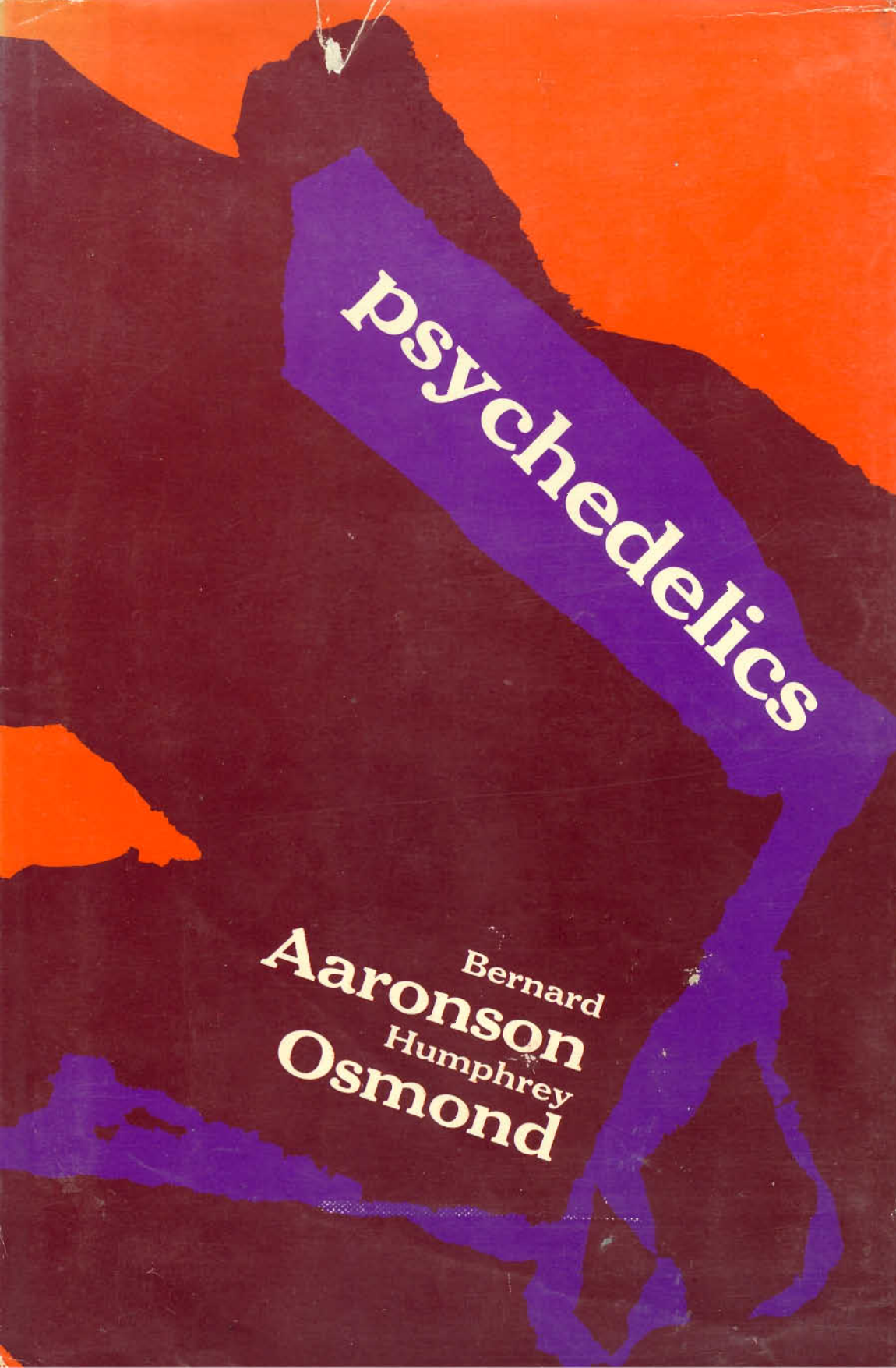
psychedelics
Bernard
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Psychedelics

The Uses and Implications of Hallucinogenic Drugs

EDITED BY

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SCHENKMAN PUBLISHING COMPANY
CAMBRIDGE, MASSACHUSETTS, U.S.A.
LONDON, ENGLAND
1971

suggest that in Smith's series the malvarian alcoholics are more apt to be found in the group who showed an excellent response, that is in about 20 per cent of the population.

Summary

I have described briefly the Saskatchewan origin of psychedelic therapy. This is a form of psychotherapy wherein particular changes in thought are facilitated by hallucinogenic drugs. Both are essential components. In general, hallucinogenic drugs alone or psychotherapy alone have been ineffectual in helping alcoholics. Many workers have condemned psychedelic therapy when in fact they have merely used drugs and none of the other components of the program.

Every therapy has contraindications. Psychedelic therapy is no exception. They are schizophrenia and malvaria, and high HOD scores. They are contraindications because individuals with these characteristics are unlikely to be helped and because they are more likely to have prolonged undesirable reactions.

When alcoholics have schizophrenia, malvaria, or high HOD scores (uncomplicated by acute intoxication), they will respond well to mega vitamin B_3 therapy.

A CONCEPT OF DEATH

ERIC C. KAST

Any meaningful concept of death can only originate in an intact, living, and functioning central nervous system. This system cannot transgress the limits of its power of conceptualization, and one of these is that it cannot imagine its own termination. Therefore, ideas about death must by necessity be developed in the living state by extrapolation and anticipation of an unknown, frightening, helpless, and ominous state: a state that we all dread and that fills us with terror. Such extrapolations, when they occur in certain contexts, are usually considered mental aberrations, or even mental disease.

If obsessive and compulsive fears about future events overwhelm a patient, we consider him mentally ill. We are continually confronted with uncertainties about the future, and a certain degree of concern about it is considered "normal." But if the concern is excessive or if it handicaps functioning, we consider it worthy of treatment. Because death sometimes casts a strong shadow over most of our lives and at times interferes with the adequate functioning of the human organism, I shall treat this issue, the conceptualization of death, as a mental illness, and divide my discussion into etiology, pathology, physiology, and treatment.

Etiology

As far as we know and as far as we can extrapolate, animals do not have any concepts of death. They exhibit behavior of fear, and when in pain suffer for the moment, but there is no evidence that they experience the disease of conceptualizing death.

Interest in, concern with, and preoccupation about death are apparently strictly human affairs. The specter of its own termination fills the central nervous system with terror and forces it to fill the vacuum created by the possibility of its own ceasing with various delusions and fantasies, not unlike those seen in toxic psychoses and in schizophrenia. These delusions about "death" also inhibit our ability to make commitments and decisions. The ideas of guilt and sin, and the image of retribution, inhibit our ability to deal with life in an appropriate and effective way. These ideas and images have been exploited more or less intentionally in political struggles, and organized religion has exploited them to maintain its hold over the masses. They have also given rise to beautiful and meaningful productions of art and poetry, as has most mental illness.

Like other psychic aberrations, death produces specific defenses. One of these defenses against the ceasing of the central nervous system itself is the construction of a *concept* of death. The word "death" does not really refer to this self-ceasing, but has a future-oriented connotation. It refers to "what happens afterward." This conceptualization can be

viewed as a defense against flooding of the central nervous system with a severe alarm reaction, causing great cortical and subcortical excitation. The defense is a structuring of the anticipated self-ceasing.

Anatomy of Death: What Does Death Look Like?

We are walking along a street, and a man walks ahead of us. Suddenly we note that he staggers, and we are filled with ominous dread. Then the terrible catastrophe occurs, awakening a long-forgotten fear: the man falls, limp, like a bag, without stretching out arms to brace the fall. The following moment of silence extends over all, encompassing the heavens. The world stands still in utter horror. Then the tears begin to flow, the wailing starts, and life begins again, in grief. Restitution of the moment of horror has begun.

What is so terrible about the image we all fear to view? First, the man lying down is horizontal, a position we assume only in sleep. His face is blue, the tongue protrudes, and his eyes look glassy, seem to soften before us. His feet stick up in the air; one can see the soles of his shoes and his socks under his pants legs.

All of these signals create the greatest alarm in the viewer. The erect position and the control it implies are carefully cherished and protected. "Up" is associated with light and hope in our minds, "down" with darkness, pain, and punishment. The appearance of helplessness and loss of control we view as a demonstration of our vulnerability, as a reminder that our paths, which seem glorious, may suddenly be cut short. These threatening signals evoke in us intensive anticipatory activity.

Physiology

Anticipation is based on verbal (second signal) (Platonow, 1959) ability to conceptualize and to enact future events in theory. Various ways of dealing with future contingencies are thus tested out with the aim of arriving at the most survival-oriented one.

The next moment is always unknown to us. Signals we have

received in the past and processed in the central nervous system permit us to postulate about the next moment and what it will bring. This obvious fact serves as a vital tool for human survival. It permits us to judge the likelihood of future events and prepare for them accordingly. Struggles and perils of great magnitude have been survived by humans on the basis of the ability to read signals in the present, process and store the information, and anticipate future events. This anticipation evokes different affects, depending on the likelihood of survival and the possibility of avoiding tension. In painful states anticipation deals with the solution of the conflict between narcissistic restoration (re-establishment of ego boundaries by exclusion of the pain-producing part), and castration fears (fear of the loss of the body part containing pain) (Kast, 1966b).

The usual method of solving this conflict is a regressive movement toward primary-process thinking, toward narcissistic restoration and diminishing emphasis on the reality principle. Such regression diminishes dread of loss of a body part. When one is confronted, however, with such formidable and catastrophic possibilities as loss of the whole body, such methods of solution appear inadequate. Restorative attempts are made to avoid the specter of loss of a functioning body, which signifies loss of control. Grief and ritual surrounding the aftermath of dying are examples of such restorative attempts.

However, the invention of the concept of "death" itself must be regarded as one of the most important restorative attempts. When a central nervous system, living and attached to an executive tool, a body, observes a non-functioning central nervous system, it receives highly alarming signals. The horizontality and helplessness observed must be structured, somehow, as the living central nervous system anticipates this ominous and unknown future for itself.

The concept of "death" is such a restorative structuring, the form of which depends on the cultural, social, religious, and personal background of the individual.

The isolation implied in the apparent sensory deprivation of a helplessly horizontal man is especially frightening. The anticipation of that period of isolation demands relief.

Treatment of Death

This relief from the dread of isolation and helplessness can come from a number of sources. Successful anticipation, producing affective peace in the face of most disturbing signals, can be achieved by enlarging the idea of self to include more or less stable continuing structures. These structures may encompass identifications with more-stable, enduring persons, like aggressors, even those responsible for the current dilemma (overseers in concentration camps, for example). A social movement may represent a continuing structure through which the idea of the self may be enlarged, as seen in social revolutionary action (Guevara, 1965). In combat, sometimes even in hopeless combat, victory becomes more important than survival. This happens if the results of combat are viewed not as a solution for the individual's problems, justifying the risk of death, but as a solution for the group or society as a whole. The member of the group becomes a small element of the struggle, and the struggling group becomes a surviving entity.

Elaborate systems have been designed to assure the image of continuing existence. These extension-of-life systems, however, obviate the continuation of the clearly impotent executive tool, the body. They, for the most part, substitute a greater, more potent body. God is viewed as a king in charge of the self after "death," guiding, lauding, or punishing, as the case may be, but in some way substituting for the former gratifying functions of the body, as well as for those dealing with moral and superego control of these functions.

A different way of dealing with this distressing and, at times, paralyzing and terrorizing image of horizontality and impotence is to attenuate all anticipations, including this one. Existentialist views, with their attention to the moment, the here and now, supply a means of drawing attention from the dismal specter of the future to the relatively more pleasant present. However, this emphasis on the moment, and relative neglect of the future, precludes the use of a very important survival tool of the human race—anticipation.

Another way of dealing with the inappropriate anticipation

is through the use of psychedelic drugs. In addition to other factors, to be discussed below, favorably influencing feelings about impending death, it has been shown that LSD does limit the impact of anticipation on human activity. The importance of the moment and the immediate sensory input accompanying it outweigh considerations of the future, no matter how dismal they may be. In order to explore the value of LSD in the treatment of "death," the following study was undertaken.

In dealing therapeutically with a topic of such finality and depth as death, it is difficult to follow the usual format of a scientific presentation. Of necessity one must treat the material from a more holistic and philosophic standpoint. The investigations in this report were designed to make the last months of patients with a terminal illness more meaningful and less distressful.

Before attempting to increase the meaning of the last days of a patient's life, one must first ask basic, fundamental questions:

1. Is any interference at this time justified?
2. If so, what direction should such interference take?
3. How much will it interfere with the religious and philosophic attitudes of the patient?

While observing patients during the final months of life, one can see certain defense mechanisms developing in an attempt either to structure death and subsequent "existence" or to deny all possibility of death and assume an eerie positivism that seems surrealistic in character (Field, 1956). The usual clinical approach to death is by a combination of both, and it seems to take an extraordinary toll of a person's ability to relate to his environment and communicate with his family. He becomes isolated and is deprived, to a large extent, of his ability to experience realistically and deeply these last months or weeks of greatest importance in his life. Therefore, interference seems justified if it enables the patient to see and feel with greater intensity. Of course, such medicinal interference must not tamper with the patient's religious ideas and must have the latitude to permit any philosophic interpretation. This study attempts to explore LSD as a means

of increasing the perceptive powers of a dying patient. Lysergic acid diethylamide (LSD) has been reported to enhance the depth of feelings without structuring the individual's interpretation of these increased feelings (Hyde, 1960). Increased communication lessens suffering and isolation, and there is always the possibility that increased perception may enable the patient to penetrate, to some extent, the mysteries of cessation of existence.

To explore the means of making the last months of a patient less distressful is the second purpose of this study. It is difficult for a healthy person to appreciate in its full extent the anguish of the dying. This is rather surprising if one contemplates the tenuousness of healthy existence and the ubiquity of death. It is commonly stated that the terminal patient has "pain." This is a semantic convenience. Pain has been defined as a cortical (psychic) elaboration of the flexion reflex (Kast, 1966a). In this view, pain is a response to a central-nervous-system, probably frontal-lobe, processing of a noxious sensory input. Acute pain is felt by an otherwise intact human as the need to flex away, to remove the rest of the body from the pain-producing part.

The observer sees distress in the dying patient and looks for a related experience in his own life. He thinks of a sensory input from which he, at one time or another, wanted to escape, to flex away; and he imagines that this is what the distressed person wants. The observer tries to relate the agony of the gravely ill patient to some pain-producing sensory experience of his own. This is only an approximation, however. The preterminal patient suffers "pain," to be sure, like metastatic bone pain, but he is also depressed, nauseated, uncomfortable, distended, wet, and afraid. He feels the need for flexion; and he must escape from his whole situation, as discussed above, rather than one part of his body. He wishes for what death can provide; but of course, he is afraid of dying and losing control. In a previous study (Kast, 1964b) we have shown that LSD is capable of reconciling the patient with a mutilated body image and thus reducing the need for flexion. The reconciliation was accompanied by such relief and joy that it was decided to enlarge the scope of the investigation.

Further impetus to such an investigation was given by the observation that LSD produces changes in the body image (Liebert, Werner, and Wapner, 1958) and facilitates disregard of unpleasant sensory input in favor of a feeling of beneficent oneness and "universal unity" (Huxley, 1956).

Method

Eighty patients suffering from terminal malignant disease with an estimated life expectancy of weeks or months were selected. Only patients who had been informed of their diagnosis were included. An interview was conducted in which the patient's condition and prognosis were discussed, and he was invited to participate in this investigation. It was emphasized that there was no curative value in LSD.

No psychological tests, personality profiles, or projective tests were used; they are impractical in debilitated patients and in patients under the influence of LSD. The following parameters were observed:

1. The patient's mood was evaluated by global estimate and classed in one of five categories:

   a. deeply depressed
   b. depressed but distractable
   c. appropriate affect
   d. euphoric
   e. hypomanic.

Serial numbers were assigned to the categories with "deeply depressed" designated as one and "hypomanic" as five.

2. The patient's approach to life and death was appraised by interview and classified as approximating one of the following statements:

   a. "I want to die; life has nothing to offer me" (negative attitude toward life).
   b. "I like to live, but it does not mean anything and it does not matter" (indifferent).
   c. "Life is great; the concept of death does not frighten me" (positive attitude toward life).

3. Care was taken to isolate pain from other distress, and pain was graded by the patient as:

a. none
b. mild
c. severe
d. intolerable.

Serial numbers were again assigned with "none" designated as zero and "intolerable" as three.

4. Sleepiness was observed and classed as:

a. sleepiness
b. no difficulty
c. slight sleeping difficulty
d. insomnia.

A numerical average was established per time unit, "sleepiness" counting one and "insomnia" counting four.

5. Metaphysical notions of the patients were recorded and classed as:

a. carefully structured, paranoid, or hallucinatory
b. vague "oceanic" feelings of mystical unity.

No placebo control was used because of the obvious and immediate differentiation of LSD from placebo by the patient as well as the observer. After the interview we gave 100 μg of LSD hypodermically to insure uniformity of absorption. A trained observer was at the patient's bedside until the termination of the experiment. Upon the appearance of fear, panic, or the desire to rest, the patient was given 100 mg of chlorpromazine intramuscularly, which induced sleep within thirty minutes. The patients were interviewed daily for the subsequent three weeks. In addition to the above observations, the following questions were asked after the experience had worn off (three weeks after administration):

a. Would you like to repeat the experience?
b. Was it a pleasant experience?

c. Did you learn or gain insight from the experience?
d. Did it interfere with or offend religious ideas?

Results and Discussions

As expected, the over-all improvement rate of gravely ill patients after 100 μg of LSD administration was considerable during the first eight or ten hours. About half of the patients became upset around six hours after administration, and the experience was terminated with chlorpromazine at that time. Only ten patients were able to tolerate the experience for more than ten hours without having some frightening image that necessitated termination. However, contrary to our previous experience, only 10 per cent, or eight patients, did not wish to repeat the administration, compared to 33 per cent in our previous study, in which the experience was not terminated and the patients were permitted to experience the whole gamut of feelings, even when the frightening images made their appearance. The relatively high percentage of patients whose experience was terminated can be accounted for by the fact that these were debilitated patients who tired easily.

Thus it seems that an avoidance of the tiring and, at times, the frightening images, can add to the patient's willingness to repeat the experience.

Seventy-two patients gained a special type of insight from this experience (Table I). This "insight" was a greater lucidity and tridimensionality with which they viewed events in and around themselves. Through this insight, communication

	WILLING TO REPEAT EXPERIENCE	FOUND IT PLEASANT	GAINED INSIGHT THROUGH EXPERIENCE	EXPERIENCE DID NOT INTERFERE WITH RELIGIOUS FEELING	EXPERIENCE "WENT TOO FAR"
YES	68	58	72	7	12
NO	8	11	4	71	62
UNDECIDED	4	11	4	2	6

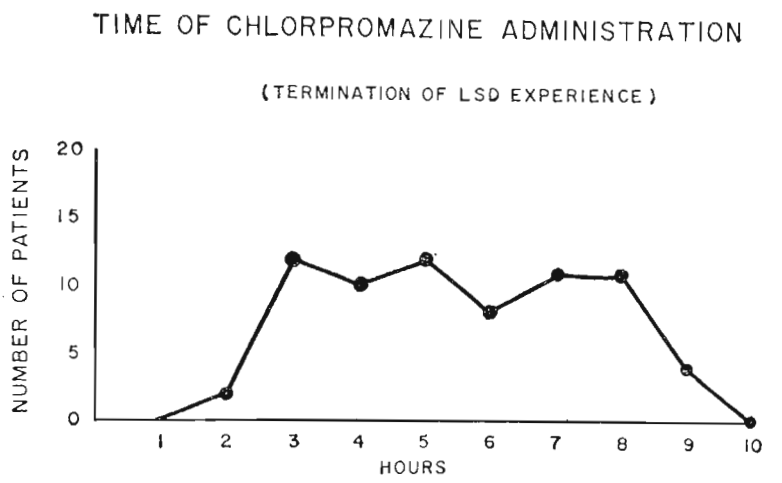
PATIENTS' REACTION TO THE EXPERIENCE 3 WEEKS AFTER THE ADMINSTRATION OF LSD

TABLE 1

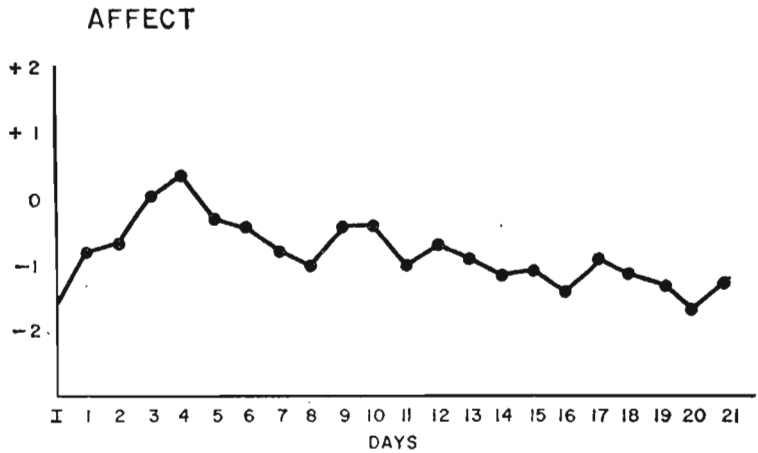
was greatly facilitated, both between observer and patient and among the patients themselves. It also created a sense of cohesion and community among the patients, excluding those who did not "know" the experience. This greatly enhanced the morale and self-respect of the patients involved.

Only seven patients felt that the experience in some way interfered with the privacy of their religious and philosophical ideas. These were the patients who experienced strong hallucinatory or frightening images, and whose experience had to be terminated early. It is interesting to note that the unstructured question "Did it go too far?" was universally understood. The twelve patients responding positively were among those with frightening images, whose experience had to be terminated early.

While the depression returned to a certain extent, a definite lifting of the mood was noted for approximately two weeks (Graphs 1 and 2). The explicit pain was reduced considerably (Graph 3). Of course, one must take into account the fact that at the end of ten hours only a small percentage of the patients were awake. However, for the ensuing ten days a definite pain reduction was also noted.

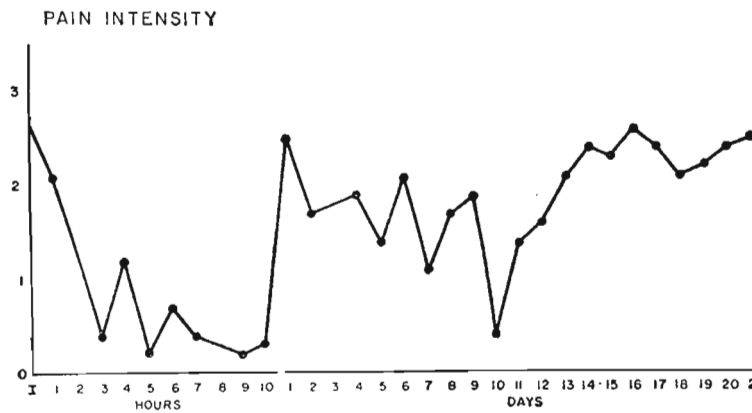


GRAPH 1



AVERAGE NUMERICAL EVALUATION OF MOOD;
PLUS 2-HYPOMANIC REACTION
PLUS 1-EUPHORIA
ZERO-APPROPRIATE AFFECT
MINUS 1-SLIGHT DEPRESSION, DISTRACTABLE
MINUS 2-DEEP DEPRESSION

GRAPH 2

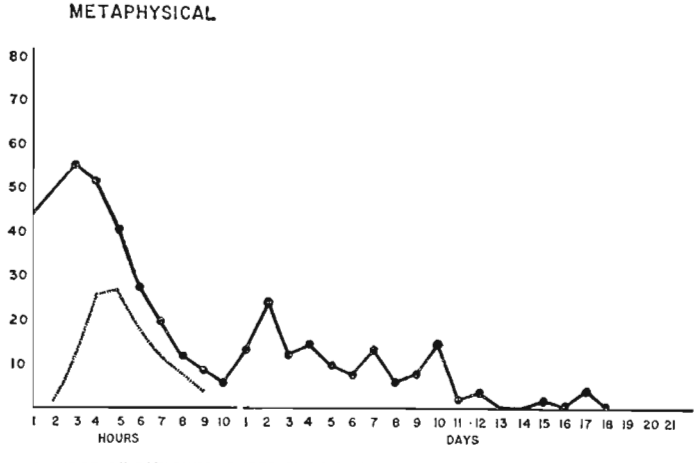


AVERAGE PAIN INTENSITY OVER TIME
0 NONE
1 MILD
2 SEVERE
3 INTOLERABLE

GRAPH 3

The happy, oceanic feeling so often experienced by normal subjects was also evident among preterminal patients. It could be noted up to twelve days following the administration of LSD (Graph 4). A certain change in philosophic and religious approach to dying took place that is not reflected in the numerical data presented here (Graph 5). Real terror experienced upon the contemplation of death in preterminal patients, as well as in normals, consists of fear of the loss of control of internal functions and environmental influences. It is self-evident that control can be achieved only to a very limited degree, but this small degree of control has enormous survival value. In conjunction with this actually very limited ability to influence internal and external events, goes a fantasy-feeling of power to shape one's fate and an adult elaboration of the infantile feeling of omnipotence and omnipresence. The realization of imminent death obviously deals a heavy blow to that fantasy.

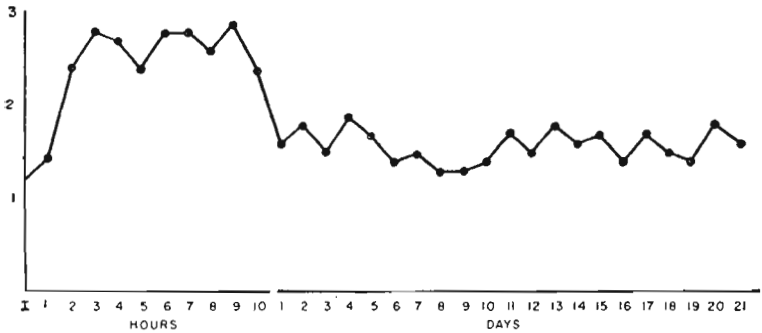
During and after LSD administration, acceptance and surrender to the inevitable loss of control were noted; and this control is anxiously maintained and fought for in non-drugged patients. LSD administration apparently eases the blow that



NUMBER OF PATIENTS EXPERIENCING METAPHYSICAL REACTIONS:
SOLID LINE-OCEANIC FEELING (see text)
BROKEN LINE-HALLUCINATORY, PARANOID REACTION

GRAPH 4

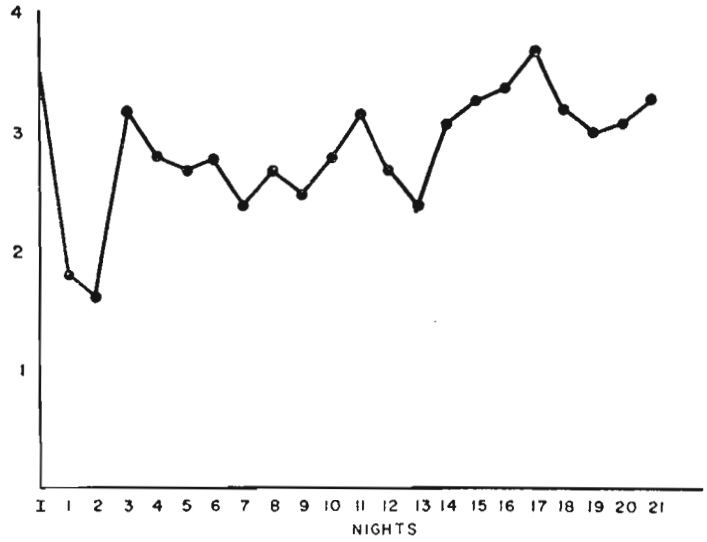
ATTITUDES TOWARD DEATH



AVERAGE NUMERICAL EVALUATION OF ATTITUDES TOWARD LIFE AND DEATH
1. I WANT TO DIE, LIFE HAS NOTHING TO OFFER TO ME.
2. I LIKE TO LIVE, BUT IT DOES NOT MEAN ANYTHING TO ME.
3. LIFE IS GREAT, THE CONCEPT OF DEATH DOES NOT FRIGHTEN ME.

GRAPH 5

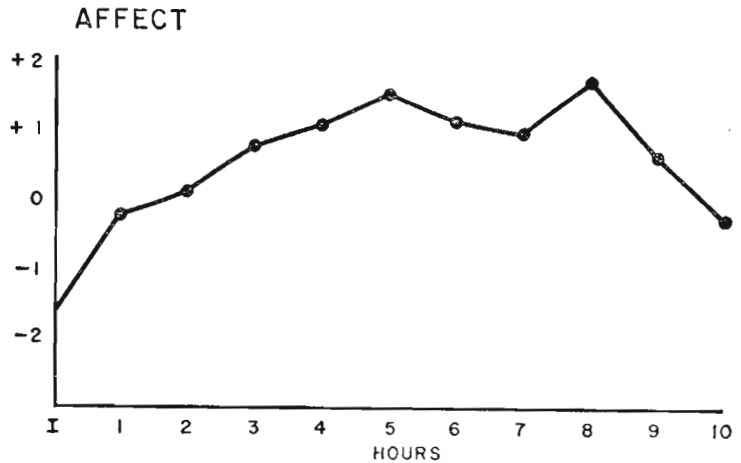
SLEEP PATTERNS



ORDINATE REPRESENTS NUMERICAL AVERAGES INDICATING:
1. SLEEPINESS
2. NO SLEEPING DIFFICULTY
3. SLIGHT SLEEPING DIFFICULTY
4. INSOMNIA

GRAPH 6

impending death deals to the fantasy of infant omnipotence, not necessarily by augmenting the infantile process, but by relieving the mental apparatus of the compelling need to maintain the infantile fantasy. Parallel to the general improvement in the patient's feelings, mood, and conflict situation, sleep patterns improved for approximately twelve to fourteen days (Graphs 6 and 7).



AVERAGE NUMERICAL HOURLY MOOD EVALUATION FOR THE FIRST TEN HOURS:
PLUS 2-HYPOMANIC REACTION
PLUS 1-EUPHORIA
ZERO-APPROPRIATE AFFECT
MINUS 1-SLIGHT DEPRESSION, DISTRACTABLE
MINUS 2-DEEP DEPRESSION

GRAPH 7

The results of this study seem to indicate that LSD is not only capable of improving the lot of preterminal patients by making them more responsive to their environment and family, but it also enhances their ability to appreciate the subtle and aesthetic nuances of experience. This increased delicate sensitivity is as marked as that usually encountered in normal volunteers subjected to LSD. Here, however, this imagery not only gives aesthetic satisfaction, but creates a new will to live and a zest for experience that, against a background of dismal

darkness and preoccupying fear, produces an exciting and promising outlook. Patients who had been listless and depressed were touched to tears by the discovery of a depth of feeling of which they had not thought themselves capable. Although short-lived and transient, this happy state of affairs was a welcome change in their monotonous and isolated lives, and recollection of this experience days later often created similar elation. Of course, these subtleties cannot be appraised in numerical terms. In human terms, however, the short but profound impact of LSD on the dying patient was impressive.

In summary, the drug effect consisted of a lessening of the patients' physical distress and a lifting of their mood and outlook that lasted about ten days.

LSD AND ARCHITECTURAL DESIGN

KIYO IZUMI

LSD was used to help me, as an architect, while designing facilities for the care and treatment of the mentally ill. The object was to understand some of the experiences and problems of the mentally ill, so these problems could be considered in the building design. My personal notes following each LSD experience, recorded discussions, and subsequent reexamination of the events are the source material for this paper. In one sense, the following discussion may be premature, as I have subsequently had no LSD experience in the surroundings that were designed, in order to test the design solutions.

The circumstances and events that led to my series of LSD experiences started in 1954. At this time, Dr. Griffith McKerracher asked me to prepare architectural studies putting into effect the recommendations of a report by Dr. Paul Haun of Pennsylvania on the existing Saskatchewan Hospital at Weyburn, Saskatchewan.[1] The problem was what to do with

[1] Kahan, F. H. (1965), a history of the Yorkton Psychiatric Center and the related social, political, administrative, economic, and psychiatric situations in Saskatchewan.