P18, P23, P55, F7, and C11 rose to .063. For the other 12 items, p remained less than .035.

A more precise analysis of this category, however, was obtained when those items which corresponded most closely to the *a priori* definition of the category from the typology were combined separately. These items have been listed under the subcategory "most essential phenomena." As shown in Table 20 these basic items as a group were significant at the .02 level for all methods of measurement. The total scores and frequency distribution of scores followed the same pattern as did the combined scores in the same table.

Seven out of ten of these essential items were significant (p less than .035) and five of these seven remained significant when only "strong" scores were used (p less than .032). Of these five most important items, four were from the follow-up data after six months; one (P33) was from the post-drug data. Even under this most rigorous analysis, all of the rest of these ten items were almost significant (p less than .063). Item C11 from the content-analysis data (insights from being and existence in general) was in this last group. This loss of significance for the content-analysis data raises some doubt as to the completeness of the category as experienced by the experimentals. Individual item F70, however, was very strong evidence for this category because it measured after six months the *retention* of the certainty that ultimate reality had indeed been encountered (significant at the .032 level when only "strong" scores were used).

TABLE 20
Category V: OBJECTIVITY AND REALITY

Items	Subject group (n=10)	Frequency Distribution (Number of times scored)				Total score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	N	p
Combination of all phenomena:									
12 Post-drug:	Exper:	55	11	17	37	278	480	10	.011
	Contr:	1	15	32	72	92	480		
11 Follow-up:	Exper:	77	7	5	21	393	550	10	.001
	Contr:	6	16	18	70	101	550		
2 Content Analysis:	Exper:	5	8	0	7	31	60	9	.020
	Contr:	0	0	1	19	1	60		
Most essential phenomena:									
5 Post-drug: P33, P34, P53, P54	Exper:	21	3	4	12	99	160	8	.004
	Contr:	1	5	11	23	36	160		
5 Follow-up: F10, F17, F23, F27, F70	Exper:	28	6	3	13	155	250	9	.020
	Contr:	0	3	7	40	19	250		
2 Content Analysis: C11, C12	Exper:	5	8	0	7	31	60	9	.020
	Contr:	0	0	1	19	1	60		

The content-analysis material itself illustrated this category, as the following examples show:

Experimental Subject HQ:

I felt I was at the real level of being.

Experimental Subject QX:

I finally determined the truth was in man and that all his seeking was in vain and absurd, for it was not ultimately important what man knew intellectually but rather that he was at one with himself and his fellow man, i.e., in harmony and unity and love with mankind. ... Everything seemed to be more real and purposeful than I had ever known before.

(Comment: These two examples indicate the basic distinctions between "ultimate" reality and "ordinary" reality.)

Experimental Subject FK:

Of first significance was the feeling of a profound religious "call" - the first I think I have ever really had. Before, I just felt as if I should enter the ministry, but now I "know" that I must. ... up to this time, I have never known the real meaning of the Christian truth - I have overintellectualized it, and have not involved myself in its eternal meaning and significance.

(Comment: This example also has strong overtones of the category "sense of sacredness.")

Experimental Subject FK:

I would most emphatically emphasize this: I was helped in the liberation of previously repressed or inhibited areas of my life. That which was just a conception, was now made real. I had realized that one of my problems was now made real. I had realized that one of my problems was my far-reaching egocentricity - for the first time, I truly felt it, in the whole of my being.

Experimental Subject KR:

The experiences are not unpleasant which confirms my belief that the Self (Jung's term for the integrating principle in the collective unconscious) has been further released in me toward greater wholeness.

(Comment: The certainty of intuitive-psychological knowledge of self in the last two examples represented a very meaningful kind of ultimate reality for these subjects.

TABLE 21
LIST OF ITEMS USED TO MEASURE OBJECTIVITY AND REALITY

	p values (for experimentals)	
	Using all scores:	Using only "strong" scores:
(1) Most essential phenomena:		
a. Post-drug data:		
P33 Sense of certainty or conviction of encounter with ultimate reality (in the sense of being able to "know" and "see" what is really <i>real</i>) at the time of the experience:	.020	.020
P34 Sense of certainty or conviction of encounter with ultimate reality (in the sense of being able to "know" and "see" what is really <i>real</i>) now (in looking back):	(.062)	(.062)
P53 Intellectual illumination:	(.062)	(.063)
P54 Retention of such illumination after the experience:	.008	(.063)
b. Follow-up data:		
F27 Gain of insightful knowledge experienced at an intuitive level:	.004	.004
F17 Certainty of encounter with ultimate reality (in the sense of being able to "know" and "see" what is really <i>real</i>):	.008	.016
F70 You are convinced now, in retrospect, that you encountered ultimate reality in your experience (i.e., that you "knew" and "saw" what was really <i>real</i>):	.016	.032
F10 Intellectual illumination:	.035	.032
F23 Communion with ultimate reality:	(.227)	(.227)
c. Content-analysis data (2 items):		
C11 Insights into being and existence in general:	.004	(.063)
C12 Insights into personal finite self:	(.11)	(.25)
(2) Supplementary phenomena:		
a. Post-drug data (8 items):		
P37 Intensity of the response to ultimate reality:	.004	.008
P38 Totality of the response to ultimate reality:	.016	.016
P55 Sense of being grasped and dealt with:	.004	(.063)
P18 Sense of having known the universe in its wholeness:	.016	(.063)
P23 Sense of ultimate goodness as the basis of reality:	.035	(.063)
P24 Intuitive knowledge of your immortality:	(.11)	(.11)
P1 Seeing symbolic meanings of things:	(.18)	(.18)
P4 Feeling of being very wise, knowing everything:	(.23)	(1)
b. Follow-up data (6 items):		
F5 Intensity of your response to the experience:	.001	.001
F6 Totality of the response to the experience:	.001	.001
F38 Sense of being grasped and dealt with by the experience:	.001	.002
F4 Enhanced capacity of mind:	.008	.008
F7 Sense of having known the universe in its wholeness:	.016	(.063)
F3 Certainty of the reality of what was experienced:	.020	.020

The evidence taken together certainly indicates that phenomena corresponding to that described in our typology did occur and to a marked degree in the form of most essential elements as well as some supplementary ones. The lack of consistency, however, in all three methods of measurement when only "strong" scores were analyzed makes not fully certain the conclusion that the experimentals experienced the most complete form of this category.

We thus conclude that the phenomena described by the category "objectivity and reality" did occur significantly more in the experimentals who received psilocybin than in the controls who did not, as judged from analysis of the essential items alone as well as in combination with the supplementary ones. Evidence showed that the experience of this category was very close to, but not quite identical with, the most complete form of the mystical typology.

Category VI: Paradoxicality

As seen in Table 22, the experimentals scored significantly higher than the controls in the phenomena of paradoxicality for all three methods of measurement (p less than .004). The experimentals had more "strong" ratings than the controls, as demonstrated by the frequency distribution of scores. In other words, there are only four chances in 1000 that this difference between experimentals and controls was not enhanced by psilocybin.

Items	Subject group ($n=10$)	Frequency Distribution (Number of <i>times</i> scored)				Total score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	<i>N</i>	<i>p</i>
4 Post-drug: P65, P68, P72, P73c	Exper:	24	4	5	7	116	160	9	.002
	Contr:	1	2	4	33	17	160		
3 Follow-up: F73, F25, F33	Exper:	10	0	4	16	51	150	8	.004
	Contr:	0	1	1	28	4	150		
1 Content Analysis: C13	Exper:	6	2	2	0	24	30	10	.001
	Contr:	0	0	0	10	0	30		

All phenomena which were used to measure paradoxicality are listed in Table 23. All individual items were significant at the .016 level except F73. The interviews revealed the reason for this apparent discrepancy. The wording of this item made the statement untrue for most subjects because of the words, "You have been accused." Subjects who later were found to be experimentals stated that they had not been *accused* of logical contradiction because they had not even tried to describe their experience to someone who would be unsympathetic enough to accuse them of such contradiction. These subjects readily admitted the difficulty of being strictly logical in descriptions of their experience. The content-analysis data and other items which are paradoxical even in their description did show significant differences from the controls even when only the "strong" scores were used (p less than .032). Paradoxicality was also supported implicitly by item P64, the converse of item P65. Item P64 stated that "the experience is describable by logical statements which are not contradictory" and did not show a significant difference between experimentals and controls (p equal to .35).

	<i>p</i> values (for experimentals)	
	Using all scores:	Using only "strong" scores:
(1) Post-drug data (4 items):		
P65 Sense that an attempt to describe the experience in logical statements becomes involved in contradictory language:	.016	.063
P68 Paradoxical dissolving of the subject-object dichotomy in spite of the empirical multiplicity of objects (they are still perceived as separate):	.008	.016
P72 Paradoxical transcendence of space as defined in 68-71:	.004	.008
P73 Pure awareness with no empirical distinctions (i.e., one is beyond the self-consciousness of sense impressions, yet one is not unconscious):	.002	.008
(2) Follow-up data (3 items):		
F73 You have been accused of logical contradiction in trying to describe the meaningfulness of your own experience to others who were not present:	(1)	(1)
F25 Loss of feelings of difference from objects:	.016	.032
F33 Fusion of the self into a larger undifferentiated whole:	.008	.032
(3) Content-analysis data (1 item):		
C13 Paradoxicality:	.001	.016

Experimental Subject QX:

Everything was part of the other, yet distinct in itself.

(Comment: This is an example of external unity as well as paradoxicality.)

Experimental Subject GP:

In fact, I'm not sure I have one over-riding impression, unless it is one of a confused kind of clarity.

Experimental Subject TD:

I had a vision in which the flowing colors seemed to be me. It was infinity, with many timelines running through it. ... I decided then that words were adequate to describe the experience, but only if you could describe each tributary, and say the words all at once.

(Comment: The description is not only paradoxical but is also an example of the next category, alleged ineffability.)

From the consistency of statistical evidence from all methods of measurement we conclude that the experimentals who got psilocybin experienced the phenomena of paradoxicality to the most complete degree defined by this category in our typology of the mystical consciousness.

Category VII: Alleged Ineffability

As seen in Table 24, the experimentals scored significantly higher than the controls in this category for all three methods of measurement (p less than .008). The experimentals had more strong ratings than the controls, as demonstrated by the distribution of scores.

Items	Subject group (<i>n</i> =10)	Frequency Distribution (Number of <i>times</i> scored)				Total score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	<i>N</i>	<i>p</i>
1 Post-drug: P66	Exper:	5	3	2	0	33	40	8	.004
	Contr:	0	4	3	3	16	40		
3 Follow-up: F16, F57a, F92	Exper:	22	5	1	2	115	150	10	.001
	Contr:	1	3	6	20	22	150		
1 Content Analysis: C14	Exper:	2	1	4	3	12	30	7	.008
	Contr:	0	0	0	10	0	30		

All phenomena which were used to measure alleged ineffability are listed in Table 25. All individual items were significant at the .008 level and most were even more significant than this. Alleged ineffability was also supported indirectly by the nonsignificance of item F57b, "the *ease* of communication of your experience," which was the converse of F57a. When only the "strong" scores were used, all individual items remained significant (p less than .032) except for the content-analysis data. These were, in fact, a sparsity of statements in the accounts which explicitly stated the difficulty of describing the experience. Perhaps this was due to the fact that the subjects were at the time actually describing their experiences as best they could. Implicit allusions to this phenomenon were more frequent.

Some of the best examples from the content-analysis data of those who had psilocybin are as follows:

Experimental Subject TD:

I imagined I heard someone describing or explaining our experience, and I wanted to object because they were lying. And yet I felt that it was all that could be said. Somehow it was theological ideas they were messing up, yet I could understand that these lies were the best we could do. But they *were* lies, and that was important, too.

Experimental Subject KR:

During this time the sense of "we-ness" became a sense of oneness with what I can only describe as "Logos" or a personal Word... (Theological terms were given great meaning in this experience but are totally inadequate in describing the depth and impact of it.)

(Comment: This was also the beginning of the phenomenon of internal unity for this subject.)

Experimental Subject FK:

I cannot describe the sense of the Divine - He was the eternal mystery that *was*: He was everywhere, but completely transcendent; the Divine, truly not of this world, but whose message had the greatest significance for this world. I felt compelled to go to the front of the chapel, to minister in the name of Christ - for no one else was doing it, and it *had* to be done... For really the first time, I realized that man cannot challenge and try to limit God to a conceptual system: it is God who challenges men to do His will. God is, and that is all one can say. I am human; I will still try to build an elaborate theological system, for my egocentric gratification, and also to be able to communicate with others. (I am not saying that intellectual theology is bad, but that it is so completely inadequate to interpret the Divine.)

(Comment: This is an example not only of alleged ineffability but expresses the sense of sacredness as well. The reality which he felt is an example of the category: Objectivity and reality.)

TABLE 25 LIST OF ITEMS USED TO MEASURE ALLEGED INEFFABILITY		
	p values (for experimentals)	
	Using all scores:	Using only "strong" scores:
(1) Post-drug data (1 item):		
P66 Sense that the experience cannot be adequately described in words:	.008	.032
(2) Follow-up data (3 items):		
F16 Feeling that you could not do justice to your experience by a verbal description:	.001	.016
F57a You have had difficulty in trying to communicate your own experience to others who were not present:	.002	.032
F92 You now feel that the meaningfulness of your own experience is beyond words:	.004	.016
(3) Content-analysis data (1 item):		
C14 Ineffability:	.008	(.25)

We therefore conclude that the experimentals did experience the phenomenon of alleged ineffability to a considerable degree - certainly sufficient for inclusion as an example of this category as defined by the mystical typology but not in the most intense way possible. In other words, the psilocybin experience under the conditions of this experiment can be concluded to closely resemble this aspect of mystical experience.

Category VIII: Transiency

As seen in Table 26, when the scores of all items were combined, the experimentals scored significantly higher than the controls for all methods of measurement (p less than .004). The frequency distribution of scores demonstrated the predominance of high scores for the experimentals and scores of "0" for the controls. In other words, there are only four chances in a thousand that the phenomenon of transiency was not due to psilocybin.

Items	Subject group (n=10)	Frequency Distribution (Number of times scored)				Total score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	N	p
Combination of all phenomena:									
6 Post-drug: P12, P26, P27, P28, P30, P31	Exper:	34	11	7	8	180	240	10	.001
	Contr:	0	1	7	52	12	240		
4 Follow-up: F8, F9, F52, F86a	Exper:	27	8	3	2	151	200	10	.001
	Contr:	1	4	1	34	17	200		
1 Content Analysis: C10	Exper:	8	1	0	1	26	30	8	.001
	Contr:	1	0	0	9	3	30		
Essential phenomena:									
2 Post-drug: P30, P31	Exper:	8	6	3	3	56	80	9	.002
	Contr:	0	0	2	18	2	80		
2 Follow-up: F52, F86a	Exper:	11	8	0	1	70	100	9	.002
	Contr:	1	2	0	17	10	100		
1 Content Analysis: C10	Exper:	8	1	0	1	26	30	8	.004
	Contr:	1	0	0	9	3	30		

All the items which were used to measure transiency are listed in Table 27 in two groups: essential and supplementary phenomena. When scores were used in the analysis, all individual items showed a significantly higher score for experimentals than for controls at the .004 level except for suddenness of appearance which was still significant at the .02 level. Under the most rigorous analysis using only "strong" scores, most of the essential items which directly defined transiency as such, remained significant (p less than .032) except for F31 and F52. It was interesting that these last two items are consistent because they would indicate that the lighter levels of unusual consciousness (F31) were the ones which did not disappear completely by the next day. Such an "afterglow effect" was confirmed during the interviews. All items which directly measured suddenness remained significant under the most rigorous analysis (P27, F28, and F9), as did those which indicated a change in usual consciousness, P26 and F8 (p less than .020 for all these items). The only other item which did not remain significant (p less than .13) when only the "strong" scores were used was the experience of several levels (of consciousness) at once (P12) which was not so closely related to transiency as the other items.

Other substantiating evidence that the experimentals experienced change from usual consciousness was item P29 (stability of level of consciousness *during* the experience) which was significant for the controls (p less than .035).

Examples of transiency from personal accounts of two experimentals are presented below as further evidence:

Experimental Subject GP:

... after I was quite completely "out" of the experience, talking with my group and eating an apple...

Experimental Subject QX:

At this point, the service had come to a close, and I was beginning to lose the full strength of my experience.

TABLE 27
LIST OF ITEMS USED TO MEASURE TRANSIENCY

	p values (for experimentals)	
	Using all scores:	Using only "strong" scores:
(1) Essential phenomena:		
a. Post-drug data (2 items):		
P30 Transiency of duration of deepest levels:	.002	.032
P31 Transiency of duration of levels other than the deepest:	.004	(.13)
b. Follow-up data (2 items):		
F52 Return to you usual state of consciousness day after the experience:	.002	(.063)
F86a You have lost by now the state of consciousness you experienced on Good Friday:	.004	.016
c. Content-analysis data (1 item):		
C10 Transiency of unity:	.004	.008
(2) Supplementary phenomena:		
a. Post-drug data (4 items):		
P26 Appearance of various levels of consciousness:	.001	.002
P27 Suddenness of appearance of various levels of consciousness:	.002	.004
P28 Suddenness of disappearance of various levels of consciousness:	.004	.016
P12 Being able to operate on several levels at once:	.004	(.13)
b. Follow-up data (2 items):		
F8 Definite change in your usual state of consciousness:	.002	.002
F9 Suddenness of appearance of various dimensions of consciousness:	.020	.020

For more precise analysis, the items most essential to the definition of the category were analyzed as a group separately from those items which were only closely related. As seen in Table 26, the results in terms of total scores, score distribution, and significance level, followed a pattern similar to that of the combined scores of all the items (p less than .004 for all subcategories).

The most important individual item was F86a because here the return to usual consciousness was measured after six months rather than after a few days. The experimentals had significantly more "strong" scores than the controls (p less than .016).

The closely related items were really a prerequisite for the essential ones, because a return to usual consciousness would not be relevant if there had been no change during the experience. The most specific item in this regard is from the content-analysis data. C10 represents the whole category because this distinction between "during" and "after" the experience was explained. Judges were told to score evidence of transiency of unity - a basic phenomenon of the mystical typology.⁴ The fact that this item remained significant under the most rigorous analysis confirms the conclusion from the rest of the data that the phenomena of transiency indeed were experienced more by the experimentals than controls, and to the most complete degree in the typology. In other words this phenomenon was induced by the ingestion of psilocybin under the conditions of this experiment.

Category IX: Persisting Positive Changes in Attitude and Behavior

As seen in Table 28, the experimentals scored significantly higher than the controls for both methods of measurement, when all items were combined which rated persisting positive changes, compared to the subjects' condition before the experiment (p less than .001 for followup data, and less than .002 for content-analysis data). The frequency distribution of scores indicated that there was a predominance of "strong" scores for the experimentals, and "0's" for the controls. The individual items which measured this category were listed in Table 29 in four subcategories: (1) changes toward self, (2) changes toward others, (3) changes toward life, and (4) changes toward the experience.

4. See instruction manual in appendix E under "transiency of unity."

TABLE 28
Category IX: PERSISTING POSITIVE CHANGES AFTER SIX MONTHS
Combination of All Subcategories

Items	Subject group (n=10)	Frequency Distribution (Number of times scored)				Total score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	N	p
39 Follow-up:	Exper:	152	42	86	110	944	1950	10	.001
	Contr:	14	47	52	227	290	1950		
4 Content Analysis:	Exper:	20	2	1	17	65	120	9	.002
	Contr:	4	1	0	35	14	120		

TABLE 29
LIST OF ITEMS USED TO MEASURE PERSISTING POSITIVE CHANGES IN ATTITUDE AND BEHAVIOR

	p values (for experimentals)	
	Using all scores:	Using only "strong" scores:
(1) Toward Self:		
a. Follow-up data (11 items):		
F55b You have more personal integration:	.002	(.063)
F58b Your behavior has changed in ways you would consider positive since the experience:	.002	(.063)
F63a You have a greater sense of inner authority in your life:	.002	.032
F64b Your life has a heightened dynamic quality:	.008	(.063)
F74b Feelings of anxiety have decreased:	.016	(.25)
F87a You have more joy in your life:	.016	(.25)
F77b You are more creative person:	(.062)	(.25)
F61b Feelings of depression have decreased:	(.063)	(.25)
F66b You have increased feelings of happiness:	(.11)	(.25)
F69b You have more peace in your life:	(.11)	(.25)
F71b You have an increased achievement efficiency:	(.50)	(1)
b. Content-analysis data (1 item):		
C15 Changes toward self after six months:	.004	.008
(2) Changes toward others:		
a. Follow-up data (7 items):		
F54a You have become more sensitive to the needs of others:	.002	.032
F60b You are more your true self with others:	.008	.032
F91a You are a more authentic person:	.016	.032
F85b You now feel more love toward others:	.016	(.063)
F68a You are more tolerant toward others:	.032	(.063)
F76a You have a more positive relationship with others:	(.063)	(.063)
F65b Others have remarked about a positive change in you since Good Friday:	(.19)	(.19)
b. Content-analysis data (1 item):		
C17 Changes toward others after 6 months:	(.812)	(.812)
(3) Changes toward life:		
a. Follow-up data (15 items):		
F53a The experience has changed your philosophy of life positively:	.001	.032
F89a Time spent in quiet meditation has increased:	.008	(.25)
F83b You spend more time for devotional life:	.008	.032
F62a Your appreciation for life has increased:	.002	(.13)
F82 You feel you now know a new dimension of life:	.004	.032
F81b Your life has more richness:	.020	(.13)
F67a Your life has more meaning:	.035	(.063)
F79a Your sense of values (i.e., what is important to you in life) has changed positively:	.035	(.13)
F59a You now feel a greater need for service for others:	.035	(.13)
F84a Your appreciation for the whole of creation has increased:	.035	(.063)
F95 You now feel your life has taken a definite change of course because of this experience:	.032	(.13)
F72a You have an increased sense of reverence:	(.062)	(.063)
F78a You have more enthusiasm for life:	(.062)	(.13)
F75b You now have a more certain vocational commitment:	(.063)	(.063)
F93b You have more of a sense of the adventurous outreach of life:	(.09)	(.09)
b. Content-analysis data (1 item):		
C19 Changes toward life after six months:	.016	.016
(4) Changes toward the experience:		
a. Follow-up data (5 items):		
F56a You learned something useful from the experience:	.004	.032
F94a Your experience has been valuable for your life:	.020	.020
F96 You have tried to recapture any parts of the Good Friday experience since then:	(.15)	(.15)
F98a You would be interested in repeating the same experience you had on Good Friday:	(.26)	(.26)
F99a You would be interested in having more of these kinds of experiences (not necessarily with the hope of an exact repetition of your Good Friday experience):	(.23)	(.23)
b. Content-analysis data (1 item):		
C21 Changes toward the experience after six months:	(.5)	(.5)

Changes toward self

Seven out of the twelve items which represented persisting changes toward self, were significant below the .016 level. These items indicated a definite positive change in both behavior (F58b) and attitude in terms of better inner functioning - e.g., increased personal integration (F55b), inner authority (F63a), dynamic quality (F64b), and joy (F87a); and decreased anxiety (F74b). Increased creativity (F77b) and decreased depression (F61b) were almost significant (p less than .063). When only "strong" scores were used, inner authority (F63a) remained significant (p less than .032), and F55b, F58, and F64b had higher scores for experimentals than for controls but just above the .05 level of significance (p less than .063).

Changes toward others

Five out of the seven items which represented changes toward others were significant (p less than .032). These items indicated a definite positive change in interpersonal relations in terms of more sensitivity (F54a), authenticity (F60b and F91a), tolerance (F68a), and love (F85b). More positive relationships with others (F76a) was almost significant (p less than .063). Of these five most significant items, three remained significant at the .032 level when only "strong" scores were used. These most important items were the phenomena of more sensitivity and more authenticity in being one's true self with others (F54a, F60b, F91a).

Changes toward life

Thirteen out of the 17 items which represented changes toward life were significant at the .035 level. Increased sense of reverence (F72a), vocational commitment (F75b), and enthusiasm for life (F78a), were only significant at the .063 level. Of the 13 most significant items, the four most important, as indicated from "strong"-score analysis were: positive change in philosophy of life (F53a), knowledge of a new dimension of life (F82), and increased sense of the preciousness of life (F90b) - p less than .032: increased meaning (F67a), sense of reverence (F72a), vocational commitment (F75b), and appreciation for creation (F84a) were significant under such analysis only at the .063 level.

Changes toward the experience

Two of the six items which represented persisting changes toward the experience were significant at the .020 level: learned something useful (F56a) and considered the experience valuable (F94a). These differences between experimentals and controls also remained significant when only the "strong" scores were used (p less than .032 for both items).

TABLE 30
Category IX: PERSISTING CHANGES TOWARD SELF AFTER SIX MONTHS

Items	Subject group (n=10)	Frequency Distribution (Number of times scored)				Total score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	N	p
Persisting POSITIVE Changes:									
11 Follow-up: F55b, F58b, F61b, F63a, F64b, F66b, F69b, F71b, F74b, F77b, F87a	Exper:	30	12	27	41	205	550	10	.001
	Contr:	0	7	11	92	36	550		
1 Content Analysis: C15	Exper:	7	1	0	2	23	30	8	.004
	Contr:	0	0	0	10	0	30		
Persisting NEGATIVE Changes:									
11 Follow-up: F55a, F58a, F61a, F63b, F64a, F66a, F69a, F71a, F74a, F77a, F87b	Exper:	2	1	28	79	52	550	7	(.062)
	Contr:	0	1	5	104	9	550		
1 Content Analysis: C16	Exper:	1	0	2	1	5	30	3	(.13)
	Contr:	0	0	0	10	0	30		

As shown in Tables 30-33, the combined scores for the subcategories, changes toward self and toward life, were significant for the experimentals from both methods of measurement (p less than .016). The total scores and score distribution from these two subcategories were consistent with those of the combined scores of all items in the category (predominance of "strong" scores for experimentals and "0's" for controls). While the other two subcategories, changes toward others and toward the experience were significant from the follow-up data (p less than .001 for others and less than .055 for the experience), there was no significant difference between experimentals and controls in the content-analysis data (p greater than .19).

TABLE 31
Category IX: PERSISTING CHANGES TOWARD OTHERS AFTER SIX MONTHS

Items	Subject group (n=10)	Frequency Distribution (Number of times scored)				Total score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	N	p
Persisting POSITIVE Changes:									
7 Follow-up: F54a, 60b, 65b, 68a, 76a, 85b, 91a	Exper:	30	8	14	18	178	350	10	.001
	Contr:	0	10	10	50	45	350		
1 Content Analysis: C17	Exper:	3	0	1	6	10	30	5	(.50)
	Contr:	2	1	0	7	8	30		
Persisting NEGATIVE Changes:									
7 Follow-up: F54b, F60a, F65a, F68b, F76b, F85a, F91b	Exper:	0	0	7	63	11	350	3	(.50)
	Contr:	0	0	1	69	1	350		
1 Content Analysis: C18	Exper:	0	1	0	9	2	30	1	(1)
	Contr:	0	0	0	10	0	30		

TABLE 32
Category IX: PERSISTING CHANGES TOWARD LIFE AFTER SIX MONTHS

Items	Subject group (n=10)	Frequency Distribution (Number of times scored)				Total score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	N	p
Persisting POSITIVE Changes:									
16 Follow-up: F53a, F59a, F62a, F67a, F72a, F75b, F78a, F79a, F81b, F82, F83b, F84a, F89a, F90b, F93b, F95	Exper:	60	19	39	42	393	800	10	.011
	Contr:	3	19	20	118	105	800		
1 Content Analysis: C19	Exper:	6	0	0	4	18	30	6	.016
	Contr:	0	0	0	10	0	30		
Persisting NEGATIVE Changes:									
14 Follow-up: F53b, F59b, F62b, F67b, F72b, F75a, F78b, F81a, F83a, F84b, F89b, F90a, F93a, F79b	Exper:	0	1	16	123	21	700	5	(.50)
	Contr:	0	2	4	134	11	700		
1 Content Analysis: C20	Exper:	1	0	0	9	3	30	1	(1)
	Contr:	0	0	0	10	3	30		

TABLE 33
Category IX: PERSISTING CHANGES TOWARD EXPERIENCE AFTER SIX MONTHS

Items	Subject group (n=10)	Frequency Distribution (Number of times scored)				Total score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	N	p
Persisting POSITIVE Changes:									
5 Follow-up: F56a, F94a, F96, F98a, F99a	Exper:	32	3	6	9	168	250	10	.055
	Contr:	11	11	11	17	104	250		
1 Content Analysis: C21	Exper:	4	1	0	5	14	30	5	(.19)
	Contr:	2	0	0	8	6	30		
Persisting NEGATIVE Changes:									
4 Follow-up: F56b, F94b, F98b, F99b	Exper:	2	5	2	31	27	200	8	(.64)
	Contr:	3	1	0	36	16	200		
1 Content Analysis: C22	Exper:	0	0	2	8	2	30	2	(.25)
	Contr:	0	0	0	10	0	30		

Both the follow-up accounts were designed to measure negative as well as positive changes. The positive items discussed above had their negative counterparts, but the only individual items significant below the .01 level were F74a, increased feelings of anxiety (p less than .032), and F61a, increased feelings of depression (p less than .63). When only "strong" scores were used, neither of these items remained significant (p greater than .5). Some ambiguity existed, however, because the positive expressions of both these items (F74b and F61b) were at least, if not more, significant than the negative. These two negative items belong to the subcategory "changes toward self," which tended toward significance ($p = .062$) in the follow-up data for this subcategory as a whole, but was clearly not significant in the content-analysis data. None of the negative subcategories showed a significant difference between experimentals and controls, at the .05 level, from either method of measurement. (See Tables 30-33.) The total negative scores of these categories were relatively low in relation to the number of items represented, and the score distribution was predominantly at the low end of the scale - almost entirely "0's" for both experimentals and controls. The positive changes far outbalanced in number and intensity the few and relatively moderate negative changes reported.

Some examples of persisting positive changes from the content-analysis data are as follows:

Changes toward self:

Experimental Subject HQ:

Very strongly beneficial: I have had a much greater degree of self-realization since Good Friday. By this I mean a greater certainty of being and becoming. Closely connected with this is the feeling of being a creature of purpose.

I feel that I have a greater realization of my motives that lie behind my various actions. I do believe I have an awareness of the selfishness that underlies many of my actions. This realization has been met with attempts to cast this selfishness aside to go beyond it.

I have made reference to the joy I experienced when I came back to life since the Good Friday afternoon experience. At times I have felt a joy of being alive and having real existence. I do not believe I have ever experienced it previous to Good Friday to the degree I did then or to the degree I have since, even though I intellectually knew of it.

Experimental Subject GP:

Very strongly beneficial: Expanded awareness of myself. Regularly, in introspection, occasionally spontaneously, I recognize dimensions of my life that I had not known before: longings, goals, abilities, kinds of strength.

Changes toward others:

Experimental Subject TD:

Strongly beneficial: Increased willingness, though not necessarily ability, to see interpersonal relations from the side of the other person. An increased insight into interpersonal relations.

Experimental Subject FK:

Strong benefit: A startling sensitivity to others - especially to those with "problems".

Changes toward life:

Experimental Subject FK:

Very strong benefit: A sense of "call" - insofar as this means that the Word must be proclaimed to the "world" - not so much verbally as "existentially", and that somehow I must respond to this challenge, as it has appeared to me.

Changes toward the experience:

Experimental Subject EB:

Moderately beneficial: An appreciation of and ability to enter in a limited way into experiences dealing with that beyond one's usual consciousness (two aspects of which are "mystical" elements and "unconscious" elements).

Experimental Subject FK:

Very strong benefit: A profound recognition of the role of the "mystical" in the full religious life - but this attitude seemed not as an escape from the world, rather giving me a greater sense of concern for the here and now.

Experimental Subject RM:

Very strongly beneficial: Strong desire for prayer, communion with God, and time in the "wilderness".

Experimental Subject KR:

Strongly beneficial: Aid in spiritual growth.

A significant difference between experimentals and controls in persistent positive changes after six months in all four subcategories has been demonstrated by these data. The most significant subcategories were changes toward self and changes toward life. The most important changes were those due to strong scores, as has been suggested. Changes toward others and toward the experience, occurred in both the experimentals and the controls, as seen from the total scores of these subcategories. Perhaps the interaction with the experimentals was a factor in these results, as is suggested by the following quotes from three controls:

Control Subject NJ:

The entire day was meaningful - helped to draw friendships tighter and added much meaning to my religious life. ... Reverend "X", FK, and his entire activity (including playing "Jesus Christ is Risen Today"), and the talks afterward, were contributors to an extremely meaningful experience.

Control Subject IA:

It was one of the most exciting days of my life. The fellowship with the students, and particularly with all of the wonderful group leaders, was very meaningful.

Control Subject JN:

I was very glad to have been able to be part of the experience; for the first time I was really able to talk in depth with RM and TD.

(Comment: RM and TD were the experimentals in JN's group.)

The conclusion can be drawn that in terms of certain changes toward self and changes toward life, the drug experience is similar if not identical with changes resulting from mystical experiences as defined by our typology. This conclusion is not as certain for changes toward others and toward the experience because of lack of confirmation from content-analysis data, although specific items, as well as these subcategories as a whole, were strongly significant in the followup data.

Other Data

Items which were not directly applicable to categories of our typology of mysticism are listed in Appendix G, in four main groups:

- I. Integrative and constructive phenomena.
- II. Disturbing changes in attitude and behavior.
- III. Physical sensations.
- IV. Miscellaneous.

The significance level of the difference in scores between experimentals and controls was given both when all scores were counted and also when only "strong" scores were used. This information, while interesting, does not contribute directly to the argument presented above.

I. Integrative and constructive phenomena:

The most striking phenomena under this grouping were the death-rebirth experiences during the experiment (significant at .032 level), which may have helped foster the lasting sense of new significance and meaning to life.

II. Disturbing changes in attitude and behavior:

Almost all of these phenomena which showed a significant difference between experimentals and controls, took place *during* the experience. In the six-month follow-up questionnaire, as has been shown above, only increased anxiety was significant below the .05 level, and this was not due to "strong" scores. Nine out of ten of the experimentals gave a positive evaluation to their experiences as a whole, in spite of the occurrence of some negative elements, of which transient fear was the most striking, as shown in the following examples from the content-analysis:

Experimental Subject FK:

Afterwards (by that, meaning Saturday and somewhat Sunday), I did have a distinct negative feeling beside the much, much stronger feeling of having been through a most meaningful, deep and significant experience. I would like to sincerely thank you for making this opportunity available for me... and I am sure it will have positive and creative effects on my "quest for realization" as I integrate the insights which were gained.

Experimental Subject DT:

Despite the fear and negative attitude when I was in that one violent and painful dream, my reaction to the whole experience was a positive one, and I think I should like to do it again.

The relation between mysticism and phenomena generally considered as psychopathology is an interesting one which needs further elucidation and research, but is beyond the scope of this dissertation.

III. Physical phenomena:

The variety of physical sensations, especially visual, which accompanied the drug experiences, were interesting and could be compared to the equally diverse physical manifestations reported by the mystics, but again, such a comparison was not the chief area of interest of this research. It is noteworthy that no experimental subject became preoccupied with negative physical phenomena such as dizziness or vomiting, although transient nausea was experienced (p less than .008). This result may have been due to the lack of emphasis on physical phenomena in the preparation of the subjects. The controls had significantly higher scores than the experimentals on the sensations of warmth and itching (P115 and P116) at the .035 level. These scores reflected the effectiveness of action of nicotinic acid on the controls.

IV. Miscellaneous:

There was 100% agreement among experimentals and controls as to who got psilocybin, as shown by the score difference between experimentals and controls on P128, F100a, and F100b, when only "strong" scores were used (p less than .001).

Chapter VII

GENERAL DISCUSSION AND CONCLUSIONS

Discussion of Design

Alternate ways of designing the experiment were considered. Subjects could have been told nothing other than that they were going to participate in a psychological experiment with drugs in a non-religious setting. The presupposition, however, that set and setting are very important led to the use of techniques which would encourage a serious and expectant attitude, group support, a trustful atmosphere, and security for the subjects who, it was hoped, would have meaningful experiences. Everything possible was done to discourage the development of fear, suspicion and mistrust. The chapel as setting; theological students as subjects; and the religious focus in preparation, expectation, and implementation were deliberate for maximum encouragement of "religious or mystical" phenomena, because these were what we wanted to study. To control for so much positive suggestion double-blind procedure was employed for an experimental and control group.

The psychedelic drug experience is so unique and powerful that the double-blind control design would have been completely meaningless if the subjects had known what to expect from previous experience for they would have certainly known whether or not they received the drug.¹ In our study double-blind technique was initially effective because none of the twenty subjects had ever had an experience before with LSD, psilocybin, or mescaline. In spite of this fact by the time the chapel service was over all of the experimentals were certain that they had received psilocybin because of the profound changes from their usual state of consciousness. One purpose of the control group was to measure the effect of suggestion. Data from the tape recordings, written accounts, and interviews indicated that in the early part of the experiment positive suggestibility was greatly enhanced by the somatic effects of the nicotinic acid which the controls had all assumed was psilocybin. They had waited with eager anticipation for more effects. By the end of the chapel service, however, most of the control subjects were doubtful that they had received psilocybin, but were still uncertain because of the impact of the service combined with the initial somatic effects. The following excerpt from a tape recording which was made immediately after the service illustrates this fact:

Control Subject MC:

Soon after swallowing the pill I noticed sensations of heat. Then I found myself in a very relaxed state... very free. After going into the chapel, time went very quickly. The service was very meaningful. ... Rev. "X's" voice seemed to have an effect on me. A times I felt like cheering and at other times like crying. His Bible readings moved me. I felt as if I were there for the first time and really experiencing these things, but at this time I honestly can't say whether I had the drug or not.

During the group discussions the qualitative difference in experiences became strikingly obvious to the participants. This created a bias in the controls, but their written accounts were remarkably similar to their tape recordings which were made after the service before the group discussions. Also the fact that the subjects had been told that some would not receive psilocybin made them curious as to their status and eager for any distinguishing sign. The nicotinic acid acted within ten to twenty minutes, but within an hour and one-half most of the physical affects had worn off. The psilocybin took from thirty minutes to one-and-one half hours to become noticeable. Two of the ten experimentals did not feel any effects until after the chapel service started. The possibility of giving the experimentals a combination of psilocybin and nicotinic acid to produce a similarity of initial somatic effects (e.g., flushing and itching of the skin) in both the experimental and control groups was considered but rejected because the possible antagonism between nicotinic acid and psilocybin was not known. Also, such initial physical effects might have focused the psilocybin experience on physical symptoms.

1. Sherwood, Stolaroff, and Harman, *op. cit.*, p. 72.

Deception might have been used by telling the subjects that they all would receive psilocybin, but it was felt that such a design might have disturbed the atmosphere of trust and friendliness by arousing confusion and suspicion. Actually some deception was used because although the subjects had been told that some would not receive psilocybin, they had not been told that a control substance would be given. The controls had assumed that they would get a true placebo. Afterwards three control subjects expressed some resentment because of this assumption, but were still willing to cooperate in collection of data. Disappointment was a much stronger sentiment. During the interviews (including the one after six months) discussion of who might have been an experimental or control was discouraged. The experimenter emphasized the fact that he did not know who had received psilocybin and that there was a possibility of non-reaction to the drug. Most of the subjects, however, did not become less certain that they either received or did not receive psilocybin.

Obviously, a disadvantage of having the experimentals and controls mixed in the same session was that the behavior and experience of the experimentals had an effect upon the way that the controls evaluated their own experiences by giving them a clue as to their status. The mixed discussion period after the service would be subject to the same criticism only more so because the controls listened to others describe their experiences. The discussion period was designed to give group support and security to those recovering from the effects of the drug. The controls could not help comparing their experiences to those of their friends. Such a comparison would have been inevitable, however, because of the close-knit relationship of all the participants who attended classes together at the same school.

As an alternative procedure, the control group of matched subjects could have attended the same service (which could have been reproduced because it was taped) at a different time from the experimentals. Such a design, however, would have destroyed the double-blind feature, and the set and setting would not have been the same for both groups. The separate, although matched, experimental and control groups would have had to have been kept from communicating or even knowing about each other (perhaps by using students from different seminaries). The preparation and expectation would not have been quite the same. The natural effect of a Good Friday service would have been lost by having the reproduced service on two separate occasions other than Good Friday. With such a design the experimenter and leaders would have known which group was experimental and which was control after the first group had participated. The way the experiment was actually run, uniformity of set, setting, and suggestion was maximized. The experiment demonstrates the difficulties of double-blind technique in group sessions with such dramatic and powerful drug-induced effects in the experimental group.

Subjects might have been screened to find only those who had a particular mystical inclination or who had previously had experiences which closely resembled the mystical typology. Such persons might have felt more at ease in the drug situation, and perhaps their drug experiences might have been even closer to the mystical state of consciousness. Only four of the twenty subjects would have definitely qualified under such a criterion. These four were matched into pairs, and these two experimentals had some of the more strongly "mystical" experiences. As might be expected, their controls were the two who found the religious service most meaningful. To find twenty such subjects might not have been possible at the same seminary and would have required hundreds of hours of interviews. It was thought more instructive to see what would happen with a more representative sample within an already specialized group, all of whom were especially interested in religion.

Observations of the Experimenter during the Experiment

Although the main purpose of this research was to study the internal experience of the subjects, their external behavior during the experiment was also observed and recorded. In general the experiment ran smoothly, according to plan. Before the capsules were distributed there was a general tone of excitement, and eager yet serious expectation. During the first one-and-a-half hours, quiet was observed relatively unbroken in the groups. A few subjects felt the need to visit the men's room for natural purposes or for a smoke. Several subjects asked the experimenter for reassurance because of various somatic symptoms (such as heat or "feeling very strange"). Some were noticeably flushed. The majority sat quietly with their groups. When the time came to move into the chapel, only one subject who felt a little nauseated remained behind with his leader for a time.

The experimentals as a group stayed in the chapel for about 85% of the service compared to the controls who stayed for about 95%. During the first half of the service there was not much activity in or outside the chapel. For the last half more overt behavior occurred in the experimentals. A few went up to the altar. One entered the pulpit and sat at the organ in a symbolic way to express what he felt was a need for someone to lead the service. There were some spontaneous vocal exclamations and some weeping. A few lay down on the pews or the floor; most sat quietly throughout.

Most of the movement outside the chapel was to the men's room. One experimental subject wanted to sit quietly in one of the large rooms for about an hour. Only one subject was taken out of the service by his leader because he became too restless. The leader stayed with him for reassurance.

The leaders were especially helpful in making the experiment run smoothly. The ones who received psilocybin seemed to be entering into the experience much more fully. As leaders, there was no observable difference in effectiveness between the psilocybin and non-psilocybin group. Most of the experimental subjects did not need individual attention, but several later expressed appreciation for the reassurance afforded by the presence of experienced leaders. During the relaxed group discussions, there was more rapport between leaders and subjects who had received psilocybin than between those who had not. Not until after the service had begun did the leaders definitely determine which of their group members received psilocybin. In fact, there were a few initial wrong guesses.

In some cases, there was, after the service, a difference in appearance and behavior between experimentals and controls. Pupil dilation was an obvious physical sign. Experimentals were also more informally attired; ties had been loosened or removed, and hair was not combed. Their dominant mood was quiet detachment or joyful exuberance. They wanted to share the impact of their experience with their friends. Two had a little difficulty in readjusting to the "ordinary" world and needed special reassurance by their leaders until the drug effects subsided.

Summary and Discussion of Data

The data in general have indicated that the experimental subjects, who received psilocybin in the same setting and with the same preparation as the controls, had a statistically significant, *different* experience, as indicated by the higher scores on particular items and groups of items from the three methods of measurement.

These differences in terms of the phenomena of the categories defined in our typology of mysticism were presented in detail in Chapter VI. With the exception of sense of sacredness the combined scores of all items in every category were significantly higher for the experimentals than for the controls, by all three methods. As summarized in Table 34, the significance levels of these score differences were less than .02. The difference in sacredness was not significant only in the content-analysis data (p greater than .37). The conclusion from these data is that the persons who received psilocybin experienced to a greater extent than did the controls the phenomena described by our typology of mysticism. But a more rigorous analysis was needed to determine the degree to which these persons experienced such phenomena. As presented in Chapter VI and summarized in Table 35, when only the scores of the items most essential to the definition of each category were combined into more precise subcategories, the differences between experimentals and controls persisted, for the most part, in their significance (p less than .02). This finding adds weight to our initial impression from Table 34, but still does not answer the question of completeness.

The essential items which remained significant at less than below the .05 level when only "strong" scores were used, were the best indication of the *degree* of completeness or intensity to which the phenomena of the mystical typology had been experienced. In each subcategory the number and occurrence of such essential items from each method of measurement have been discussed above in Chapter VI. The results from the most important subcategories are presented in summary form in Table 35. The subcategories fell into three groups representing three levels of completeness or intensity on the basis of the empirical data.

TABLE 34
SUMMARY OF SIGNIFICANCE LEVELS REACHED BY EXPERIMENTAL GROUP FOR CATEGORIES MEASURING THE TYPOLOGY OF MYSTICISM

Category	Method of Measurement		
	Post-drug Questionnaire	Follow-up Questionnaire	Content Analysis
I: Unity	.001	.001	.002
II: Transcendence of Time & Space	.001	.001	.001
III: Deeply Felt Positive Mood	.020	.020	.002
IV: Sacredness	.020	.055	(.37)
V: Objectivity & Reality	.011	.001	.020
VI: Paradoxicality	.002	.004	.001
VII: Alleged Ineffability	.004	.001	.008
VIII: Transiency	.001	.001	.004
IX: Persisting Positive Changes in Attitude & Behavior	this method of measurement did not measure this category		.002

TABLE 35
SUMMARY OF DATA MEASURING DEGREE OF COMPLETENESS OR INTENSITY OF CATEGORIES OF THE TYPOLOGY OF MYSTICISM

Category	Significance levels reached by experimental group when only the most essential items were combined:			Essential items which remained significant at .05 level when only "strong" scores were used:		
	Post-drug Quest'n're	Follow-up Quest'n're	Content Analysis	Post-drug Quest'n're	Follow-up Quest'n're	Content Analysis
I: Unity						
A. Internal	.001	.002	.002	P9, P72a, P73, P74	F18, F19, F33, F42, F47	C7
B. External	.008	.016	.016	P68	F25	NONE
II: Transcendence of Time and Space						
A. Time	.001	.001	.001	P75, P80	F1, F26, F35	C1
B. Space	.004	.002	.001	P72, P76, P81	F2, F34	C2
III: Deeply Felt Positive Mood						
A. Most Universal	.020	.020	.020	P39	F11, F29, F39	NONE
B. Love	(.15)	.055	.035	NONE	F24	NONE
IV: Sacredness						
A. Implicit	.020	.011	(.37)	P56	F22	NONE
B. Explicit	.09	.09	(.37)	NONE	F30, F48	NONE
V: Objectivity & Reality	.004	.020	.020	P33	F10, F17, F27, F70	NONE
VI: Paradoxicality	.002	.004	.001	P68, P72, P73	F25, F33	C13
VII: Alleged Ineffability	.004	.001	.008	P66	F16, F57a, F92	NONE
VIII: Transiency	.002	.002	.004	P30, P31	F86a	C10
IX: Persisting Positive Changes						
A. Toward Self	a	.001	.004	a	F63a	C15
B. Toward Others	a	.001	(.50)	a	F54a, F60b, F91a	NONE
C. Toward Life	a	.011	.016	a	F53a, F82, F90b	C19
D. Toward Experience	a	.055	(.19)	a	F56a, F94a	NONE

^a Not used for measuring this category.

The *first* group very closely approximated the most complete phenomenological expression of the mystical typology. From all methods of measurement, they had both statistically significant higher scores for the experimentals than for the controls (p less than .016), and essential items which remained significant after "strong" score analysis. These subcategories were: *internal unity, transcendence of both time and space, transiency, paradoxicality, and persisting positive changes in attitude and behavior toward self and life*. We conclude that these phenomena of the mystical typology were experienced in a rather complete way by the subjects who took psilocybin.

The *second* group of subcategories was considered almost but not quite equivalent to the maximum degree of intensity or completeness defined by our typology. They had statistically significant, higher scores for the experimentals than for the controls, from all three methods of measurement (p less than .020), and had some items which survived by the most rigorous application of the Sign Test from both questionnaire studies, but *not* from the content-analysis data. These essential subcategories were: *external unity, objectivity and reality, alleged ineffability, and the most universal phenomena of deeply felt positive mood (joy, blessedness, and peace)*. It will be remembered from our analysis in Chapter VI that joy was the significant element in this last-mentioned subcategory and that peace and blessedness were experienced but not to a significantly higher degree by experimentals. Objectivity and reality had strong supporting evidence from supplementary phenomena such as intensity and totality of the experience. We conclude that the evidence for completeness in this group (from experimentals who took psilocybin) was strong, but not maximal.

The *third* group showed evidence that the phenomena of the mystical typology had been experienced, but not to the most complete degree possible. They did not have confirmation on the significance of the subcategory as a whole, nor on items which remained significant after "strong" score analysis from all methods of measurement. The content-analysis data usually were not significant. These subcategories were the less universal phenomenon of *deeply felt positive mood (love), persisting positive changes toward others and the experience, and sense of sacredness*.

Persisting positive changes in attitude and behavior toward others and toward the experience after six months, while not confirmed by the content-analysis, nevertheless have strong evidence from the follow-up questionnaire. Judged from the content analysis, these changes were apparently not so important to the subjects as changes toward self and life, but the subjects still indicated, when specifically asked on the follow-up questionnaire, that in ways such as more sensitivity and more authenticity toward others, and evaluation of the experience in terms of learning something considered personally very valuable, the experimentals scored significantly higher than the controls with "strong" scores. In addition, when all scores were used, other individual items from all the subcategories under persisting positive changes were significant, as has been discussed above. The weakest evidence for difference between experimentals and controls was for the category, sense of sacredness. Even here the weight of evidence indicated that sacredness definitely was experienced more by the experimentals, as indicated from the post-drug and follow-up data in both the category as a whole and when only "strong" scores were used. The implicit kind of phenomena predominated, and awe (P56 and F22) was especially strong (see Table 35).

We should here distinguish between experimentals and controls in these categories which did not show evidence that the phenomena of the mystical typology had been experienced to the highest degree. In every category, subcategory, or individual item which contributed to a category or subcategory, the experimentals always had a higher total score than the controls, and no individual item was significant for the controls when only "strong" scores were used.

The controls did not experience the phenomena of the mystical typology to any degree of completeness. The subcategories in which the total scores of the controls were closest to the experimentals, were: *blessedness and peace; sense of sacredness; love; and persisting changes toward others and toward the experience*. These categories were the ones which were least significant (although p was still less than .055 in the majority of instances), and showed the most disagreement from the three methods of measurement. The design of the experiment suggests an explanation for the relatively high scores of the controls in these subcategories. In the case of sacredness, the meaningful religious setting of the experiment would naturally have encouraged such a response. The data from the questionnaires illustrated the difference in significance between explicit and implicit kinds of sacredness. Table 19 shows that the controls were closer to, although still below, the experimentals in total score for explicit phenomena than for implicit, in which the experimentals had

significantly higher scores (p less than .02). In the case of love and changes toward others and toward the experience, observations by the controls of the profound experiences of the experimentals and interaction between the two groups on an interpersonal level were important parts of the experience for the controls. This fact was confirmed by the interviews after the experience.

The phenomena which the controls experienced most were among those which were experienced to the least degree of completeness by the experimentals. It can reasonably be assumed that the lack of significance for the experimentals in these categories was due to the experience of the phenomena by the controls, although at a lesser level of intensity and completeness, as was seen from frequency distributions of scores in Chapter VI.

External unity, on the other hand, was not experienced to any marked degree by the controls (mostly scores of "0"). The lack of significance, in this case in the content-analysis data, is assumed to be due to inadequate evidence from the accounts. The design of the experiment did not bring out this type of phenomenon. Individual meditation in a darkened chapel for the peak of the drug effect emphasized and nurtured internal rather than external experience.

From inspection of Table 35, it can be seen that for the subcategories which failed to be confirmed from all methods of measurement, the content analysis was usually the reason. This means that the judges felt that the personal accounts did not indicate "strong" or "most complete" experiences in these categories. Were they correct in their judgment? On the one hand, as judges who understood how each category was defined, they could give a more accurate score than subjects who were rating themselves on individual phenomenological items, but did not know what category was being measured. On the other hand, the judges were scoring only on the basis of second-hand reports. We must not make the assumption that each subject wrote down his complete experience. He might not have mentioned some particular phenomena because he did not think of it when he was writing his report, although we can assume that he reported what he thought was most important or what impressed him the most. Stace has pointed out that even the mystics did not write as much as we would have liked about the actual phenomenology of their experiences.² The questionnaires and interviews provided a check on this type of omission, and such evidence should not be ignored. It might be argued that the experimentals may have used "strong" scores indiscriminately on the questionnaires merely because their experiences were so unusual or intense. There was, however, a selective preference for certain items as can be seen from appendices C and D where the significance levels for all items in both questionnaires are listed. The score distributions listed in the tables in Chapter VI also showed that not all phenomena scored by the experimentals were rated "strong".

Individual reactions to the experience as a whole came out strongly in the interviews. Nine out of ten of the experimentals considered that their experience was significant and worthwhile and would be very willing, in fact eager, to try the experience again. Judged from the interviewer's perspective, eight out of ten of these experiences were predominantly positive, and had a pronounced significant and worthwhile effect in the lives of the persons involved, according to their own testimonies. One experimental had what he considered a worthwhile and significant experience from which he learned a great deal, but in regard to mystical phenomena his experience was not on the same level with the other eight. In his account and interview it was obvious that he had spent much of his time trying to remain in control and to interpret and intellectualize his experience. At one point he attempted to memorize Greek vocabulary-cards. After one such experience he was eager to have another chance to let himself go into the experience more completely without trying to resist the effects of the drug.

The tenth experimental subject had what he termed an interesting "psychological" and "aesthetic" experience for the first three-fourth of his experience, but then became frightened by loss of control and spent the remaining time in a terrifying fight to overcome the drug effects. He would not be interested in repeating the experience because his most predominant memory of the experience was that of fear. Six months later, in Part I of the followup questionnaire, he considered this fear-experience *slightly* harmful because "in a mob panic-situation, I feel I would be less likely to maintain a calm objective position than I might have formerly." During the interview he admitted that he had gone into the experience "as a psychological experiment" and had done

2. Stace, *op. cit.*, pp. 55-56.

no serious devotional preparation. His "inspirational" reading while the drug was taking effect consisted of studying some Psalms for a course in the Old Testament. His interpretation of his experience was a "psychotic episode."

The best indication of the reaction of the controls was the fact that they all were very eager for the opportunity to try psilocybin for themselves in the future. As far as their own experiences during the experiment were concerned, nine out of ten remarked in their accounts, in varying degrees of enthusiasm, about the meaningfulness of the setting in regard to the religious service. Because of the length of the service and the distractions from the experiences of others, only two out of the ten were able to keep from getting a little tired and/or bored. In the interviewer's opinion, only one of the controls had an experience which came anywhere near the level of mystical phenomena experienced by those who got psilocybin.

These subjective observations about the experimentals and controls are substantiated to some degree by certain items on the questionnaires. Within a few days after the experience (post-drug questionnaire data) the scores of experimentals were higher than those of controls for the degree to which the experience was considered both meaningful (P126) and religious or mystical (P127), but this difference only tended toward significance ($p = .062$). After six months, the usefulness of the experience (F56a) was significant at the .004 level and the value for life at the .02 level for the experimentals.

There was no significant difference between the two groups in their desire for more psilocybin experiences as indicated by F98a and F99a (p greater than .23 for both). This evidence was consistent with the fact that nineteen out of the twenty subjects wanted to volunteer for more experiments when questioned after six months.

Conclusions

Under the conditions of this experiment, those subjects who received psilocybin experienced phenomena which were indistinguishable from, if not identical with, certain categories defined by our typology of mysticism. The differences in completeness or intensity among the various categories have been discussed. Not all categories were experienced in the most complete way possible, although there was evidence that each category had been experienced to some degree.

In terms of our typology of mysticism, a "complete" mystical experience as a whole should have demonstrated the phenomena of all the categories in a complete way. The evidence from the content analysis (also supported by impressions from the interviews) showed that such perfect completeness of all categories was not experienced by the experimental subjects in contrast to the controls. The phenomena of internal unity, however, were experienced to a rather complete degree. Because unity is the heart of the mystical experience we might expect that phenomena of the other categories also should have been experienced to a complete degree as "by-products." In our data such a prediction was unquestionably correct for transcendence of time and space, transiency, paradoxicality, and persisting positive changes toward self and life. The evidence indicated a lesser degree of completeness in objectivity and reality, joy, and alleged ineffability; and a relatively greater lack in sense of sacredness, love, and persisting positive changes toward others and toward the experience. The experience of each of these last six subcategories could be termed incomplete to a more or less degree, but definitely present to some extent when compared to the controls. The experience as a whole, therefore, must be termed incomplete, in the strictest sense. It was remarkable, however, that so many phenomena of the mystical typology were experienced by our group of ten experimental subjects, none of whom were especially chosen other than by their own volunteering or had previous experience with psilocybin. While it is true that they were already committed to an interest in religion by the fact that they were all in a graduate school of theology, their middle-class, protestant backgrounds were rather non-mystical. Pre-drug testing indicated that there was no special tendency toward mysticism in personal experience or inclination except in the case of one or two.

The experience of the experimentals was certainly more like mystical experience than that of the controls who had the same expectation and suggestion from the preparation and setting. The most striking difference between the experimentals and controls was the ingestion of 30 mg of psilocybin, which it can be concluded was the facilitating agent responsible for the difference in phenomena experienced.

Although lacking in maximal completeness in some categories, the experimental evidence has strongly suggested that under the conditions described psilocybin can induce states of consciousness which are apparently indistinguishable from, if not identical with, those experienced by the mystics, according to their own descriptions. This conclusion gives support to the claims made by others who have used the same or similar drugs such as LSD or mescaline to aid in the induction of such experiences.

Such evidence can throw new light upon the psychological and biochemical mechanism which are at work in so-called "non-artificial" mystical experience. The biochemical equilibrium of the body and consequently of the mind should not be ignored in any serious study of mysticism. Ascetic practices such as fasting, sustained meditation, diet, restriction, sleep deprivation, flagellation and subsequent infection, sensory deprivation in caves or monastic cells, and breathing and postural exercises have an effect on biochemistry which in turn can produce psychological effects. Psychological conditioning also may influence body biochemistry. Psychology of religion needs to consider biochemical factors as well as psychological, social, cultural, economic, and political forces in the history, practice, and influence of mysticism.

Mystics have generally reported life-enhancing and -enriching effects from their experiences. It is now possible to test these claims by producing the phenomena of the experience and by observing behavior over a period of years in the lives of individuals. The evidence presented above indicated that over a short follow-up of six months, such claims seemed to be true. In addition, after four hours of follow-up interview with each subject, the experimenter was left with the overwhelming impression that the experience had made a profound impact (especially in terms of religious feeling and thinking) on the lives of eight out of ten of the experimental subjects. The control subjects were also impressed with the depth of the experiences of their friend who received psilocybin. These subjective impressions of those who intimately witnessed the experiment by participation and observation without the drug confirm the conclusion that profound and meaningful experiences occurred.

Let us consider more closely the pragmatic question of the lasting benefit or harm of the psilocybin experience and the kind of changes which were produced in individual lives. After six months the changes with the highest scores were all positive, and the experimental subjects attributed these changes to the drug experience. These data have indicated that although the psilocybin experience was quite unique and different from the "ordinary" reality of their everyday lives, the subjects felt that this experience enabled them to appreciate more deeply the meaning of their lives, to gain more depth and authenticity on ordinary living, and to rethink their philosophies of life and values. The data did not suggest that any "ultimate" reality was no longer important or meaningful. Each person who received psilocybin was motivated to integrate constructively what he had learned from his experience into his life-situation in his own way. The fact that the experience took place in the context of a worship service with the use of symbols which were familiar and meaningful to the participants was a help in this regard. Some persons found the music most significant, others the readings and spoken meditations, and still others the theological implications which they discerned themselves.

The continuing significance of the whole experience is perhaps best illustrated by what took place one year later during the next Easter season. Several of the subjects who had received psilocybin requested permission to listen to the tape of the Good Friday service. It was decided that this would be done in a chapel setting for any of the twenty subjects who were interested. Six of the seven students from the experimental group who were in the area attended while none out of nine control subjects did so. Several of the controls commented that they could not afford the time for such a lengthy service which had seemed too long the first time, although they indicated that they would have been quite eager to come if the chance to take psilocybin in such a setting had been offered. This reaction would seem to indicate that the lasting impact of the service was more meaningful to the psilocybin group than to the controls, although unconscious resentment against the experimenter from disappointment at not receiving the drug the first time could also have played a part. During the replay, reverent silence was maintained for the entire two-and-one-half-hour service. After the service, by their quiet demeanor, seriousness, and unenthusiasm for conversation at first, all six persons indicated the meaningfulness of the service for them. This was confirmed in the written accounts and discussion which followed. They all reported that the experience was helpful for integration and appreciation of what had taken place the previous year with psilocybin. The drug experience was not relieved in its original intensity or character, but many things which had been experienced previously on an unconscious level were now made conscious. The familiar and meaningful context was a great help in gaining benefit from both experiences. This follow-up study after one year has not been reported as a part of the data of the experiment

because only part of the psilocybin group was involved, and there was no control group. What happened, however, gives some basis for the conclusion that the psilocybin experience in a religious context can provide the initial stimulus for an ongoing and lasting influence for the benefit of personal life, and that parts of the experience can be reactivated in the integration process without the further use of drugs.

Mysticism and *inner* experience have been stressed much more by Eastern religions than by Western. Perhaps Western culture is as far off balance in the opposite direction with its manipulation of the *external* world as exemplified by the emphasis on material wealth, control of nature, and admiration of science. Mysticism has been accused of fostering escapism from the problems of society, indifference to social conditions, and disinterest in social change. While the possibility of such excesses must always be remembered, our study has suggested the beneficial potential of mystical experience in stimulating the ability to feel and experience deeply and genuinely with the full harmony of both emotion and intellect. Such wholeness may have been neglected in modern Western society.

The relationship and relative importance of set, setting, and drug is a crucial question raised by our results. The fact that the controls had the same set and setting as the experimentals, but not the same experience, shows the utility of the drug as an important facilitating agent for the experimentals induction of mystical phenomena. Other investigators, however, report the predominance of unpleasant and "psychotomimetic" experiences rather than the majority of predominantly positive and mystical experiences which we witnessed.³ The drugs in this case were comparable; the set and setting were not. Thus it would seem that the "drug effect" is a delicate combination of drug plus set and setting. The drug alone is not sufficient, and positive experiences are by no means automatic. A meaningful religious atmosphere has been shown to be one setting in which positive drug experiences can occur. The religious context in our experiment appeared to give the psilocybin subjects a useful framework within which to derive meaning and integration from their experience both at the time and later. Our experience in this experiment has suggested that much forethought and preparation are needed to insure adequate set and setting although the precise qualitative and quantitative role of each factor has not been shown. For example, it must be pointed out that everything possible was done to maximize suggestion, but suggestion alone cannot account for the results because of the different experience of the control group. The hypothesis that suggestibility was heightened by psilocybin cannot be ruled out on the basis of our experiment. Although persuasive and similar to the explanation of mysticism by auto-suggestion,⁴ this hypothesis still needs proof. An effort was made in our experiment to avoid suggesting the phenomena of the typology of mysticism, and the service itself made no such direct suggestion. Psychologists of religion by their interest in psychology and presumed religious sensitivity should be well-qualified to study the variables at work here.

Such research on the effect of the religious context on the psilocybin experience might illuminate the dynamics and significance of worship. Increased understanding of the psychological mechanisms involved might lead to more meaningful worship experiences for those who have not had the drug experience. Of course, there are various approaches to the theological significance of worship. This study was an empirical investigation, but we are aware that there are theological implications. The analogy to the efficacy of the sacraments would have to be considered. Furthermore, theologians must evaluate the light that such research could shed on the doctrine of Incarnation, the Holy Spirit, the presence of Christ, and of *gratia activa*. It must be kept in mind that we are only talking about the analogy or the elucidating suggestiveness of such drug research for a better psychological understanding of these theological concepts. Such considerations raise the question of the place of the emotional factor compared to the cognitive in religious worship. An even more basic question is the validity of religious experience of the mystical type on terms of religious truth. Reactions to these religious implications will vary with theological position and presuppositions, but one value of our study is to stimulate thoughtful examination of the problems.

Many unknown conscious and unconscious factors operate in mystical experience. Much investigation is needed in this area, and drugs like psilocybin can be a powerful tool. Experimental facilitation of mystical experience under controlled conditions can be an important method of approach to a better understanding of

3. P.M. Hoch, "Remarks on LSD and mescaline," *Amer. J. Psychiatry*, Vol. 111 (1955), pp. 787-790. See also remarks in Abramson (ed.), *op. cit.*, pp. 56-60, and review of the history of this view in Unger, *op. cit.*, pp. 115-119.

4. Geroge A. Coe, *The Psychology of Religion* (Chicago: The University of Chicago Press) 1916.

mysticism. Better understanding can lead to appreciation of the role and place of such experiences in the history and practice of religion.

Chapter VIII

SUGGESTIONS FOR FURTHER RESEARCH AND IMPLICATIONS FOR THE FUTURE

This dissertation has demonstrated the potential of at least psilocybin, if not LSD and mescaline by analogy, as a tool for the study of the mystical state of consciousness. A program of future research with these chemicals in the psychology of religion can be divided into two different kinds, depending on the aim: (1) theoretical understanding and (2) social application in a religious context.

The first kind would be primarily theoretical and would have as its aim a more basic understanding of the psychology and phenomenology of mysticism. The method would be to approach the mystical state of consciousness as closely as possible under experimental conditions and to measure the effect of variables. This thesis has been a start toward this approach, but much work needs to be done in this area for a better understanding of mysticism from a physiological, biochemical, and psychological perspective.

Obviously, the first step in such a program would be to reproduce the same experiment with a different group of individuals who would be similar to the subjects already tested to check the repeatability and reliability of the results with the same design. This work should be done both by the same experimenter and by other independent experimenters with as much the same set and setting for the subjects as possible. The service itself has been taped and could be repeated exactly. The same experimental protocol, techniques for matching pairs, questionnaires, and tests could be used. Repetition of our experiment by different workers with other subjects would add to what has already been learned about the most effective way to design and run such experiments. A comparison of these data would further enlarge our understanding of the mystical state of consciousness.

From the work reported above certain interesting modifications can be suggested. If the effect of nicotinic acid plus psilocybin were first determined to be synergistic, antagonistic, or neutral, such a combination in the proper strength could be given to the experimentals while the controls received only nicotinic acid. A better double-blind control would be obtained from such a procedure because everyone would have the same initial reaction. To insure that bias from communication and observation of others would be reduced, the protocol could also be changed so that neither during nor after the experiment each participant would discuss his experience with the others. Subjects in such a case should not know each other outside the experiment, but this would detract considerably from the security and friendliness of the setting. Another perhaps more practical modification in design would be to administer the psilocybin and control substance at the beginning of the chapel service after an initial quiet period of personal meditation (perhaps for 15 to 30 minutes). The set and setting during the important time while the drug was taking effect would be that of serious worship in an actual service and would preserve unbroken a continuity which was disturbed when the groups moved into the chapel. With this change in the timing of the drug administration, either a longer service would have to be used, or when the service was over some type of supervised group interaction and exploration of interpersonal relations would have to be planned for the remaining time during which the psilocybin reaction would still be present (i.e., for two to three hours).

Preparation could be changed so that greater uniformity of expectancy would be achieved. A selected and uniform bibliography of mystical literature could be read and discussed by the groups to gain some familiarity with the kind of experience to be anticipated and to decrease the fear which sometimes occurs from a new and unexpected situation. This would provide a more uniform individual preparation. Also more meetings of the members of the groups with their leaders would increase rapport, mutual support, and sense of security. The practice of group meditation and worship would also aid this sense of togetherness and might make the experimental situation more natural. Experiments could be run with total fasting in advance for varying periods as part of the preparation. This would certainly insure more uniformity of the time of onset of the drug effects. Other ascetic practices such as sensory deprivation or sexual abstinence could be investigated for their influences. Another preparation factor to be tested would be the effect of being in a "state of grace" (i.e., prior

absolution and restitution for any "sins" and guilt therefrom). The meaningfulness of the religious service for the leaders is another important variable. Their attitude and feeling might well add or detract from the sense of sacredness and seriousness which the subjects would feel in the experimental situation.

With adequate and appropriate pre-tests and enough subjects a correlation could be attempted between prior personality structure or religious experience and the types of drug reactions, both positive and negative. There was some very tentative suggestion in a few of our subjects that persons with a "mystical" temperament (i.e., those who already have experienced some mystical phenomena) are more likely to experience a degree of the mystical state of consciousness with the aid of psilocybin. Such an hypothesis could be tested by rigorous screening for subjects with such a temperament by interviews, psychological tests, and questionnaires. A double-blind study with the same experimental procedure as was used above could be run using only such screened subjects. Another method of screening would be to measure a prior, non-drug response to the taped chapel service as measured by questionnaire and interview. Only those subjects to whom such a service was meaningful and moving would be used in the drug experiment when the same service would be repeated at another time.

The success in producing states of consciousness which resemble, although incompletely, the mystical typology in prepared subjects with a single, initial dose of psilocybin encourages the trial of multiple sessions. The sheer uniqueness of the drug experience is overwhelming even to a well-prepared subject and may detract from his ability to let himself go completely and surrender to the experience. The hypothesis that familiarity with the experience positively reinforces set and setting and increases the likelihood of positive experience and mystical phenomena could be tested by repeating the psilocybin experience at regular intervals over a period of time (e.g., two, three, or four sessions in a year).¹ After the first session, single-blind controlled studies would be more practical than double-blind because of the very uniqueness of the experience. A matched control group could be run through repeated sessions at different times from the experimentals with as identical a set and setting as possible. Testing by interview and questionnaire could be done after each session to determine whether any new phenomenology had occurred which more closely resembled the mystical typology.

The questionnaires which were designed for gathering the data for this dissertation could be refined. As has been suggested above certain items did not contribute much to their categories or were not worded well enough to measure what was intended. What has been learned about the effectiveness of the questionnaires as a measuring tool for the study of mysticism could be incorporated into a revised version. For multiple sessions a questionnaire would be needed which could show an increase each time in a particular item if it occurred. During the first session, for example, the participant might rate certainty of the encounter with ultimate reality as "5" on a 0-5 scale if this were the strongest experience he had ever had or had imagined possible up to that time. In his next session, however, he might experience an even more "ultimate" reality. Therefore, although the same questionnaire might be used, a 0-7 scale would provide the opportunity to indicate the same strength as previously ("5"), a little stronger ("6"), or very much stronger ("7"). For the third session a 0-9 scale could be used, etc. New types of questionnaires could also be tried. Instead of directly asking about categories by means of individual scattered items, each category could be explained in an instruction manual similar to that written for the judges. Then each category could be scored as a whole or by a cluster of the most representative items for that category. Another approach might be to quote short descriptions which are good examples of each category from the writings of the mystics and ask the participant to compare his drug experience with these examples on a rating scale of degree of similarity.

Another modification in any on-going research in this field would be longer and more thorough follow-up studies. The subjects could be checked periodically for one to three years to assess possible psychological benefit or harm. For accurate assessment of persisting changes in attitude and behavior, not only the person's own subjective judgment but also those of other persons close to him, such as spouse or intimate friend, could be measured. Actual changes in behavior could be listed and tabulated.

1. Chwelos and Blewett found this to be the case with LSD (*Handbook*, pp. 66-67).

If the conclusions of this dissertation are first confirmed and clarified by the additional experiments suggested above, other experiments could be designed to test more precisely the effect of set and setting on the relative frequency of occurrence of specific mystical elements in the drug experience. For example, if a relatively homogeneous sample of subjects were divided into four equal groups (two groups of experimentals and two of controls), four sessions could be run for each group in two different settings by two different groups of investigators in a Latin-square design. The "religious" setting could be in a chapel as described above by investigators convinced that the drug experience was positive and even potentially "mystical". The other setting would be in a psychiatric hospital by investigators convinced that the experience was negative and merely a "model psychosis." The same pre-drug tests, questionnaires, and interviews would be given to each group, but the initial set and setting in two groups would be "religious" and in two, "psychiatric."

Each group would have two drug sessions and two control sessions - one of each in each of the two settings. The same questionnaire which would have both "positive" and "negative" responses would be given to each group after each session after an account had been written by each person. It would be interesting to determine whether or not the initial set and setting had a controlling effect on both the initial and subsequent experiences in different and the same settings. Such a series of experiments might also shed light on the whole problem of the relationship between psychosis and intense mystical states of consciousness. All the accounts could be content analyzed for both "mystical" and "psychotic" elements.

The study of the basic phenomenology of mysticism in the drug experiences of persons already interested in religion would be only the first step. The claim of some investigators² that mystical phenomena occur even in persons with no interest in religion could be checked by administering psilocybin in a setting free from any religious suggestion. Of course, the basic setting factor of trust, confidence, and friendliness should be maintained.

Let us turn now to the second kind of research which would involve experimental investigation of possible social application in a religious context. Such experiments would be undertaken only after adequate evidence had been accumulated by means of the first or theoretical approach to substantiate the findings and suggestions of our research. If it were confirmed, for example, that personally and socially useful changes in behavior are produced with a meaningful religious setting and preparation, experiments could be designed to develop the best methods and conditions of administration to provide the maximal chance for beneficial effects to occur without danger.

One such experiment could be to establish a retreat center with a trained, permanent staff consisting of psychiatrists, clinical psychologists, and ministers. A uniform technique of procedure and testing would have to be devised so that the results over a period of time could be compared. Small groups, preferably already in rapport, of laymen or ministers to whom such a setting would be meaningful would spend from five to seven days at the center. Screening by means of physical examination and history, psychological testing, preparation of an autobiography, and preliminary interviews, would be done before the group came to the retreat center. Several leaders (staff personnel) would join each group as integral members for the duration of the retreat. At least the first three days would be spent in preparation for the drug session and would include readings of selected materials which had been found helpful to others, group discussions with the staff, worship and meditation alone and with the group, meals and recreation as a group, and individual interviews with the staff. The emphasis would be on building group rapport, a spirit of trust and friendship, and serious expectation of a meaningful experience. The techniques which have proved successful in group dynamics work could be used to facilitate sharing of past experiences between group members and to build the interpersonal honesty and solidarity of the group. After this period of preparation, one whole day would be set aside for the drug session in an appropriate religious setting. The staff members with whom the groups had been working would be in charge with assistance if needed from other staff members who would be standing by. Group discussion of the experience would be an important part of the retreat and would continue for at least two days after the session while data was gathered by the staff by means of written accounts, questionnaires, and interviews. Follow-up meetings of the group could be arranged, and perhaps a repeat of the retreat could be made after a year.

2. Leary and Clard, *op. cit.*, pp. 252-253. See also Sherwood, Stolaroff, and Harman, *J. Neuropsychiatry*, Vol. IV, No. 2, pp. 76-79. The loose use of the terms "religious experience" or "classic, mystic, conversion reaction." adds confusion and misunderstanding unless these terms are carefully defined. See our discussion above on this point, pp. 24-27.

Another experiment along a similar line would be the formation of small natural groups of 4-6 people who would meet periodically for serious religious and personal discussions in depth, Bible study, and worship in the form of prayer and meditation. After a period of several months in which rapport, mutual trust, and bond of fellowship were being established, a drug session could be planned in collaboration with a psychiatrist and minister who both had been trained in the use of psychedelic substances. Pretesting could be done at one of the meetings. A whole day would have to be set aside for the session with the psychiatrist and minister in attendance to administer the drugs, run the session, and collect data in such a way as to add to positive set and setting. Post-session discussion, meetings, and collection of follow-up data would also be important here. The effects of multiple drug sessions could also be studied.

In both of these proposals the most practical kind of controls could be matched groups who underwent the same retreat or cell-group experience without the drug over the same time interval with the same staff at the same place, but at a different time from the experimentals. Once the effectiveness of the method was proved in terms of personal and social usefulness, the most valuable data would consist of comparisons between groups in which different techniques were tried to determine the best method to use for an experience of of maximal benefit.

It must, however, be emphasized that much more research needs to be done at the theoretical level before such pilot research projects for social application should be attempted. Such work must be done carefully and cautiously both because of the social resistance to be overcome and because of potential dangers involved.

In our society the use of drugs for any reason other than for a medical indication in the treatment of some specific illness is suspect. Fear of addiction or physical harm is the intuitive association, but beyond this legitimate fear perhaps the American Puritan heritage with its disapproval of pleasure or enjoyment for its own sake, especially if unearned by hard work, may be a factor. Also the relative ease with which the phenomena of the mystical state of consciousness were induced in our experimental subjects with the aid of psilocybin might seem undeserved when compared to the rigorous discipline which many mystics describe as necessary. Although a drug experience might seem "unearned", our evidence has suggested that preparation and expectation play an important part, not only in the type of experience attained, but in later fruits for life. Perhaps the hardest "work" comes after the experience which itself may only provide the motivation for future efforts to integrate and appreciate what has been learned. The best way to overcome social resistance is to demonstrate the value and safety by careful and responsible investigation.

Although our experimental results indicated predominantly positive and beneficial subjective effects, possible dangers must not be underestimated and should be thoroughly evaluated by specific research designed to discover the causes and methods of prevention of physical or psychological harm, both short term and long term. While physiological addiction has not been reported with psychedelic substances, psychological dependence might be expected if the experience were continually repeated. The intense subjective pleasure and enjoyment of the experience for its own sake could lead to escapism and withdrawal from the world. An experience which is capable of changing motivation and values might cut the nerve of achievement. Widespread apathy toward productive work and accomplishment could cripple a society. Another possible danger might be prolonged psychosis or suicide in very unstable or depressed individuals who were not ready for the intense emotional discharge. If it can be determined that any of these forms of harm occur in certain types of individuals, research could be directed toward the development of pre-test methods to screen out such persons. Our evidence would suggest that research on conditions and methods of administration of the drugs might minimize the chance of harmful reactions. Spectacular immediate advance must be sacrificed for ultimate progress by careful, yet daring and imaginative research under adequate supervision.

The ethical implications also cannot be ignored. Any research which uses human volunteers must examine its motives and methods to make certain that human beings are not being manipulated like objects for purposes which they do not understand or share. But in research with powerful mental chemicals which may influence the most cherished human functions and values, the ethical problem is even more acute. The mystical experience historically has filled man with wondrous awe and has been able to change his style of life and values, but it must not be assumed that greater control of such powerful phenomena will automatically result in wise and constructive use. Potential abuse is just as likely. Those who undertake such research carry a heavy responsibility. A detailed examination and discussion of all the ethical implications would require another thesis; such considerations must be constantly kept in mind as a reminder of the more than normal

caution required.

This is not to say that research should be stopped because of the fear of these various risks in an extremely complex and challenging area with great promise for the psychology of religion. But while research is progressing on the theoretical or primary level and before projects for testing useful social application in a religious context become widespread, serious and thoughtful examination of the sociological, ethical, and theological implications is needed without delay.

Appendix A MEDICAL HISTORY FORM FOR VOLUNTEER SUBJECTS FOR PSILOCYBIN RESEARCH¹

Name:

Address:

Date:

Age:

Sex:

I. Have you ever had any of the following:

Heart disease (rheumatic heart disease, congenital heart defects, or high blood pressure) Yes No

Epilepsy Yes No

Liver disease Yes No

Previous jaundice Yes No

If you have answered "yes" to any of the above, please explain below:

.....
.....
.....

II. a) How much alcohol do you consume per week on the average?

b) How often do you use aspirins and in how large a dose?

c) What other headache or sleeping pills do you use, how often?

d) How much tobacco do you use per week on the average?

III. a) Have you ever received psychotherapy? Yes No

When?

For how long?

Are you presently in therapy?

b) Have you ever been hospitalized for mental illness? Yes No

If yes, please explain in detail (symptoms, length and number of hospitalizations, treatment).

.....
.....
.....

c) Has anyone in your immediate family ever been hospitalized for mental illness? Yes No

If yes, who and for what?

.....
.....
.....

IV. Have you any allergic reactions (thorazine, etc.)? Yes No

If yes, please explain:

.....
.....
.....

Examined by: **M.D. Date:**

1. This was given about three weeks before the experiment and reviewed during physical exam at first interview.

Appendix B PRE-DRUG EXPERIENCE QUESTIONNAIRE²

1. Name:	1.
2. Address:	2.
3. Phone:	3.
4. Age:	4.
5. Sex:	5.
6. Religious denomination:	6.
7. Present occupation:	7.
8. Future plans:	8.
9. Have you ever had a drug experience with psilocybin, mescaline, or LSD?	9.
10. Family history: indicate ages of brothers: Sisters: Which parents are alive?	10.
11. Are you single? married? divorced?	11.
12. Where you raised in the church?	12.
13. At what age did you join the church?	13.
14. Did you ever attend a young peoples' church camp? At what age?	14.
15. Which of your parents were actively interested in religious?	15.
16. Which of your parents actively participated in the church?	16.
17. Do you hesitate to call yourself a Christian?	17.
18. Indicate your theological position on the following continuum:	18. Orthodox Neo-orthodox Liberal
19. How meaningful is the usual worship of your public religious life to you?	19. unmeaningful, slightly meaningful, very meaningful sometimes, very meaningful usually
20. How meaningful is your participation in Holy Communion?	20. unmeaningful, slightly meaningful, very meaningful sometimes, very meaningful usually
21. Are you undertaking your life work in the religious sense of a vocation or calling?	21.
22. Was your decision to follow your life work tied to any particular experience you have had? If so, describe briefly:	22.
23. Did you ever have a sudden conversion experience? At what age? A more gradual one? Over how long? Climax at what age?	23.
24. Have you ever had any mystical or religious experience in the presence of nature? If so, describe briefly:	24.

25. Have you ever had an experience in which you felt that you transcended time and/or space? (If yes, circle which) Describe briefly:

25.
.....
.....

26. Have you ever had an intuitive experience of a sense of Presence of the Divine? If so, describe briefly:

26.
.....
.....

27. Have you ever experienced a feeling of mystical union to any degree? If so, describe briefly:

27.
.....
.....

28. Have you ever had an experience in which you felt that the Numinous was made near to you? If so, describe briefly:

28.
.....
.....

29. Have any of your religious experiences given you a feeling of joy, blessedness, or peace in the Biblical sense of the peace that passes all understanding?

29.
.....
.....

Have you had this experience in ways or circumstances that you would not consider religious?

.....
.....
.....

30. Do you practice any spiritual exercises such as prayer? regular meditation? yogic exercises? special postures? breath control? fasting? others? (describe):

30.
.....
.....
.....

31. Do you have a regular prayer life besides formal public worship?

31.
.....

32. Do you practice intercessory prayer? prayers of thanksgiving? prayers of petition? requests for forgiveness?

32.
.....
.....
.....

33. Do you believe that the effects of prayer are completely auto- or group suggestion?

33.
.....

34. Have you ever experienced a sense of sin in a general sense?

34.
.....

In a specific sense in which you felt overpoweringly guilty about a particular wrong deed or attitude?

.....
.....
.....

2. This was administered about three weeks before the experiment and reviewed during first interview.

Appendix C

POST-DRUG QUESTIONNAIRE WITH SIGNIFICANCE LEVELS OF THE DIFFERENCE BETWEEN SCORES OF EXPERIMENTALS AND CONTROLS³

(Interactive version of this questionnaire is here: <http://en.psilocophy.info/TripograM>.)

Name: Date:

Approximately what percentage of the 2-1/2 hour service did you remain in the chapel?

Please evaluate the following items in regard to your own experience in the psilocybin experiment. Rate each descriptive unit according to the following scale:

- 0 - did not experience at all
- 1 - cannot decide whether I experienced this or not
- 2 - experienced slightly
- 3 - experienced moderately
- 4 - experienced strongly

Note: Please reserve the highest rating (4) for a qualitative level which would equal or excel any previous personal experience or expectation which you would consider **strong** of these states. Feel free to make any further comments on any item in order to clarify your response.

1. Seeing symbolic meanings of things.	.....	(.18)
2. Feeling of unity with your group.	.....	(.64)
3. Sense of the preciousness of life.	.....	.02
4. Feeling of being very wise, knowing everything.	.....	(.23)
5. Terror or fear.	.....	.004
6. Sense of finitude.	.....	(.23)
7. Sense of wonder.	.....	.004
8. Panic.	.....	.016
9. Lose of self.	.....	.001
10. Easy understanding of the feelings of others.	.....	(.5)
11. Concern and preoccupation with other people coming and leaving the room.	.....	(.64)
12. Being able to operate on several levels at once.	.....	.004
13. Sense of humility.	.....	(.35)
14. Sense of well being.	.....	(.38)
15. Fear of losing control.	.....	.004
16. Seeing a light which appeared to have no naturally explainable source.	.....	.016
17. Feeling that you were going to die during the experience.	.....	(.63)
18. Sense of having known the universe in its wholeness.	.....	(.016)
19. General sense of sin.	.....	(.5)
20. Conviction of certain specific sins in your life.	.....	(.50)
21. Sense of forgiveness or cleansing.	.....	(.35)
22. Sense of loneliness or aloneness.	.....	.02
23. Sense of ultimate goodness as the basis of reality.	.....	.035
24. Intuitive knowledge of your immortality.	.....	(.11)
25. Sense of judgment on your life.	.....	(.78)
26. Appearance of various levels of consciousness.	.....	.001
27. Suddenness of appearance of various levels of consciousness.	.....	.002
28. Suddenness of disappearance of various levels of consciousness.	.....	.004
29. Stability of level of consciousness during the experience.	.....	.035

30. Transcency of duration of deepest levels.	.....	.002
31. Transcency of duration of levels other than the deepest.	.....	.004
32. Permanence of new levels of consciousness after the experience.	.....	(.062)
33. Sense of certainty or conviction of encounter with ultimate reality (in the sense of being able to "know" and "see" what is really real) at the time of the experience.	.....	.020
34. Sense of certainty or conviction of encounter with ultimate reality now (in looking back).	.....	(.062)
35. Sense that what was encountered was not real at the time of the experience.	.....	(.5)
36. Sense that what was encountered was not real now (in looking back).	.....	(.5)
37. Intensity of the response to ultimate reality.	.....	.004
38. Totality of the response to ultimate reality.	.....	.016
39. Exaltation.	.....	.020
40. Depression.	.....	(.09)
41. Love.	.....	.035
42. Hate.	.....	(.35)
43. Tenderness.	.....	(.66)
44. Exuberance.	.....	.002
45. Meanness.	.....	(.19)
46. Insecurity.	.....	(.11)
47. Blessedness.	.....	(.15)
48. Despair.	.....	.02
49. Peace.	.....	(.09)
50. Overflowing energy.	.....	.008
51. Anxiety.	.....	(.26)
52. Ecstatic Joy.	.....	.004
53. Intellectual illumination.	.....	(.062)
54. Retention of such illumination after the experience.	.....	.008
55. Sense of being grasped and dealt with.	.....	.004
56. Sense of awe or awesomeness.	.....	.011
57. Sense of reverence.	.....	(.78)
58. Sense of mysterious fascination in spite of terror or fear (in the sense of a shaking or trembling in the utmost depths of your inner being).	.....	.008
59. Sense of the wholly otherness of what was met in the experience.	.....	.035
60. Sense of your own finitude in contrast to the infinite.	.....	(.09)
61. Sense of profound humility before the majesty of what was felt to be sacred or holy.	.....	(.062)
62. Sense of presence of what was felt to be holy, sacred, or divine.	.....	(.64)
63. Sense of absence of anything that was felt to be holy, sacred, or divine.	.....	(.35)
64. Sense that the experience is describable by logical statements which are not contradictory.	.....	(.35)
65. Sense that an attempt to describe the experience in logical statements becomes involved in contradictory language.	.....	.016
66. Sense that the experience cannot adequately be described in words.	.....	.008
67. Sense that what is experienced forms part of a larger whole.	.....	(.26)
68. Paradoxical dissolving of the subject-object dichotomy in spite of the empirical multiplicity of objects (they are still perceived as separate).	.....	.008
69. Intuitive experience of the essences of objects.	.....	.016
70. Sense of unity with these objects.	.....	.008
71. Felt awareness of the life or living presence in all things.	.....	.032
72. Paradoxical transcendence of space as defined in 68-71.	.....	.004
72a. Sense of the loss of the multiplicity of all particular sense impressions.	.....	.004
73. Pure awareness with no empirical distinctions (i.e., one is beyond the self consciousness of sense impressions, yet one is not unconscious).	.....	.002
74. Sense of unity with ultimate reality at the level described by 72a and 73.	.....	.008
75. Transcendence of time in the sense defined by 72a-74.	.....	.002
76. Transcendence of space in the sense defined by 72a-74.	.....	.004
77. Consciousness of a "Beyond" or "More".	.....	(.15)
78. Expansion of usual personal consciousness to other dimensions within the self.	.....	.001

79. Expansion of usual personal consciousness to other dimensions beyond the self.	.....	.004
80. Transcendence of time in the sense defined by 77-79.	.....	.001
81. Transcendence of space in the sense defined by 77-79.	.....	.004
82. Sense of the presence of God.	.....	(.83)
83. Contact or bond with God.	.....	(.64)

Please rate yourself on the following items both a) **during** and b) **since** the experience:

	During	Since
84. Increased integration of personality.	..... (.37)	..... (.09)
85. Disintegration or destructive effects on personality.	..... (.062)	..... (.13)
86. New significance to life.	..... (.62)	..... .002
87. Lessening of significance to life.	..... (.13)	..... (1)
88. Death experience.	..... .032	..... (.063)
89. Rebirth experience.	..... .032	..... (.19)
90. Feeling of love toward others.	..... (.38)	..... (.38)
91. Feelings of antagonism and hate toward others.	..... (.09)	..... (.25)
92. Felt need for some type of service for others.	..... (.50)	..... (.25)
93. Actual changes in behavior in ways you would consider constructive and positive.	..... (.66)	..... (.18)
94. Sense of increased self-centeredness.	..... (.11)	..... (.25)
95. Conversion experience.	..... (.35)	..... (.19)
96. Sense of belonging to a new and greater unity.	..... .008	..... (.062)
97. Sense of subjective delusion.	..... (.063)	..... (.063)
98. Confusion of thinking.	..... .004	..... .032
99. Feelings of unreality.	..... .016	..... (.063)
100. Physical discomfort.	..... (.23)	..... (1)
101. Loss of memory for part of the experience.	..... .35	..... .020

Please rate the following phenomena in regard to your experience **during** the experiment:

102. Loss of consciousness.	.....	.16
103. Distortion of visual perception.	.....	(.055)
104. Colors more intense.	.....	.001
105. Visions of colors, geometric patterns, objects, animals, people, scenes (circle any experienced).	.....	.001
106. Seeing colors around heads or bodies of others.	.....	.032
107. Hearing voices which were not from anyone present or from the loudspeaker.	.....	(.13)
108. Unusual odors or scents.	.....	(.063)
109. Hunger.	.....	(.15 - for controls)
110. Tears.	.....	(.35)
111. Sense of body melting.	.....	(.19)
112. Nausea.	.....	.008
113. Dizziness.	.....	(.15)
114. Sensation of floating.	.....	(.09)
115. Sense of bodily warmth.	.....	.035 (for controls)
116. Itching or burning of skin.	.....	.011 (for controls)
117. Headache.	.....	.5 (for controls)
118. Coldness.	.....	(.37)
119. Sense of being out of the body.	.....	(.062)
120. Explosive anger of fury.	.....	(.13)

121. Anxious about having to come "out of it."	.....	.008
122. Did you particularly like or feel close to either of your leaders? Which one? Please rate your feeling (0-4).	.....	(.11)
123. Did you particularly dislike either leader? Which one? Please rate your feeling (0-4).	.....	.032
124. Did you particularly like or feel close to any participant in the experiment? Who? Please rate your feeling (0-4).	.....	(.35)
125. Did you particularly dislike any participant in the experiment? Who? Please rate your feeling (0-4).	.....	(.37)

Please rate (0-4) the degree to which you now feel that:

126. Your experience was valuable to you personally.	.....	(.062)
127. Your experience was mystical or religious.	.....	(.062)
128. Do you think you had psilocybin?	.....	.001
129. Please rate (0-4) the meaningfulness of the service as a whole.	.....	(.64)

3. Probabilities that the difference was due to chance are listed for each item. The Sign Test was used and the prediction was made that the scores of experimentals would be higher than of controls unless otherwise indicated.

Name: Date:

SECTION II:

(Interactive version of this questionnaire is here: <http://en.psilocophy.info/TripograM>.)

Looking back on your Good Friday experience, please rate the **degree to which** at **any time** during that day (after the experience began) you experienced the following:

NOTE: In your evaluations of degree please use this rating scale:

5 - **Very** strongly (more than ever before in my life and stronger than 4)

4 - Strongly (would be equivalent in degree to any previous strong experience or expectation of this description)

3 - Moderately

2 - Slightly

1 - Cannot decide

0 - None, not at all

1. Loss of usual time sense.	.....	.001
2. Loss of usual awareness of where you were.	.....	.002
3. Certainty of the reality of what was experienced.	.....	.020
4. Enhanced capacity of mind.	.....	.008
5. Intensity of your response to the experience.	.....	.001
6. Totality of your response to the experience.	.....	.001
7. Sense of having known the universe in its wholeness.	.....	.016
8. Definite change in your usual state of consciousness.	.....	.002
9. Suddenness of appearance of various dimensions of consciousness.	.....	.020
10. Intellectual illumination.	.....	.035
11. Ecstasy.	.....	.004
12. Peace.	.....	(.5)
13. Happiness.	.....	(.23)
14. Sense of presence of what can only be described as nameless.	.....	.032
15. Sense of sacredness with which you regarded your experience.	.....	(.37)
16. Feeling that you could not do justice to your experience by a verbal description.	.....	.001
17. Certainty of encounter with ultimate reality (in the sense of being able to "know" and "see" what is really real).	.....	.008
18. Loss of your own identity.	.....	.004
19. Pure awareness beyond any empirical content.	.....	.002
20. Meaningfulness of your own life.	.....	(.055)
21. Rebirth experience.	.....	.016
22. Awe.	.....	.011
23. Communion with ultimate reality.	.....	(.23)
24. Deep interpersonal relations with other people present.	.....	.035
25. Loss of feelings of difference from objects.	.....	.016
26. Eternity.	.....	.002
27. Gain of insightful knowledge experienced at an intuitive level.	.....	.004
28. Love (toward one's fellow man as a human being, not of an erotic or sexual nature).	.....	(.26)
29. Delight.	.....	.016
30. Sense of your own finitude in contrast with the infinite.	.....	.020
31. Expansion of usual personal consciousness to other dimensions within the self.	.....	.001
32. Expansion of usual personal consciousness to other dimensions beyond the self.	.....	.004
33. Fusion of the self into a larger undifferentiated whole.	.....	.008
34. Spacelessness.	.....	.004
35. Timelessness.	.....	.004
36. Feeling of completeness.	.....	.004
37. Intuitive experience of the essences of objects.	.....	.032
38. Sense of being grasped and dealt with by the experience.	.....	.001
39. Joy.	.....	.016
40. Sense of reverence.	.....	(.5)

41. Sense of belonging to a new and greater unity.	.....	.008
42. Loss of sense of self as a predominantly positive experience.	.....	.004
43. Loss of sense of self as a predominantly negative experience.	.....	.004
44. Sense of unity with objects.	.....	.032
45. Blessedness.	.....	(.11)
46. Exaltation.	.....	(.37)
47. Freedom from the limitations of the self in connection with a unity or bond with what was felt to be all-encompassing and greater-than-self.	.....	.004
48. Sense of being at a spiritual height.	.....	.016
49. Unity with ultimate reality.	.....	.016
50. Sense of the presence of God.	.....	(.5)
51. Love of God or Christ.	.....	(.26)
52. Return to your usual state of consciousness the day after the experience.	.....	.002

SECTION III:

(Interactive version of this questionnaire is here: <http://en.psilocophy.info/TripogramM.>)

The purpose of this section is to measure certain persisting effects which you consider due to your Good Friday experience. Use for comparison your status before Good Friday. Using the same rating scale as in Section II preceding (single 0 to 5 scale), please evaluate in regard to your **present** condition **the degree to which:**

53. The experience has changed your philosophy of life.	.....	a) positively .001	.....	b) negatively (1)
54. You have become more sensitive.	.....	a) more sensitive .002	.....	b) less sensitive (1)
55. You have less personal integration.	.....	a) (.5)	.....	b) more .002
56. You have learned something useful from the experience.	.....	a) .004	.....	b) detrimental (1)
57. You have had difficulty in trying to communicate your own experience to others who were not present.	.....	a) .002	.....	b) Have had ease (.11 - for controls)
58. Your behavior has changed in ways you would consider negative since the experience.	.....	a) (.13)	.....	b) positive (.002)
59. You now feel a greater need for service for others.	.....	a) .035	.....	b) lesser need (1)
60. You are less your true self with others.	.....	a) (1)	.....	b) more .008
61. Feelings of depression have increased.	.....	a) (.063)	.....	b) decreased (.063)
62. Your appreciation for life has.	.....	a) increased .002	.....	b) decreased (.25)
63. You have a greater sense of inner authority in your life.	.....	a) .002	.....	b) lesser (1)
64. Your life has a diminished dynamic quality.	.....	a) (.25)	.....	b) heightened .008
65. Others have remarked about a negative change in you since Good Friday.	.....	a) (1)	.....	b) positive change (.19)
66. You have decreased feelings of happiness.	.....	a) (.13)	.....	b) increased (.11)
67. Your life has more meaning.	.....	a) .035	.....	b) less meaning (.5)
68. You are more tolerant toward others.	.....	a) .032	.....	b) less tolerant (1)
69. You have less peace in your life.	.....	a) (.7)	.....	b) more peace (.11)
70. You are convinced now in retrospect that you encountered ultimate reality in your experience (i.e., that you "knew" and "saw" what was really real).	.....	.016	-	-
71. You have a decreased achievement efficiency.	.....	a) (.7)	.....	b) increased (.5)
72. You have an increased sense of reverence.	.....	a) (.062)	.....	b) decreased (1)
73. You have been accused of logical contradiction in trying to describe the meaningfulness of your own experience to others who were not present.	.....	(1)	-	-

74. Feelings of anxiety have increased.	.....	a) .032	.....	b) decreased .016
75. You now have a less certain vocational commitment.	.....	a) (1)	.....	b) more certain (.063)
76. You have a more positive relationship with others.	.....	a) (.063)	.....	b) more negative (.9)
77. You are a less creative person.	.....	a) (.25)	.....	b) more creative (.06)
78. You have more enthusiasm for life in general.	.....	a) (.062)	.....	b) less enthusiasm (.25)
79. Your sense of values (i.e., what is important to you in life has changed).	.....	a) positively .035	.....	b) negatively (1)
80. You place more importance on traditional theological formulations to express spiritual insights.	.....	a) (.5)	.....	b) less importance (.035)
81. Your life has less richness.	.....	a) (1)	.....	b) more richness .020
82. You feel that you now know a new dimension of life.	.....	a) .004	-	-
83. You spend less time for devotional life.	.....	a) (.6)	.....	b) more time .008
84. Your appreciation for the whole of creation has increased.	.....	a) (.035)	.....	b) decreased (.25)
85. You now feel more hatred toward others.	.....	a) (.9)	.....	b) more love .016
86. You have lost by now the state of consciousness which you experienced on Good Friday.	.....	a) .004	.....	b) retained (.5)
87. You have more joy in your life.	.....	a) .016	.....	b) less joy (.25)
88. You now feel that what you experienced was a subjective delusion.	.....	(.25)	-	-
89. Time spent in quiet meditation has increased.	.....	a) .008	.....	b) decreased (.5)
90. You have less of a sense of the preciousness of life.	.....	a) (1)	.....	b) more .008
91. You are a more authentic person.	.....	a) .016	.....	b) less authentic (1)
92. You now feel that the meaningfulness of your own experience is beyond words.	.....	.004	-	-
93. You have less of a sense of the adventurous outreach of life.	.....	a) (1)	.....	b) more (.09)
94. Your experience has been valuable for your life.	.....	a) .020	.....	b) has been a hindrance (.13)
95. You now feel that life has taken a definite change of course because of this experience.	.....	.032	-	-
96. You have tried to recapture any parts of the Good Friday experience since then.	.....	(.15)	-	-
97. You have been successful in this attempt.	.....	(.19)	-	-
98. You would be interested in repeating the same experience you had on Good Friday.	.....	a) (.26)	.....	b) would not be interested (.5)
99. You would be interested in having more of these kind of experience (not necessarily with the hope of an exact repetition of your Good Friday experience).	.....	a) (.23)	.....	b) would not be interested (.25)
100. You are convinced that you had psilocybin.	.....	a) .001	.....	b) did not .001 (for controls)

Appendix E

CONTENT ANALYSIS

Content Analysis Instruction Manual for Judges

1. On the basis of categories described below, you are asked to score twenty accounts of personal experiences.

The scoring is based on the degree to which each category is experienced.

The degree is defined in terms of either intensity or completeness, depending on the nature of the category. In general, the following rating-scale is used:

3 Experienced to a **strong** degree. (Such a level corresponds to the highest degree of intensity or completeness as defined for each category.)

2 Experienced to a **moderate** degree. (More than slight, but not enough to be scored as strong.)

1 Experienced to a **slight** degree. (But enough for inclusion in this category.)

0 None, or not applicable. (The account gives no impression that this category was experienced at all.)

2. Definition and Explanation of Categories to be Scored

I. Transcendence of Time and Space

This category refers to loss of the usual sense of time and space, without loss of consciousness (in contrast to sleep or coma). Time means clock time, but may also be one's personal sense of his past, present, and future. Subjectively-felt time may be shortened or lengthened. Space means the usual three-dimensional perception of one's environment.

Loss of time and space is scored separately, and is based on completeness. A high score (3) for time indicates that for some period, however be belief, the experiencer is aware that his normal sense of time is completely gone. There may be a feeling of being completely "outside" of time, or that time has "stopped" or ceased to exist. Lesser degrees than "complete" are the shortening or lengthening of subjective periods of time. The apparent lengthening or dragging of time which may be described in connection with boredom is the lowest level (1). A strong degree of loss of the sense of space indicates that the experiencer is no longer aware of where he is during the experience. There may be a complete or partial feeling of loss of the limitations of usual three-dimensional space. If orientation remains but spatial perceptions are altered, score as "slight" (1) or "moderate" (2), depending on the degree of approximation to complete loss of space. Experience of "eternity" or "infinity" indicates timelessness, spacelessness, or both, depending on the context.

II. Positive mood

The elements of this positive mood are joy, love, and peace. They are called positive because of the value attached to them by the experiencer. They may occur together or individually, and at any time during the whole experience - e.g., at a climactic point or as part of an afterglow effect.

Joy may be of the exuberant or quiet type and may include such feelings as exaltation, rapture, ecstasy, bliss, delight, and/or happiness. Love is of one's fellow man as a human being, but not of an erotically stimulation nature; or may be of a cosmic scope such as love of nature, of the universe, of God. A feeling of harmoniousness may be included.

Scoring level is based on intensity:

3 This level indicates an experience that is profound and deeply felt, i.e., close to the strongest human experience of such elements. For example, the strongest degree of peace is that which "passeth understanding." Tears associated with any of these elements of positive mood may be a sign of the overpowering nature of the experience.

2 This level lacks the extreme profundity and depth of feeling, but the mood is still moderately intense.

1 There is definite evidence here of the mood being present, but with low intensity.

III. Sense of Sacredness

This category comprises the sense of sacredness which is evoked by the experience, in whole or in part. The sacred is here defined broadly as that which a person feels to be of special value and capable of being profaned. The basic characteristic of sacredness is a non-rational, intuitive response in the presence of inspiring realities. No religious "beliefs" need necessarily be involved in such a sense of sacredness or be included in a sense of reverence or a feeling that what is experienced is holy or divine.

This basic characteristic may be described directly, or the response may take various forms. The experiencer may be moved with awe, wonder, humility, or a hushed reverent feeling. Spontaneous acts such as prayer or kneeling may be evoked. Other examples of this non-rational, intuitive response may include a sense of: finitude in contrast to the infinite; humility before the overpowering majesty of that which uniquely transcends the finite; the "wholly other"-ness of what is felt to be holy or divine; a mysterious fascination in spite of a feeling of awe, fear, or terror in the sense of shaking or trembling in the innermost depths of one's being; the urgency or energy of the holy or divine. As indicated, fear or terror may be part of the experience of sacredness, but certainly also can be experienced in a quite unrelated way. Do not score fear under this category, if not related.

The use of religious terminology to describe the experience is another indication of sacredness. For example, the response may be interpreted by the experiencer as a sense of Divine Presence, the consciousness of a Beyond or More, the awareness of some cosmic Principle or Universal Self, or more specifically as the presence of Christ, God, or some other deity. Sacredness may be strongly felt, however, without any of these interpretations being given.

Feelings of joy, love, or peace (of the previous category) may be evoked with a response of sacredness. Such an interconnection of these two categories should be watched for, but both categories should only be scored when there is clear indication that elements of both are present. However, they do not necessarily occur together.

Scoring level is based on intensity of the basic response in any of the possible forms. Intensity may be judged from the tone, manner of description, and context.

3 The profound sacredness of this level may include the high value and significance which the person places on his experience. The impact is shaking and very inspiring. Breathless awe may also accompany this level.

2 The profundity and extreme character of 3 is lacking, but the sacredness is still impressive.

1 Sacredness is definitely present, but weakly felt, i.e., not outstanding.

IV. Unity

The category of unity is divided into internal and external types which are different ways of experiencing an undifferentiated unity. The major difference is that the internal type finds unity through an "inner world" **within** the experiencer, and the external type finds unity through the external world **outside** the experiencer. Both types may be experienced by the same person.

A. Internal Unity

The essential elements of unity experienced by turning inward are: loss of usual sense impressions, and loss of self without becoming unconscious. The multiplicity of usual external and internal sense impressions (including time and space), and the empirical ego or usual sense of individuality, fade or melt away, while consciousness remains. In the most complete experience, this consciousness is a pure internal awareness beyond empirical content, with no external or internal distinctions. One is not unconscious, however, but rather very much aware of an "inner world" of undifferentiated unity.

These essential elements are described in terms of paradox. In spite of loss of sense impressions and dissolution of usual personal identity or self, the "I" still experiences the awareness of oneness or unity. The unity itself may be described as empty, yet full and complete. Either or both sides of this paradox may be emphasized by the various expressions used. On the one side, for example, the feeling of oneness with an empty unity expresses an awareness of the loss of sense impressions and may be indicated by such words as emptiness, void, abyss, wayless, unorganized, darkness, dissolution, or pure self. On the other

side, the feeling of oneness with what is all-encompassing or greater than the usual self may be expressed by such words as fullness, completeness, pure being, or unity with the whole. These various expressions of the essential elements are evidence of the internal type of unity. Of course, the context must be considered.

Watch for associated experiences which may alert you to these essential elements. Some examples are: expansion of consciousness to another "world" of reality different from the ordinary; or consciousness of an underlying cosmic Principle, Beyond or More, Universal Self, Logos, Christ, or God. However, for internal unity to be scored, such experiences must have additional clear indication of the loss of sense impressions or self with retention of awareness (e.g., unity, bond, or absorption with the particular example or additional description with some of the expressions used above).

Scoring level is based on completeness:

3 A strong degree of completeness means that there is loss of the multiplicity of all sense impressions and complete loss of self. A pure awareness of an undifferentiated unity is present beyond empirical content with no internal or external distinctions. In fact, internal and external lose their meaning. Time and space are completely transcended.

2 A moderate degree of completeness means that internal distinctions remain. Although all external sense impressions and the usual sense of self are lost, internal imagery continues. Oneness is not complete.

1 There is definite evidence of the essential elements, but not in a complete a way as in level 2. Sense impressions are lost, but only partially. There is only incomplete loss of the sense of self. Some awareness of the external environment remains.

B. External Unity

In this sub-category, unity is perceived outwardly with the physical senses through the external world. A sense of underlying oneness is felt behind the empirical multiplicity. The observer or subject feels that the usual separation between himself and an external object (inanimate or animate) is no longer present in a basic sense, yet the subject still knows that his individuality is retained. In spite of the empirical multiplicity of objects, which are still perceived as separate, the subject-object dichotomy is nevertheless in a paradoxical sense dissolved. On one level, the objects are separate, yet on another they are, at the same time, one with the subject. Another way of expressing this same phenomenon is that the essences of objects are experienced intuitively and felt to be the same at the deepest level. The subject feels a sense of oneness with these objects, because he "sees" that at the most basic level all are a part of the same undifferentiated unity. This oneness may be felt through things or people. Such external unity may also come as a deeply felt awareness of the life or living presence in things. There may be the realization that nothing is "really dead".

Watch for associated elements such as expansion of consciousness beyond the usual sense of self or consciousness of a Beyond or More, some cosmic Principle, etc. Such associated elements may point to more specific evidence of oneness or unity through external things. Completeness of associated loss of time varies, but transcendence of space is only partial or paradoxical, because external objects seem both separate and yet not separate.

Scoring level is based on completeness:

3 At this most complete level, the oneness has both depth and breadth. The capsule statement, "All is One," emphasizes the broad dimension of this underlying unity in all things. A cosmic dimension is felt.

2 The depth of oneness through things or people is present, but not the same wide scope of underlying unity in everything as in the most complete experience. The loss of usual separation between subject and object is limited to the immediate rather than cosmic dimension.

1 Oneness, kinship, friendship is felt with unusual closeness, but the depth of oneness is not so complete as level 2.

V. Transiency of Unity

Transiency means non-permanence of duration, i.e., loss of the phenomena of internal or external unity after, or perhaps even before, the whole experience is over. The duration of unity during the experience may last from second to hours, and the completeness may vary. Disappearance may seem gradual because of the afterglow effect, but transiency means that unity is not continuously sustained when the experience

is over. Watch for indications that the essential elements are no longer present, e.g., mentions of "coming out" or "back to normal."

Scoring level is based on the intensity of the contrast between the degree of unity experienced during and afterwards:

3 A strong intensity of contrast means that although there may be a re-living in memory and persisting changes in other ways, the actual experience of unity does not continue in the ongoing life of the experiencer. Even a moderate or slight degree of unity can produce a strong contrast in comparison to usual consciousness.

2 A moderate intensity of contrast means that some of the actual phenomena of unity persist after the experience as a part of regular consciousness (even after 5 months), although perhaps in a lower degree of completeness.

1 A low intensity of contrast means that much of the actual phenomena of unity persists at the same level of completeness as during the experience as a part of regular consciousness.

0 No contrast means that the level of unity experienced continues unchanged afterwards. Of course, if none of the phenomena of unity was experienced at all, transiency also would be scored as 0.

VI. Objectivity or Reality

This category has two interrelated elements: (1) insightful knowledge or illumination which is felt at an intuitive, non-rational level and gained by direct experience, and (2) the authoritativeness or the certainty for the experiencer that such knowledge is truly or ultimately real, in contrast to the feeling that the experience was a subjective delusion. These two elements are connected because the knowledge through participation in ultimate reality (in the sense of being able to "know" and "see" what is really **real**), carries its own sense of certainty. Two kinds of reality must be distinguished in reading the accounts: (a) "ordinary" reality (the reality of usual, everyday consciousness), and (b) "ultimate" reality (awareness of another dimension not the same as "ordinary" reality but still quite "real" to the experiencer. In fact, "ultimate" reality may be judged to be more profoundly real than "ordinary" reality. In each individual case, the context must determine which type of reality is being mentioned or described.

Such insightful knowledge does not necessarily mean an increase in facts, but rather intuitive illumination. What becomes "known" (rather than intellectually assented to) is intuitively felt to be authoritative and requires no proof at a rational level, and has an inward feeling of objective truth. The content of this knowledge can be divided into two main types: insights into being and existence in general, and insights into one's personal, finite self. The certainty of the reality and significance of the content applies to both. Examples of insights about being and existence in general are the direct realization through the present experience of hitherto undreamed-of realities and possibilities of experience, new perspectives on old facts or ideas, new understanding of relationships and meanings, new appreciation of the universe as a whole, or an experience of "everything falling into place." Examples of insights about one's personal self are: a new certainty about vocational choice; realization of faults or problems to be met; understanding of the causes of conflict; or a clear vision of one's true self without self-deception. Such personal insights are at a level different from "ordinary" everyday reality.

Scoring level is based on the intensity of the certainty for the experiencer that the insightful knowledge gained is of "ultimate" reality (i.e., really **real** and not a delusion):

3 The characteristic of this level is the profundity of the conviction that "ultimate" reality has been encountered. The insightful knowledge is felt to be profoundly significant and true. The response of ultimate reality is total, and there is a feeling of being totally grasped and dealt with. There is no doubt that what is experienced and known is truly or ultimately real, and this conviction persists after the actual experience is over (even after 5 months).

2 The totalness and profundity of the certainty is lacking. There is some doubt as to the "ultimate" or true reality of the insights gained. Degree of certainty may decrease after the experience.

1 Insights are present, but at a less intense level of certainty of their "ultimate" reality than in 2. There is serious doubt as to their reality, but some conviction of reality remains, although it may be on the wane.

VII. Paradoxicality

Any use of paradoxical language in describing or interpreting the experience or its meaning should be scored in this category. Paradoxical language is defined as language which is logically contradictory in

statements about, descriptions of, or interpretations of the experience. Examples may include the experience of an empty, yet full and complete unity, the paradoxical loss of the sense of self and dissolution of individuality with retention of consciousness of what is experienced, or the separateness, yet unity with objects in the experience of external unity (paradoxical transcendence of space). Watch for descriptions of such paradoxical experiences.

Degree of paradoxicality is to be scored on how paradoxical any examples found appear to the judge, i.e., based on degree of intensity:

3 This level means that although obviously contrary to common sense, contradictory statements are still strongly stated as true descriptions of the experience. The examples are striking, and the account gives a strong impression of paradoxicality.

2 Contradictory statements appear only moderately paradoxical. The striking element is lacking.

1 Paradoxicality is present, but only to a low degree. The examples are not particularly impressive.

VIII. Alleged Ineffability

This category is for any mention or indication of difficulty in adequately describing one's own experience in words. Watch for comparisons with the person's previous ease or difficulty in describing his personal experiences. The tone of the whole account is important in judging this category.

Scoring level is based on the intensity of the indication of difficulty of description.

3 This level designates direct statements made with conviction that the experience is beyond words and verbal description.

2 This level reflects direct statements of ineffability which are made without the emphasis of level 3, or strong indirect indications from the account in general.

1 Statements give an impression of ineffability, but only weakly.

IX. Persisting Changes in Attitude and/or Behavior after Six Months

This category is for any **persisting** changes, positive or negative, in attitude and/or behavior which are a result of the experience. These changes are divided into sub-categories according to type of change, whether positive or negative. Phenomena occurring during the actual experience are not included, only their continuing effects in the life of the experiencer. Watch for changes occurring during the experience, or by the time of the initial write-up, and see if they are still present six months later.

The positive changes are divided into 4 main groups: A) toward self, B) toward others, c) toward life, d) toward the experience itself.

A) Increased integration of personality is the basic inward change in the personal **self**. Such integration in the form of a reorganization of the personality and growth in maturity may have developed relatively rapidly or slowly as a result of what occurred during the experience. (For example, from a radical experience of death and rebirth, or conversion, or as an effect of insight which was gained in the depth of the experience and gradually utilized later. Undesirable traits may be faced in a way that they can be dealt with and finally reduced or eliminated. Issuing from personal integration, the sense of one's inner authority may be strengthened, and the vigor and dynamic quality of life may be increased. Creativity and greater achievement-efficiency may be released. There may be an inner optimistic tone with consequent increase in feelings of happiness, joy, and peace.

B) Change in attitude and behavior toward **others** (includes more sensitivity, more tolerance, more real love, and more authenticity as a person by being more open and more one's true self with others. The response of others is a good indication of such changes, if mentioned.

C) Positive change in **life-attitude** or goal may include philosophy of life, sense of values, sense of meaning, purpose in life, vocational commitment, need for service to others, and new appreciation for life or the whole of creation. Life may seem richer. The sense of reverence may be increased, and more time may be spent in devotional life and meditation.

D) Positive attitude toward the **experience** means that it is regarded as valuable and that what has been learned is thought to be useful. The experience is remembered as a high point, and an attempt is made to

recapture the experience or, if possible, to gain new experiences as a source of growth and strength. Mystical experiences of others are more appreciated and understood.

Negative changes are divided into the same four groups and include the negative counterparts of the positive elements mentioned above.

A) Personal disintegration is the basic change toward self and includes fear, anxiety, insecurity, loneliness, depression, despair, mental confusion, delusion, feeling of "unreality," regression in maturity, less dynamic quality and vigor, unhappiness, turmoil, inner pessimism.

B) Negative changes toward others include less effective interpersonal relations, withdrawal into self, friction, antagonism, hatred, less sensitivity, less tolerance, and less authenticity as a person.

C) Negative changes toward life may include a cynical and bitter attitude and less intensity in or loss of the positive items listed above under this sub-category.

D) Negative changes toward the experience include regret for participation and attempts to forget and suppress the experience. which may be regarded as harmful.

Scoring level is based on intensity of benefit or harmfulness. Decide to which sub-category each item of the six-month followup data belongs. Then score each sub-category according to the intensity communicated by the account.

3 This level means that the person feels strong or very strong benefit or harm.

2 This level indicated moderate benefit or harm.

1 This level indicates slight or questionable benefit or harm.

3. With the above categories in mind, read all the accounts through in succession, at one sitting.

4. Working on the accounts one at a time, in order:

a) Read the first account straight through to get the general feel and tone. Feel free to mark in the margin in pencil, with the major category numbers (I to IX) any sentence which impresses you at the time as an obvious example of a particular category. Don't worry at this point about scoring intensity or completeness. Read to get an impression of the account as a whole.

b) Using the score sheet, read the account through and look for examples of category I (transcendence of time and/or space). Mark them with the category number. Then give a qualitative rating (0 to 3) for each scoring division of this category, as indicated on the score sheet. Base your score on the highest level reached at any point in the experience. Thus an element mentioned only once may have been described in such a way as to indicate a 3-level experience. Rate on the basis of the highest level for **any** essential element of a particular scoring division, in accordance with the description of the category. Be sure to rate the experience of the person writing the account, not his description of what other people were experiencing.

c) Then read the same account through again and mark examples of categories II and III (positive mood and sense of sacredness). Score these items on the score sheet in the appropriate place. Follow this same procedure for the rest of the categories. Look for evidence of categories IV and V at one reading. Categories VII and VIII may also be combined in this way.

d) When you have finished the first account, do the same for each of the remaining ones, in order. Try to finish two accounts at least at one sitting.

Content Analysis Score Sheet Used by Judges with the Probability for each Item that the Difference between Experimentals and Controls was due to Chance⁶

Category	p values (for Experimentals)	
I. Transcendence of time or space		
A. Loss of usual sense of time	.001 (1)	
B. Loss of usual sense of space	.001(2)	
II. Positive mood		
A. Joy	.002 (3)	
B. Love	.035 (4)	
C. Peace or blessedness	(.063) (5)	
III. Sense of sacredness	(.37) (6)	
IV. Unity		
A. Internal unity	.002 (7)	
B. External unity		
1. Oneness through external objects other than people	(.25) (8)	
2. Oneness through people	.032 (9)	
V. Transciency of unity	.004 (10)	
VI. Objectivity and reality		
A. Insights into being and existence in general	.004 (11)	
B. Insights into personal finite self	(.11) (12)	
VII. Paradoxicality	.001 (13)	
VIII. Ineffability	.008 (14)	
IX. Persisting changes in attitude or behavior six months later	Positive	Negative
A. Toward self	.004 (15)	(.13) (16)
B. Toward others	(.50) (17)	(1) (18)
C. Toward life	.016 (19)	(1) (20)
D. Toward the experience	(.19) (21)	(.25) (22)

Reliability of Judges as Determined from Kendall Rank Correlation Coefficient⁷

Judge Compared	τ	p less than
A and B	.74	.00006
B and C	.88	.00006
C and A	.78	.00006
All three	.80	.00006

6. The Sign Test was used to calculate p values from judges' scores.

7. Siegel, *op. cit.*, pp. 213-223.

Appendix F

EXPLANATION OF THE COLUMNS AND SYMBOLS USED IN THE CATEGORY TABLES

TABLE 3 Category I: UNITY Combination of All Subcategories									
	Subject group	Frequency Distribution (Number of <i>times</i> scored)				Total score (10 subjects)		Sign Test Statistics	
Items ^(a)	(n=10) ^(b)	Strong	Moder.	Slight	None ^(c)	Actual	Maximum ^(d)	N	p ^(e)

^(a) The items which were combined from either the post-drug, follow-up, or content-analysis data.

^(b) The group of subjects, either 10 experimentals or 10 controls.

^(c) Frequency distribution shows the total **number** of responses made by all experimentals and controls at the particular scoring level indicated. The scoring scales on the three methods of measurement were correlated for easy comparison (i.e., the "strong" level for each rating scale was not the same numerical value. This level represented a score of "three" on the content-analysis scale, "four" on the post-drug questionnaire scale, and both "four" and "five" on the follow-up questionnaire scale. The "slight" level represented a score of "one" on content-analysis scale, and both "one" and "two" on the questionnaire scales).

^(d) The sum of the **weighted** scores at each level. Maximum is the sum which would have been obtained if all the subjects scored all the items at the highest possible level.

^(e) N = number of matched pairs with a difference in score when the score of the control subject was subtracted from the score of the experimental subject. The prediction had been made that the experimental score would be higher. The maximum value of N = 10.

p = the probability that the predicted higher scores of the experimentals were due to chance.

Appendix G

DATA NOT DIRECTLY RELEVANT TO CATEGORIES OF THE TYPOLOGY OF MYSTICISM

Group I: Integrative and Constructive Phenomena		
Phenomena which occurred during experience	values p (for experimentals)	
	Using all scores:	Using only "strong" scores:
(1) Post-drug data:		
P3 Sense of the preciousness of life:	.020	.032
P88a Death experience:	.032	(.13)
P89a Rebirth experience:	.032	(.13)
P86a New significance to life:	(.062)	(.063)
P95a Conversion experience:	(.35)	(.35)
P21 Sense of forgiveness or cleansing:	(.35)	(.35)
P84a Increased integration of personality:	(.37)	(.37)
P10 Easy understanding of feelings of others:	(.5)	(.5)

P2 Feeling of unity with your group:	(.64)	(.64)
P93a Felt need for some type of service to others:	(.5)	(.5)
(2) Follow-up data:		
F21 Rebirth experience:	.016	(.063)
F20 Meaningfulness of your own life:	.055	(.062)
Phenomena which occurred within a few days after the experience (all from post-drug data):		
P86b New significance to life:	.002	.032
P96b Sense of belonging to a new and greater unity:	(.063)	(.063)
P126 Your experience was valuable to you personally:	(.062)	(.062)
P127 Your experience was mystical or religious:	(.062)	(.062)
P88b Death experience:	(.063)	(.25)
P84b Increased integration of personality:	(.090)	(.063)
P92b Felt need for some type of service to others:	(.18)	(.18)
P89b Rebirth experience:	(.19)	(.19)
P93b Actual changes in behavior in ways you would consider constructive and positive:	(.18)	(.18)
P95b Conversion experience:	(.19)	(.19)

Group II: Disturbing Changes in Attitude and Behavior

Phenomena which occurred during experience	p values (for experimentals)	
	Using all scores:	Using only "strong" scores:
(1) Fear and Anxiety:		
P5 Terror or fear:	.004	.008
P15 Fear of losing control:	.004	(.13)
P121 Anxious about having to "come out of it":	.008	.008
P8 Panic:	.016	(.25)
P46 Insecurity:	(.11)	(.063)
P51 Anxiety:	(.26)	(.26)
(2) Melancholia:		
P22 Sense of loneliness or aloneness:	.02	.032
P48 Despair:	.02	.032
P40 Depression:	(.09)	(.25)
P87a Lessening of significance to life:	(.13)	(.25)
(3) Disorientation:		
P98a Confusion of thinking:	.004	(.063)
P99a Feelings of unreality:	.016	(.13)
P101a Loss of memory:	.035	(.13)
P85a Disintegration or destructive effects on personality:	(.062)	(.25)
P97a Sense of subjective delusion:	(.063)	(1)
P17 Feeling that you were going to die during the experience:	(.063)	(1)

P19 General sense of sin:	(.50)	(.50)
P20 Conviction of certain specific sins in your life:	(.50)	(1)
P25 Sense of judgment on your life:	(.78)	(.78)
(4) Antisocial Feelings or Behavior:		
P123 Dislike for either leader:	.032	(1)
P91a Feelings of antagonism and hate toward others:	(.090)	(1)
P45 Meanness:	(.19)	(1)
P120 Explosive anger or fury:	(.13)	(1)
P94a Sense of increased self-centredness:	(.11)	(1)
P125 Dislike for any participant in the experiment:	(.37)	(1)
P42 Hate:	(.35)	(1)
Phenomena which occurred within a few days after the experience (all from post-drug data):		
P101b Loss of memory for part of the experience:	.020	(1)
P98b Confusion of thinking:	.032	(1)
P99b Feelings of unreality:	(.063)	(.13)
P97b Sense of subjective delusion:	(.063)	(1)
P85b Disintegration or destructive effects on personality:	(.13)	(1)
P87b Lessening of significance to life:	(1)	(1)
P91b Feelings of antagonism and hate toward others:	(.25)	(1)
P94b Sense of increased self-centeredness:	(.25)	(1)
Phenomena which occurred within six months after the experience:		
F74a Increased feelings of anxiety:	.032	(1)
F61a Increased feelings of depression:	(.063)	(1)
(See part III of Follow-up Questionnaire in Appendix D for the remaining negative items, none of which proved significant - <i>p</i> greater than .1)		

Group III: Physical Sensations

	<i>p</i> values (for experimentals)	
	Using all scores:	Using only "strong" scores:
P16 Seeing a light which appeared to have no naturally explainable source:	.016	(.13)
P102 Loss of consciousness:	.016	(.25)
P103 Distortion of visual perception:	.055	(.063)
P104 Colors more intense:	.001	.008
P105 Visions of colors, geometric patterns, objects, animals, people, scenes:	.001	.008
P106 Seeing colors around heads or bodies of others:	.032	(1)
P108 Unusual odors or scents:	(.063)	(1)
P114 Sensation of floating:	(.09)	(.13)
P119 Sense of being out of the body:	(.062)	(.13)
P112 Nausea:	.008	(1)
P115 Sense of bodily warmth:	.035 (for controls)	(1)

P116 Itching or burning of skin:	.011 (for controls)	(.25)
----------------------------------	---------------------	-------

(See items P100-P118 on post-drug questionnaire in Appendix C - for items above .1 level.)

Group IV: Miscellaneous

	p values (for experimentals)	
	Using all scores:	Using only "strong" scores:
(1) Post-drug data:		
P128 Got psilocybin:	.001	.007
(2) Follow-up data:		
F80b You place less importance on traditional theological formulations to express spiritual insights:	.035	(.25)
F100a You are convinced you had psilocybin:	.001	.001
F100b ...did not have psilocybin:	.001 (for controls)	.001

Bibliography

1. Abramson, Harold A. (ed.). The Use of LSD in Psychotherapy: Transactions of a Conference on d-Lysergic Acid Diethylamide (LSD-25). New York: Josiah Macy, Jr. Foundation, 1960.
2. Alken, J.W. "Can Drugs Lead You to God?" Fate, XVI, No. 5 (May, 1963), 66-70.
3. Ames, Edward S. The Psychology of Religious Experience. Boston & New York: Houghton Mifflin Co., 1910.
4. Barrow, George A. The Validity of the Religious Experience. Sherman, French, and Co., 1917.
5. Beecher, H.K., "Science, drugs, and students." Harvard Alum. Bull., LXV, No. 8 (Feb. 2, 1963), 338; repr. in Medical Tribune, IV, No. 29 (April 12, 1963), 11.
6. Begbie, Harold. Twice-Born Men: A Clinic in Regeneration. New York: Fleming H. Revell, 1909.
7. Blewett, Duncan B., and Chwelos, Nicolas. Handbook for the Therapeutic Use of Lysergic Acid Diethylamide-25, Individual and Group Procedures. Saskatchewan, 1959 (unpublished; mimeographed).
8. Blewett, Duncan B., "Psychedelic Drugs in Parapsychological Research," Intern. J. Parapsychol., V, No. 1 (Winter, 1963), 43-74.
9. Boison, Anton T. The Exploration of the Inner World: A Study of Mental Disorder and Religious Experience. New York: Harper, 1936. (Harper "Torchbooks," 1962.)
10. Boison, Anton T. Lift Up Your Hearts: A Service Book for Use in Hospitals. Boston: Pilgrim Press, 1926.
11. Boison, Anton T. Out of the Depths: An Autobiographical Study of Mental Disorder and Religious Experience. New York: Harper, 1960.
12. Boison, Anton T. Religion in Crisis and Custom: A Sociological and Psychological Study. New York: Harper, 1955.
13. Brinton, H. H. The Mystic Will: Based on a Study of the Philosophy of Jacob Boehme. New York: Macmillan, 1930.
14. Brown, H. F. J. A. Symonds. A Biography. London, 1895.
15. Buber, Martin. Between Man and Man. London: Routledge & Kegan Paul, 1947.
16. Bucke, R. M. Cosmic Consciousness: A Study in the Evolution of the Human Mind. Philadelphia: Innes & Sons, 1901.
17. Butler, C. Western Mysticism. London: Arrow Books (Grey Arrow Edition), 1960.
18. Chandler, A. L., and Hartman, M. A., "Lysergic Acid Diethyl-amide (LSD-25) as a Facilitating Agent in Psychotherapy," A.M.A. Arch. Gen. Psychiat., II (1960), 286-299.
19. Chwelos, N., Blewett, D. B., Smith, C., and Hoffer, A., "Use of LSD-25 in the Treatment of Chronic Alcoholism," Quart. J. Stud. Alcohol. XX (1959), 577-590.
20. Cholden, Louis (ed.). Lysergic Acid Diethylamide and Mescaline in Experimental Psychiatry. New York & London: Grune and Stratton, 1956.
21. Clark, E. T. The Psychology of Religious Awakening. New York: Macmillan, 1929.
22. Clark, Walter Huston. The Psychology of Religion: An Introduction to Religious Experience and Behavior. New York: Macmillan, 1958.
23. Coe, Georga Albert. The Psychology of Religion. Chicago: University of Chicago Press, 1916.
24. Cohen, Sidney, "Lysergic acid diethylamide: side effects and complications." J. Nery. Ment. Diseases. Vol. CXXX, No. 1 (January, 1960), 30-40.
25. Cohen, Sidney, "Notes on the Hallucinogenic State," Intern. Record of Medicine, 173, No. 6 (June, 1960), 380-387.
26. Cohen, Sidney, "The Therapeutic Potential of LSD-25," in: A Pharmacologic Approach to the Study of the Mind, eds. R. M. Featherstone and A. Simon. Springfield, Ill.: Thomas, 1959.
27. Cohen, Sidney, and Ditman, Keith S., "Complications associated with Lysergic Acid Diethylamide (LSD-25), J. Amer. Med. Assoc. CLXXXI, No. 2 (July 14, 1962), 161-162.
28. Cohen, Sidney, and Ditman, Keith S., "Prolonged Adverse Reactions to Lysergic Acid Diethylamide," A.M.A. Arch. Gen. Psychiat., VIII, (May, 1963), 475-480.
29. Cohen, Sidney, and Eisner, B. G., "Use of Lysergic Acid Diethylamide in a Psychotherapeutic Setting," A.M.A. Arch. Neurol. Psychiat., LXXXI (May, 1959), 615-619.
30. D'Arcy, Martin C. "Drugs, Brainwashing, and this Self," The Current, III, No. 2 (May, 1962), 92-100.
31. Deikman, R.J., "Experimental Meditation," J. Nerv. Mental Disease, 130, No. 4 (April, 1963), 329-343.
32. Delay, Jean, "Psychotropic Drugs in Experimental Psychiatry," in: Recent Advances in Biological Psychiatry. New York: Plenum Press, 1962.
33. DeRopp, Robert S. Drugs and the Mind. New York: St. Martin's Press, 1957. (Also in paperback: Evergreen Books and Black Cat Editions.)
34. DiMascio, A., and Klerman, G. L., "Experimental, Human Psychopharmacology: the Role of Nondrug Factors," in: The Dynamics of Psychiatric Drug Therapy, ed. G. J. Sarwer-Foner. Springfield, Ill.: Thomas, 1960, 56-84.
35. Ditman, Keith S., Hayman, M., and Whittlesey, J. R. B., "Nature and Frequency of Claims Following LSD," J. Nery. Mental Disease, CXXXIV (1962). 346-352.
36. Dunlap, Jane. Exploring Inner Space; Personal Experiences Under Lsd-25. New York: Harcourt, Brace & World, 1961.
37. Dunlap, Jane. "Exploring the Soul with LSD," Fate, XV, No. 6 (June, 1962), 25-36.
38. Ebin, David (ed.). The Drug Experience; First-Person Accounts of Addicts, Writers, Scientists and Others. New York: The Orion Press, 1961.
39. Fabing, Howard D., "On Going Berserk: A Neurochemical Inquiry." Scientific Monthly, LXXXIII, No. 5 (November, 1956), 232-237; repr. in Amer. J. Psychiat., CXIII, No. 5, (November, 1956), 409-415.
40. Farber, Seymour M., and Wilson, Roger H. L. (eds.). Man and Civilization: Control of the Mind. New York: McGraw-Hill, 1961.
41. Featherstone, R. M., and Simon, R. (eds.). A Pharmacologic Approach to the Study of the Mind. Springfield, 111.: Thomas, 1959.
42. Garrett, Eileen, (ed.). Proceedings of the Conference on Parapsychology and Psychopharmacology. New York: Parapsychology Foundation, Inc., 29 W. 57th St., 1961. (Abstracts of papers.)

43. Goldman, R. H. "Amanita Muscaria: Bridge to Fantasy." Unpublished Honors term paper, Harvard College, Library of Economic Botany, Harvard University, 1957.
44. Goodman, L. S., and Gilman, A. The Pharmacological Basis of Therapeutics. New York: Macmillan, 1955.
45. Graves, Robert, "Centaur's Food," in: Food for Centaurs: Stories, Talks, Critical Studies, Poems. New York: Doubleday, 1960, 257-282.
46. Graves, Robert, "A Journey to Paradise," Holiday, XXXII, No. 2, (1962), 36-37, 110-111.
47. Havens, Joseph, "Memo to Quakers on the Consciousness-Changing Drugs." (Unpublished; mimeographed.)
48. Heard, Gerald, "Can This Drug Enlarge Man's Mind?" Horizon, V, No. 5 (May, 1963), 28-31, 114-115; repr. in The Psychedelic Review (P. O. Box 223, Cambridge 38, Mass.), I, No. 1 (June, 1963), 7-17, omitting accompanying commentaries.
49. Heim, Roger, Les Champignons, d'Europe. Paris: Editions N. Boubee & Cie, 1957.
50. Heim, Roger, and Wasson, R. Gordon. Les Champignons Hallucinogenes du Mexique. Paris: Museum National d'Histoire Naturelle, 1958.
51. Hoch, P., Pennes, H., Cattell, J. P., "Psychoses produced by Administration of Drugs," in: M. Rinkel (ed.), Chemical Concepts of Psychosis. New York: McDowell/Obolensky, 1958, 141-151.
52. Hoffer, A., Osmond, H., & Smythies, J., "Schizophrenia: a New Approach," J. Mental Sci., C, No. 418 (January, 1954), 29-45.
53. Hofmann, A., "Chemical, Pharmacological, and Medical Aspects of Psychotomimetic," J. Exper. Med. Sci., V, No. 2, (September, 1961), 31-51.
54. Hofmann, A., "Psychotomimetic Drugs: Chemical and Pharmacologic Aspects," Acta Physiol. Pharmacol. Neerlandica. VIII (1959), 240-258.
55. Hügel, Baron Friedrich von. The Mystical Element in Religion, 2 vols. New York: Dutton, 1909.
56. Huxley, Aldous, The Doors of Perception (and) Heaven and Hell. Penguin Books, 1960.
57. Huxley, Aldous, "Education on the Nonverbal Level," Paedalus, 91, NO. 2 (Spring, 1962), 279-293.
58. Huxley, Aldous, "Human Potentialities," in Man and Civilization: Control of the Mind. eds. 8. M. Farber & R. K. L. Wilson. New York: McGraw-Hill, 1961.
59. Huxley, Aldous, "Visionary Experience," in: Clinical Psychology ed. G. S. Nielsen (Proc. XIV Intern. Congr. Appl. Psychol., Vol. IV). Copenhagen: Munksgaard, 1962, 11-35.
60. Huxley, Julian, "Psychometabolism," J. Neuropsychiat., III, Suppl. No. 1 (August, 1962), S1-S14.
61. Isbell, H., "Comparison of the Reactions induced by Psilocybin and LSD-25 in Man," Psychopharmacologia. I, 1959, 29-38.
62. Isbell, H., *et al.*, "Cross-Tolerance between LSD and Psilocybin," *ibid.*, II, 1961, 147-159.
63. James, William, Varieties of Religious Experience (Mod. Lib. Edition.) New York: Random House, 1902.
64. Janiger, Oscar, "The Use of Hallucinogenic Agents in Psychiatry," California Clinician. LX, Nos. 7, 8 (July-August, 1959), 222-224, 251-259.
65. Jensen, S. E., "A Treatment Program for Alcoholics in a Mental Hospital," Quart. J. Stud. Alcohol. XXIII, No. 2 (June, 1962), 315-320.
66. Jochelson, W., "Religion and Myths of the Koryak," in: Jessup North Pacific Expedition VI. New York: Amer. Mus. Nat'l Hist., V, 1960, 1-382.
67. Johnson, Jean Bassett. Elements of Mazatec Witchcraft. ("Ethnological Studies" No. 9.) Gothenburg, Sweden: Gothenburg Ethnographical Museum, 1939.
68. Johnson, Paul E. Personality and Religion. New York/Nashville: Abingdon Press, 1957.
69. Johnson, Paul E. Psychology of Religion. New York/Nashville: Abingdon Press, 1959.
70. Johnson, Raynor C. The Imprisoned Splendour: An Approach to Reality based upon the Significance of Data drawn from the Fields of Natural Science, Psychical Research and Mystical Experience. New York: Harper, 1953.
71. Jones, Rufus, The Inner Life. New York: Macmillan, 1916.
72. Jones, Rufus, New Studies in Mystical Religion. New York: Macmillan, 1927.
73. Jones, Rufus, The Radiant Life. New York: Macmillan, 1944.
74. Jones, Rufus, Some Exponents of Mystical Religion. New York/Cincinnati/Chicago: Abingdon Press, 1930.
75. Jordan, G. Ray, Jr., "LSD and Mystical Experiences," J. Bible and Religion. XXXI, No. 2 (April, 1963), 114-123.
76. Jordan, G. Ray, Jr., "Reflections on LSD, Zen Meditation and Satori," Psychologia (Kyoto, Japan), V, No. 3 (September, 1962), 124-130.
77. Klee, Gerald D., "Lysergic Acid Diethylamide (LSD-25) and Ego Functions," A.M.A. Arch. Gen. Psychiat., X, (May, 1963), 461-473.
78. Knudson, Albert C. The Validity of Religious Experience. New York: Abingdon Press, 1937.
79. Koestler, Arthur, The Invisible Writing. New York: Macmillan, 1954 (quoted in Stace, below).
80. La Barre, Weston, The Peyote Cult. ("Yale University Publications in Anthropology" No. 19.) New Haven: Yale University Press, 1938. Repr. 1962, New Haven: Shoe String Press.
81. La Barre, Weston, "Twenty Years of Peyote Studies," Curr. Anthropol. Vol. I (1960), 45-60.
82. Laski, Marghanita. Ecstasy: A Study of Some Secular and Religious Experiences. London: Cresset Press, 1961.
83. Leary, Timothy, "The Effects of Testscore Feedback on Creative Performance and of Drugs on Creative Experience." Department of Social Relations: Harvard University, 1962. (Dittoed.)
84. Leary, Timothy, "How to Change Behavior," in: Clinical Psychology. ed. G. S. Nielsen. (Proc. XIV Intern. Congr. Appl. Psychol., Vol. IV.) Copenhagen: Munksgaard, 1962, 50-68.
85. Leary, Timothy, and Clark, Walter H., "Religious Implications of Consciousness Expanding Drugs," Relig. Educ, LVIII, No. 3 (1963), 252-256.
86. Leary, Timothy, Metzner, R., and Litwin, G., "Americans and Mushrooms in a Naturalistic Environment: A Preliminary Report." Department of Social Relations: Harvard University, 1962. (Dittoed.)
87. Leary, Timothy, Metzner, R., and Litwin, G., "Reactions to Psilocybin in a Supportive Environment." J. Nerv. & Mental Disease, 1963. (In press.)
88. Leary, Timothy, Metzner, R., Presnell, W. M., Schwitzgebel, R., Kinne, S., and Weil, G., "A New Behavior-Change Program

- using Psilocybin." Department of Social Relations: Harvard University, 1962. (Dittoed.)
89. Leuba, James H. God or Man: A Study of the Value of God to Man. New York: Henry Holt & Co., 1933.
 90. Leuba, James H. A Psychological Study of Religion: Its Origin, Function, and Future. New York: Macmillan, 1912.
 91. Leuba, James H. The Psychology of Religious Mysticism. New York: Harcourt, Brace, 1925.
 92. Lewin, Louis. Phantastica: Narcotic and Stimulating Drugs, their Use and Abuse. London: Kegan Paul, Trench, Trubner; N.Y.: E. P. Dutton, 1931. (Trans. from the German edition of 1924.)
 93. Linton, H. B., and Lings, R. J., "Subjective Reactions to Lysergic Acid Diethylamide (LSD-25) - measured by a Questionnaire." Arch. Gen. Psychiat., VI, (May, 1962), 36-52.
 94. MacLean, F. R., *et al.*, "The Use of LSD-25 in the Treatment of Alcoholism and Other Psychiatric Problems." Quart. J. Stud. Alcohol, XXII (1961), 34-45.
 95. Marquette, Jacques de, Introduction to Comparative Mysticism. New York: Philosophical Library, 1949.
 96. Maslow, Abraham H. Toward a Psychology of Being. Princeton. N.J.: D. Van Nostrand Co., Inc., 1962.
 97. McGlothlin, W. H. Long-lasting Effects of LSD on Certain Attitudes in Normals: An Experimental Proposal. Santa Monica, California: Rand Corporation, 1962. (Privately published.)
 98. Metzner, R., Litwin, G., and Weil, G., "The Relation of Expectation and Setting to Experience with Psilocybin: A Questionnaire Study." Department of Social Relations: Harvard University, 1962. (Dittoed; in press.)
 99. Miller, James G., and Uhr, Leonard. Drugs and Behavior. New York/London: John Wiley, 1960.
 100. Mystery and Mysticism (A Symposium). London: Blackfriars. Publications, 1956.
 101. Newland, Constance. My Self and I. Foreword by H. Greenwald. New York: Coward-McCann, 1962.
 102. Nicholson, R. A. Studies in Islamic Mysticism. London (n.d.).
 103. Osmond, Humphry, "Peyote Night." Tomorrow Magazine, IX, No. 2 (1961), 105-125.
 104. Osmond, Humphry, "A Review of the Clinical Effects of Psychotomimetic Agents." Ann. N. Y. Acad. Sci., LXVI (1957), 418-434.
 105. Otto, Rudolf, The Idea of the Holy: An Inquiry into the Non-Rational Factor in the Idea of the Divine and Its Relation to the Rational. (Galaxy Book). New York: Oxford University Press, 1958.
 106. Otto, Rudolf, Mysticism East and West: A Comparative Analysis of the Nature of Mysticism. New York: Meridian Books, 1957.
 107. Ouspensky, P. D. A New Model of the Universe. London: Routledge, Kegan Paul, 1937.
 108. Plotinus, Works. Transl. Stephen Mackenna. (Enneads VI, IX, XI.) New York: Medici Society, n.d.
 109. Pratt, James B. Eternal Values in Religion. New York: Macmillan, 1950.
 110. Pratt, James B. The Religious Consciousness: a Psychological Study. New York: Macmillan, 1921.
 111. Puharich, Andrija, The Sacred Mushroom, Key to the Door of Eternity. Garden City, N. Y.: Doubleday & Co., 1959.
 112. Puharich, Andrija, Beyond Telepathy. New York: Doubleday & Co., 1962.
 113. Ramsbottom, John, Mushrooms and Toadstools. London: Collins, 1953.
 114. Rinkel, Max (ed.). Chemical Concepts of Psychosis. New York: McDowell/Oblensky, 1958.
 115. Rinkel, Max., Atwell, C. R., DiMascio, A., and Brown, Jonathan, "Psilocybine, a new Psychotropic Drug," New Engl. J. Med., CCLXII (Feb. 11, 1960), 295-297.
 116. Rinkel, Max (ed.). Specific and Non-Specific Factors in Psychopharmacology. New York: Philosophical Library, 1963.
 117. Sahagún, Bernardino. Historia General de las Cosas de Nueva España, ed. Carlos Maria de Bustamante (Mexico, 1829-30), cited in R. E. Schultes, "Peyote - An American Indian Heritage from Mexico," El Mexico Antiguo, IV, No. 5/6 (April, 1938), 200-209.
 118. Sanctus, Sante De. Religious Conversion. Transl. H. Augur. New York: Harcourt, Brace, 1927.
 119. Sandoz Pharmaceuticals. Annotated Bibliography on LSD 25 (d-lysergic acid diethylamide). Five Parts. Hanover, N.J.: Medical Department, Sandoz Pharmaceuticals: 1957-1961. (Mimeographed.)
 120. Sandoz Pharmaceuticals. Annotated Bibliography on Psilocybin. Hanover, N.J.: Medical Department, Sandoz Pharmaceuticals; 1960. (Mimeographed.)
 121. Sandoz Pharmaceuticals. Catalogue of the Literature on Delysid (D-lysergic acid diethylamide or LSD-25). Hanover, N. J.: Medical Department, Sandoz Pharmaceuticals; September, 1962. (Miroeographed.)
 122. Saudreau, Auguste, The Mystical State: Its Nature and Phases. New York/Cincinnati/Chicago: Benziger Bros., 1924.
 123. Schultes, Richard Evans, A Contribution to our Knowledge of Rivea Corymbosa, the Narcotic Ololiuqui of the Aztecs. Cambridge: Botanical Museum of Harvard University, 1941.
 124. Schultes, Richard Evans, "Peyote - An American Indian Heritage from Mexico," El Mexico Antiguo. IV, No. 5/6 (April, 1938), 200-209.
 125. Schultes, Richard Evans, "Pharmacognosy." The Pharmaceutical Sciences (3rd Lecture Series.) Austin, Texas: University of Texas College of Pharmacy, 1960, 142-185.
 126. Schultes, Richard Evans, "Plantae Mexicanae II: The Identification of Teonanacatl, a Narcotic Basidiomycete of the Aztecs." Botanical Museum Leaflets, Harvard University, VII, No. 3 (1939), 37-54.
 127. Sherwood, J. N., Stolaroff, M. J., and Harman, W. W., "The Psychedelic Experience - A New Concept in Psychotherapy." J. Neuropsychiatry. XV, No. 2 (Nov.-Dec, 1962), 69-80.
 128. Siegel, S., Nonparametric Statistics for the Behavioral Sciences. New York: McGraw-Hill, 1956.
 129. Slotkin, J. S., "Menomini Peyotism," in: The Drug Experience, ed. David Ebin. New York: Orion Press, 1961, pp. 237-269.
 130. Slotkin, J. S., The Peyote Religion. Glencoe, Ill.: The Free Press, 1956.
 131. Slotkin, J. S., "The Peyote Way." Tomorrow Magazine. IV, No. 3 (1956), pp. 65-70.
 132. Smith, C. M., "Some Reflections on the Possible Therapeutic Effects of the Hallucinogens." Quart. J. Stud. Alcohol. XIX (1959), 292-301.
 133. Stace, Walter T. Mysticism and Philosophy. Philadelphia and New York: J. B. Lippincott, 1960.
 134. Starbuck, Edwin Diller. The Psychology of Religion: An Empirical Study of the Growth of Religious Consciousness. London: Walter Scott, 1899.
 135. Stewart, Omer C. Washo-Northern Paiute Peyotism. ("University of California Publications in American Archaeology and Ethnology," XL, No. 3.) Los Angeles: University of California Press, 1944, 63-142.

136. Suzuki, D. T. Mysticism: Christian and Buddhist. New York: Harper, 1957.
137. Suzuki, D. T. Zen Buddhism: Selected Writings of D. T. Suzuki, ed. William Barrett. Garden City, N.Y.: Doubleday, 1956.
138. Swain, Frederick, "The Mystical Mushroom." Tomorrow Magazine, X, No. 4 (Autumn, 1962), 27-34.
139. Terrill, J., Savage, C, and Jackson, D. D., "LSD, Transcendence, and the New Beginning." (Panel on the nature of the LSD experience.) J. Nerv. and Mental Disease, CXXXV, No. 5 (November, 1962), 425-439.
140. Thouless, Robert H. An Introduction to the Psychology of Religion. Cambridge: Cambridge University Press, 1956.
141. Tillich, Paul, Systematic Theology. I. Chicago: University of Chicago Press, 1951.
142. Underhill, E. Essentials of Mysticism. (Everyman Paperback Edition.) New York: E. P. Dutton, 1960.
143. Underhill, E. Mysticism: A Study in the Nature and Development of Man's Spiritual Consciousness. New York: Meridian, 1955.
144. Unger, Sanford M., "Mescaline, LSD, Psilocybin, and Personality Change: A Review," Psychiatry. XXVI, No. 2 (May, 1963), 111-126.
145. Van Dusen, Wilson, "LSD and the Enlightenment of Zen," Psychologia (Kyoto, Japan), IV, No. 1 (March, 1961), 11-16.
146. Vetter, George B. Magic and Religion: Their Psychological Nature, Origin, and Function. New York: Philosophical Library, 1958.
147. Wach, Joachim, Comparative Study of Religions. New York: Columbia University Press, 1961.
148. Wach, Joachim, Types of Religious Experience: Christian and Non-Christian. Chicago: University of Chicago Press, 1951.
149. Walker, Kenneth. The Conscious Mind: A Commentary on the Mystics. London: Rider & Co., 1962.
150. Walter, W. Grey, The Neurophysiological Aspects of Hallucinations and Illusory Experience. XIVth F. W. H. Meyers Memorial Lecture. London: Society for Psychical Research, 1960.
151. Wasson, R. Gordon, "The Hallucinogenic Fungi of Mexico: An Inquiry into the Origins of the Religious Idea among Primitive Peoples," Botanical Museum Leaflets, Harvard University, XIX, No. 7 (1961), 137-162. (Repr., omitting botanical appendix, in The Psychedelic Review, I, No. 1 (June, 1963), 27-42.
152. Wasson, R. Gordon, "Notes on the Present Status of Ololiuqui and the Other Hallucinogenics of Mexico," Botanical Museum Leaflets, Harvard University. (In press.)
153. Wasson, R. Gordon, and Wasson, V. P. Mushrooms, Russia and History. New York: Pantheon Books, 2 Vols., 1957.
154. Watts, Alan W. The Joyous Cosmology: Adventures in the Chemistry of Consciousness. New York: Pantheon Books, 1962.
155. Watts, Alan W. "The New Alchemy," in: This is It, and Other Essays on Zen and Spiritual Experience. New York: Pantheon Books, 1960, 127-153.
156. Wieman, H. N., and Wieman, R. W. Normative Psychology of Religion. New York: T. Y. Crowell, 1935.
157. Zaehner, R. C, "Menace of Mescaline," Blackfriars. CXXXV (July-August, 1954), 310-321.
158. Zaehner, R. C, Mysticism, Sacred and Profane. An Inquiry into some Varieties of Praeternatural Experience. New York: Oxford University Press, 1957.