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

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[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.

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

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[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 Antiguo, Vol. IV, No. 5/6 (April, 1938), p. 200.

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 worshipped 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

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[6]Schultes, ibid., pp. 201-203.

[7]Weston La Barre, op. cit., pp. 29-56.

[8]J. S. Slotkin, The Peyote Religion (Glencoe, Ill.: The Free Press, 1956), pp. 34, 28.

[9]Ibid., pp. 58, 68-77.

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. 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.

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[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.

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.

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[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.

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 to 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

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[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.)

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.

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

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[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 Anthropologicas 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.

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

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[20]Schultes, "Plantae Mexicanae II: The Identification of Teonanacatl, a Narcotic Basidiomycete of the Aztecs," <u>Botanical Museum Leaflets, Harvard University</u>, Vol. VII, No. 3 (1939), pp. 37-54.

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

[22]Wasson and Wasson, <u>op</u>. <u>cit</u>., Vol II, pp. 274-279.

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

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[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.

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

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[26]W. Jochelson, "Religion and Myths of the Koryak," in Jessup 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 in Wasson and Wasson, op. cit., Vol. I, pp. 190-192, 194.

[27]Hofmann, op. cit., p. 34.

[28]Schultes, Pharmaceutical Sciences, pp. 158-159.

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, Tetrapterys methystica.[30] This drink is used in religious manner, for prophecy, divination, the tribal initiation of male adolescents, and sacred feasts.[31] 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

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[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.

[32] Schultes, Pharmaceutical Sciences, p. 179.

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 in 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

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[33]Hofmann, 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).

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

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

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

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[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.

the experiences of some of their subjects.[41] 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]

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[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.

[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.

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

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[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.

mystical experiences 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

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[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.

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] 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] Laski[56] and Walker[57] discuss the issue, but tend to be more interested in, and favorable toward, "natural" experiences than "artificial." Zaehner, referred to in footnote 45,

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[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.

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

[56]Margharita 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.

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]

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

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