"Psychedelic" Experiences in Acute Psychoses

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The disease which thus evokes these new and wonderful talents and operations of the mind may be compared to an earthquake which, by convulsing the upper strata of our globe, throws upon its surface precious and splendid fossils, the existence of which was unknown to the proprietors of the soil in which they were buried.[1]

THIS PAPER is concerned with subjective experience in the early phases of some psychotic reactions and has been prepared with two problems in mind. First, in the experimental production of altered states of awareness in man, the most common source of information is the self-report; yet when data obtained in this way are compared to clinical conditions it becomes clear that we have very little comparable information from patients. As a result, when studies in experimental psychopathology are related to clinical states, comparisons may be confusing and can give rise to spurious controversy as to whether or not a particular experimental state actually resembles a certain clinical syndrome. Thus precise information about subjective experience in clinical conditions might help to clarify some of these issues. Secondly, altered experiences of self and external world have not been easily accounted for in psychodynamic theories of psychosis. Arlow and Brenner have recently emphasized that some of the observations on which dynamic theories of psychosis have been based require more careful scrutiny,[2] and the observations recorded in this report are a part of such an ongoing attempt.

There are some noteworthy observations in the literature focused on subjective experience in early psychosis. Jaspers, Mayer-Gross, Binswanger, Straus, and Minkowski have written about self-experience interpreted from the viewpoint of existentialist theories or phenomenology.[3,4] McGhie and Chapman have characterized some of the perceptual alterations in early schizophrenia.[5] Their clinical findings have led to several experimental approaches to perceptual and cognitive processes in schizophrenia.[6] Norman Cameron has written in detail about the subjective world of the incipient paranoid psychotic.[7] Arieti has described schizophrenic panic, and his description is similar to many of the cases we will cite.[8]

We have obtained information from two sources. First in clinical work with psychotic patients over a two year period, an attempt was made to elicit information about their earliest recognition of "changes." This was done either at the time they were acutely disturbed (eg, "What are you feeling now?") or in retrospect. Whenever possible, a patient was encouraged to write a brief statement describing his earliest subjective experiences when he fell ill. In several instances it turned out that patients had written down their feelings during the early stages of their psychosis, and we asked permission to read these accounts.[9] As our second source, we reviewed most of the available self-reports by psychotic patients in a rather restrictive way.[10,11] That is, we in essence asked of each document the question, "Is there included in this account any clear description of the writer's earliest and/or most consistently experienced alteration in subjectivity?" In a number of instances—some classic, some relatively unfamiliar—we found material pertinent to this question.

Report of Cases

CASE 1.—A 38-year-old music teacher, pressed by debts and family problems and concerned with a very real national crisis, began to feel that life was

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taking on an emotional intensity which was new. He noted a cross on a familiar church for the first time and felt that it had profound, exciting meaning for him. He felt close to nature, emphatically understanding human and subhuman life. A few nights later he described a sensation that "God actually touched my heart. The next day was horror and ecstasy. I began to feel that I might be the agent of some spiritual reawakening.[11] The emotional intensity of the experience became overpowering. Gradually, anxiety and persecutory delusions outstripped the ecstatic elements and the patient made a serious suicide attempt. Even much later in psychotherapy he recalled "the experience" as one of profound meaning for him, one which he would always cherish.

CASE 2.—A 21-year-old college student, concerned about his parents and about a love affair, became guilt-ridden after a sexual experience with his girlfriend. Soon thereafter, he felt that his life was completely changed. He felt a sense of mission in the world which he now saw "as a completely wonderful place" and stated, "I began to experience goodness and love for the first time." Life for him took on an intense benevolent quality which he had never felt before. He talked with friends fervently about the "new life" and about the way he could now care for and understand people. The feelings progressed to frank delusions that he was a religious messiah and heralded an acute catatonic psychosis.

CASE 3.—Another 21-year-old college student had been ruminating for some time about "personality problems" and difficulties in the choice of a vocation. The following is essentially a verbatim account of the week prior to his admission.

"Before last week, I was quite closed about my emotions; then finally I owned up to them with another person. I began to speak without thinking beforehand and what came out showed an awareness of human beings and God. I could feel deeply about other people. We felt connected. The side which had been suppressing emotions did not seem to be the real one. I was in a higher and higher state of exhilaration and awareness. Things people said had hidden meaning. They said things that applied to life. Everything that was real seemed to make sense. I had a great awareness of life, truth, and God. I went to church and suddenly all parts of the service made sense. My senses were sharpened. I became fascinated by the little insignificant things around me. There was an additional awareness of the world that would do artists, architects, and painters good. I ended up being too emotional, but I felt very much at home with myself, very much at ease. It gave me a great feeling of power. It was not a case of seeing more broadly but deeper. I was losing touch with the outside world and lost my sense of time. There was a fog around me in some sense, and I felt half asleep. I could see more deeply into problems than other people had and would go directly into a deeper subject with a person. I had the feeling I loved everybody in the world. Sharing emotions was like wiping the shadow away, wiping a false face. I thought I might wake up from a nightmare; ideas were pulsating through me. I became concerned that I might get violent so I called the doctor."

On admission, this patient was severely agitated; delusional and self-referential thoughts were prominent.

CASE 4.—A 31-year-old housewife wrote a description of the week prior to her hospitalization for an acute paranoid psychosis.

"Thoughts spun around in my head and everything—objects, sound, events—took on special meaning for me. I felt like I was putting the pieces of a puzzle together. Childhood feelings began to come back, as symbols and bits from past conversations went through my head. The word *religious* and other words from other past conversations during the fall and summer months came back to me during this week and seemed to take on a new significance. I increasingly began to feel that I was experiencing something like mystical revelations . . . at the gas station, the men smiled at me with twinkles in their eyes, and I felt very good, I saw smiling men's faces in the sky and the stars twinkling in their eyes. I felt better than I ever had in my life."

CASE 5.—A 21-year-old student, progressively agitated by homosexual concerns and fears of nuclear disaster, walked all night long with a friend. He described his experience as a "revelation." Sights and sounds possessed a keenness that he had never experienced before. He felt an unusual sense of empathy with this friend and spoke of spontaneous understanding "like that of a little child." Stars in the sky seemed to have special significance, and at one point he felt that his friend resembled Christ. This state proceeded rapidly to an acute catatonic reaction.

CASE 6.—A 35-year-old housewife sought psychiatric assistance because of her uneasiness over an impending move to another city. In the course of the evaluation she began to wonder about the "meaning of my whole life." She reported sensations of "being a spectator while the procession of life goes by." Over a two-day period her anxiety mounted as she attempted to deal with her guilt about a long-standing affair of which her husband had no knowledge. Rather abruptly she noted "my senses were sharpened, sounds were more intense and I could see with greater clarity, everything seemed very clear to me. Even my sense of taste seemed more acute. Things began to fall together and make sense. Words I would repeat had particular significance for my life." She began to feel that God was asking her to give her life to tell other people about religion. These subjective changes were associated with intense fright and acute insomnia.

CASE 7.—A 20-year-old artist subsequently followed for seven years in psychotherapy has frequently referred to his states of altered awareness. Such subjective feelings occurred during each of two acute psychotic episodes and throughout psychotherapy. He describes a mystic or "cryptic state"

from which the solutions to various problems seem obvious. Colors become impressive to him, they lose their boundaries, and seem to flow. In these states, his sense of communion and community is enhanced; he feels capable of bringing together the arts and sciences, his separated parents, and himself into harmonious "oscillation" with the world. Going without sleep heightens the mystic states and improves his "freedom and vision" in painting. In this state he cannot tell whether he is "thrilled, frightened, pained, or anxious—they are all the same."

Amphetamine and Alcohol Withdrawal States.—We have seen several patients in these categories whose symptomatology suggested similarities to the previous cases. The phenomenon of "amphetamine psychosis" is well known, and our experience suggests that the full-blown syndrome often develops out of a state of hyperawareness.[12] One patient, having taken small doses of amphetamine for only three days in the postpartum period, began to have the subjective feeling that God was trying to help her. Colors and normally trivial observations began to take on ominous significance. Things that would not usually be noticed seemed to be "connected." Another patient, chronically sleepless and taking high doses of amphetamines over several months phoned and reported he was feeling better, "released," and productive; the world looked beautiful and bright, he could see "how to repair my marriage" and had new ideas for his work. The next day he reported at length that it was fascinating to note "reflections" from polished cars and the following day announced that huge parabolic mirrors were placed on top of a newspaper building and as a hoax were reflecting images of naked women off windows and onto bodies. He thus moved from an absorption in the reflections and in his subjective state of "seeing solutions" to problems, to a full-fledged paranoid psychosis. Another patient who experienced delirium tremens on several occasions noted that prior to the full-blown state he would often become hyperaware of sounds and would find himself suddenly distracted by insignificant items such as a leaf or a bird in a tree. He added that the difference in such a state and delirium tremens was that in the latter he could not "come back."

CASE 8.—The final case presented a unique opportunity in that one of us treated for four months a young man who had taken lysergic acid diethylamide (LSD-25) two years prior to his psychotic episode. He frequently compared the two experiences and found a number of similarities. In the following account, the first part was written down after a few weeks of treatment when he was considerably calmer and was reflecting upon the prior LSD-25 experience. The last part is taken from his admission interview.

"In the half hour for the drug to take effect, the drugged person has a psychsomatic terror of madness. He seeks to retain some small part of his former existence unchanged . . . he desires to repeat things for the assurance such repetition gives of a return to normality. The tendency to repeat is compulsive and persistent. There is yet another resistance and that is verbosity. The drugged person, like the insane, feels that weeding out what was previously wrong—an attempt to perfect an earlier feeling—is necessary. There is a paranoid fear of certain places . . . the feeling is that such places are in some way taboo. There are manic feelings under the drug. There are moments when the feeling of omniscience if not omnipotence becomes dominant. The feeling of omnipotence under LSD-25 corresponds directly in intensity to the drugged person's sense of guilt as the drug wears off. The guilt felt afterward can be terribly profound to the point that the depressed person (drugged and/or insane) will do almost anything to bring himself out of the depression. The drugged person, like the insane, is quite vulnerable to suggestion. The experience also involves feelings such as the conviction that one can go through walls. Colors seem to hold great and uncanny significance. All of them are providential and mean something . . . now (on the day hospitalized for psychosis) everything takes on significance and patterns. You feel lost and you try to repeat. I feel surges of warmth and great terror of myself. Walls start to move at the periphery of my vision. I feel my tactile senses are enhanced as well as my visual ones, to a point of great power. Patterns and designs begin to distinguish themselves and take on significance. This is true for the LSD-25 experience also. It's the same now as it was with the drug, only then I knew I was coming back. Now there is nothing to hold onto."

Literary Accounts *

John Custance[13].—First and foremost comes a general sense of intense well-being . . . the pleasureable and sometimes ecstatic feeling tone remains as a sort of permanent background . . . closely allied with this permanent background is . . . the "heightened sense of reality." If I am to judge by my own experience, this "heightened sense of reality" consists of a considerable number of related sensations, the net result of which is that the outer world makes a much more vivid and intense impression on me than usual. . . . The first thing I note is the peculiar appearances of the lights. . . . They are not exactly brighter, but deeper, more intense, perhaps a trifle more ruddy than usual. Certainly my sense of touch is heightened. . . . My hearing appears to be more sensitive, and I am able to take in without disturbance or distraction many different sound impressions at the same time. . . . It is actually a sense of communion, in the first place with God, and in the second place with all mankind, indeed with all creation. . . . The sense of communication extends to all fellow creatures with whom I come in contact; it is not merely ideal or imaginative but has a practical effect on my conduct.

Anonymous Account[14].—I experienced a sudden

* A number of these accounts has been compiled and edited by Kaplan, B. in *The Inner World of Mental Illness*, Harper and Row, Publishers, Inc., 1964.

feeling of creative release before my illness, was convinced that I was rapidly attaining the height of my intellectual powers, and that for the first time in my life, I would be able to function up to the level of my ability in this direction. . . . On several occasions my eyes became markedly oversensitive to light. Ordinary colors appeared to be much too bright, and sunlight seemed dazzling in intensity. . . . I also had a sense of discovery, creative excitement, and intense, at times mystical inspiration in intervals where there was relief from fear. . . . My capacities for aesthetic appreciation and heightened sensory receptiveness, for vivid grasp of the qualities of living, and for imaginative empathy were very keen at this time. I had had the same intensity of experience at other times when I was perfectly normal, but such periods were not sustained for as long, and had also been integrated with feelings of well-being and happiness that were absent during the tense disturbed period.

Schreber [15].—Dr. Weber, who was in charge of the asylum where Schreber was hospitalized wrote the following in his court testimony:

At the beginning of his stay there he (Schreber) mentioned mostly hypochondriacal ideas . . . but ideas of persecution soon appeared in the disease picture, based on hallucinations, which at first appeared sporadically while simultaneously marked hyperesthesia, great sensitivity to light and noise made their appearance. Later the visual and auditory hallucinations multiplied and, in conjunction with disturbances of common sensation, ruled his whole feeling and thinking. . . . Gradually, the delusions took on a mystical and religious character . . . he saw "miracles," heard "holy music" . . . I have in no way assumed a priori the pathological nature of these ideas, but rather tried to show from the history of the patient's illness how the appellant first suffered from severe hyperesthesia, hypersensitivity to light and noise . . . and particular disturbances of common sensation which falsified his conception of things . . . and how from these pathological events, at last the system of ideas was formed which the appellant has recounted . . . in his memoirs.

Clifford Beers [16].—No man can be born again, but I believe I came as near it as ever a man did. . . . It seemed as though the refreshing breath of some kind goddess of wisdom were being gently blown against the surface of my brain. . . . So delicate, so crisp and exhilarating was it that words fail me in my attempt to describe it. Few, if any, experiences can be more delightful. . . . For me, however, this experience was liberation, not enslavement.

Norma McDonald [17].—What I do want to explain, if I can, is the exaggerated state of awareness in which I lived before, during, and after my acute illness. At first it was as if parts of my brain "awoke" which had been dormant, and I became interested in a wide assortment of people, events, places, and ideas which normally would make no impression on me. Not knowing that I was ill, I made no attempt to understand what was happening, but felt that there was some overwhelming significance in all this, produced either by God or Satan, and I felt that I was duty-bound to ponder on each of these new interests, and the more I pondered, the worse it became. The walk of a stranger on the street could be a "sign" to me which I must interpret. Every face in the windows of a passing streetcar would be engraved on my mind, all of them concentrating on me and trying to pass me some sort of message. Now, many years later, I can appreciate what had happened. Each of us is capable of coping with a large number of stimuli invading or being through any one of the senses . . . it is obvious that we would be incapable of carrying on any of our daily activities if even one hundredth of all these available stimuli invaded us at once. So the mind must have a filter which functions without our conscious thought, sorting stimuli and allowing only those which are relevant to the situation in hand to disturb consciousness. And this filter must be working at maximum efficiency at all times, particularly when we require a high degree of concentration. What had happened to me in Toronto was a breakdown in the filter . . . new significance in people and places was not particularly unpleasant, though it got badly in the way of my work, but the significance of the real or imagined feelings of people was very painful. . . . In this state, delusions can very easily take root and begin to grow. . . . By the time I was admitted to hospital I had reached a stage of "wakefulness" when the brilliance of light on a window sill or the color of blue in the sky would be so important it could make me cry. I had very little ability to sort the relevant from the irrelevant. The filter had broken down. Completely unrelated events became intricately connected in my mind.

Comment

Characterization and Comparison.—It will be clear that we have been struck by certain repetitive aspects in these accounts and have abstracted from them to clarify our argument. In brief it seems that these patients are describing a state, early in their illness, in which they recognize an altered way of experiencing themselves, others, and the world. They report having stepped beyond the restrictions of their usual state of awareness. Perceptual modes seem heightened and the emotional response evoked is singularly intense. Such experiences are frequently felt to be a kind of breakthrough, words and phrases such as *release* or *new creativity* being used to characterize them. Individuals experience feelings of getting to the essence of things—of the external world, of others,

and of themselves. On the other hand, there is usually a vague disquieting, progressive sense of dread which may eventually dominate the entire experience. In some accounts the experience of perceptual alteration seems to be dominant; others emphasize the intense affectivity, and still others the inner experience of revelation or creative clarification. In most of the accounts—but not in all—the experience comes as a kind of surprise and is apprehended as happening *to the subject* and not *within him.* Others, however, seem to recognize the process as basically an inner change which in turn "makes all things new," (case 3, anonymous account, Beers, McDonald).

Given such an altered *experience,* formal processes of thought and cognition are likely to be altered. Wynn, for example, has suggested that schizophrenia be broadly understood as an "experience disorder," and that formal thought processes are studied as an indicator of altered experience.[18]

When seen from the point of view of subjective experience, early psychotic experiencing becomes less discontinuous with other altered modes of experiencing. For instance LSD-25 and mescaline may induce a very comparable perceptual and effective condition. It is clearly a multipotential state with many factors influencing the final outcome which can range from excruciating anxiety and paranoid delusions to an experience of intense self-knowledge. Space does not permit detailed excerpts from the drug literature but Terrill's summary of "The Nature of the LSD Experience" can serve as a comprehensive statement of the phenomenon.[19] Such characteristics as increased perceptual sensitivity and portentousness, intensification of interpersonal experience, feelings of unique insight into life, and personal clarification—all well-documented in the LSD reaction—are clearly shared by the accounts we have listed. More recent reviews have made it clear that the drugs induce a kind of fluid state in which a number of variables act to fashion the final result along the psychedelic-psychotomimetic continuum. Freedman has characterized this state from the viewpoint of the clinician.[20]

> Psychotomimetic drugs such as d-lysergic acid diethylamide . . . reliably and consistently produce periods of altered perception and experience without clouded consciousness or marked physiological changes; mental processes that are usually dormant and transient during wakefulness become "locked" into a persistent state. The usual boundaries which structure thought and perception become fluid; awareness becomes vivid while control over input is markedly diminished; customary inputs and modes of thought and perception become novel, illusory, and portentous; and with the loss of customary controlling anchors, dependence on the surroundings, on prior expectations, or on a mystique for structure and support is enhanced. Psychiatrists recognize these primary changes as a background state out of which a number of secondary psychological states can ensue, depending on motive, capacity, and circumstance. This is reflected in the terminology that has grown around these drugs; if symptoms ensue, the term psychotomimetic or psychodysleptic is used; and if mystical experience, religious conversion, or a therapeutic change in behavior is stressed, the term *psychedelic* or mind "manifesting" has been applied.
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> The drugs and clinical states set up a "search for synthesis," and the motives and capacities of subjects and patients to achieve this are obviously of importance if one is to assess outcomes and compare and contrast these states.

There are other intense self-experiences—unrelated to the use of drugs—which have elements in common with the accounts we have presented. William James' classic study of religious phenomena, for instance, is replete with accounts of conversion experiences that are strikingly similar to the cases we have described and to the experiences of some subjects under LSD-25 and mescaline.[21] James describes the characteristics of the affective experience in religious conversion as follows.

> The central one is the loss of all worry, the sense that all is ultimately well with one, the peace, the harmony, the willingness to be, even though the outer conditions should remain the same. . . . The second feature is the sense of perceiving truths not known before. The mysteries of life become lucid . . . and often the solution is more or less unutterable in words. . . . A third peculiarity of the assurance state is the objective change which the world often appears to undergo. . . . The most characteristic of all the elements of the conversion crisis . . . is the ecstasy of happiness produced.

James himself seems to have been well aware of the similarity between the conversion experience and certain psychotic reactions.

> But more remains to be told, for religious mysticism is only one half of mysticism. The other half

has no accumulated traditions except those which the textbooks on insanity supply. Open any one of these, and you will find abundant cases in which "mystical ideas" are cited as characteristic symptoms of enfeebled or deluded states of mind. In delusional insanity . . . we may have a *diabolical* mysticism, a sort of religious mysticism turned upside down. The same sense of ineffable importance in the smallest events, the same texts and words coming with new meanings, the same voices and visions and leadings and missions, the same controlling by extraneous powers; only this time the emotion is pessimistic: instead of consolations we have desolations; the meanings are dreadful; and the powers are enemies to life. It is evident that from the point of view of their psychological mechanism, the classic mysticism and these lower mysticisms spring from the same mental level, from that great subliminal or transmarginal region of which science is beginning to admit the existence, but of which so little is really known. That region contains every kind of matter: "seraph and snake" abide there side by side. To come from thence is no infallible credential. What comes must be sifted and tested, and run the gauntlet of confrontation with the total context of experience, just like what comes from the outer world of sense.

The significance of religious feeling in psychosis has been earlier explored by Boisen [22] and more recently by Laing.[23] Maslow has described the subjective phenomenology of "peak experiences" and emphasizes new modes of awareness which may be encountered at certain maturational milestones.[24] Similarly, in the course of psychotherapy crisis points and periods of intense insight may also be characterized by exhilaration, expressed new modes of experiencing and perceiving, transient fear mixed with intense happiness, and a sense of acceleration of intrapsychic activity.[2,25] Mystical experiences occurring as a culmination of intense intrapsychic conflict have recently been presented.[26]

The utility of such insight, the extent to which it is delusional or adaptive, varies not only in psychotherapy but in psychoses, drug states, and religious and mystical states.

Deikman has recently studied mystical practices experimentally and has advanced hypotheses to account for the intrapsychic phenomena in such procedures.[27,28] Further, a number of creative individuals—including Blake, Coleridge, Brahms, and Rilke, to mention only a few—described comparable unique shifts in their subjective experience of perceptual processes which they held to be an integral part of their creative gift.[29-32] Moreover the relationship between genius and insanity has been a provocative question, debated for centuries.[33,34]

Implications

With the advent of psychotomimetic drugs there was renewed interest in the study of altered mental states, but the opportunity to catch "in situ" the formation and genesis of a variety of symptoms and modes of behaving and coping has not been extensively exploited. In part it was doubted that drug-induced experiences were sufficiently related to clinically-encountered dysfunctions to be of interest.[35] Yet it is hardly surprising that temporary and experimentally-induced states do not reproduce all the features characterizing clinical processes; the latter are neither bound as rigorously by time nor circumscribed by the highly socialized safeguards of the conventional laboratory situation. Rather, these differences only highlight those features of clinical disorders which require explanation in terms of developmental factors and restitutive and compensatory sequences. The patient experiencing and functioning in this altered state must cope overtime with a variety of life tasks, family and social interactions; his resilience and overall disposition to represent, identify, and differentiate "inside and outside" and to relate in a reality oriented way, will differentiate him from most experimental subjects.

Similarly, the fact that these drugs produce ecstatic states from which new learning, a shift in values, or subsequent behavior change purportedly ensue, was thought to isolate such states from their "psychotomimetic status" and perhaps to elevate them to a higher level of discourse. Some enthusiasts even appear to argue that this novelty is beyond psychological description and investigation. Yet the variety of contexts in which such mystic states occur includes clinical conditions as our data have reemphasized. It is also evident that this range of similar states differs not only in outcome but in the extent to which a variety of ego functions are operative—functions such as memory, self-reflective capacity, tolerance for ambiguity, selective attention, the ability to

implement wishes and needs in reality, the ability to synthesize, to order, and to serially locate, and to integrate ongoing experiences with past and future. These differentiating features tend to be lost if all such states are described only in terms of loosened ego boundaries, regression in the service of the ego, altered ego autonomy, and deautomatization.[28,36-39] Such descriptions should properly apply only to certain aspects and attributes of certain of the ego operations altered during these conditions. During various phases of the clinical course of a psychosis one frequently can see fluid states in which elements of perceptual instability and psychedelic experience occur preceded or followed by more settled postures in which the patient, through either recognition, insight, withdrawal, or delusion and symptom formation tends to experience and cope in quite different ways. Similarly, in drug-induced psychedelic states, as the acute and vivid effects subside we and others[40] can observe a variety of paranoid and defensive measures, mild ideas of reference, mood change, and inappropriate or highly imaginative interpretations of the ongoing or previous experience. From a descriptive and theoretical standpoint, then, the clinical and drug-induced psychedelic experience reflects a multipotential mental state which cannot easily be encapsulated or understood without careful scrutiny and study of the sequences of states and differentiation of primary and secondary reactions. It seems apparent that the reaction of the therapist or other significant persons in the environment could crucially affect the course and resolution of such states.

Descriptively, these states of heightened awareness but diminished control over input are frequently characterized by delusional mastery (either shared or idiosyncratic) or (as with dreams) by hallucinatory mastery of the ongoing experience with concomitant euphoria. One is reminded of Freud's "model psychosis." "A dream, then, is a psychosis," he remarked, beginning a chapter in the *Outline of Psychoanalysis*.[41] The absurdities, lapses, hallucinatory mastery, and mental processes of psychoses are evident in dreams, Freud argued. Some of the differences between dream and psychosis cited by him were the short duration of the dream, its useful or adaptive function, and the fact that it is to some degree under the control of the dreamer. In the case of drug-induced states the onset and duration of changes (and to a great extent the intensity of effects) are dependent on dosage. On the other hand, as Freud noted, "the dream is brought about with the subject's consent and is ended by an act of his will." However, this might be translated into the language of ego psychology; the dream as an episode in a sequence of states is implied as is a normal, overall capacity to integrate this episode into the total fabric of living. Such autonomy or integrative control probably is present in widely varying degrees in the states we have reviewed, and in drug states the role both of altered body chemistry and the milieu is clearly great; all these features require differential assessment.

These states frequently appear almost to compel rationalization or interpretation as on occasion do dreams or any number of traumatic, infantile, or hypnoid states[42] in which the ongoing intense experiences have yet to "run the gauntlet of confrontation" with total experience. That this is not easy and that delusional outcomes, conversion, or startling change in behavioral patterns can occur is apparent. These outcomes occur with varying degrees of dependence upon persons, groups, or authority. This fact indicates that drug-induced gaps in reality-coping confer a grave responsibility for the bridging of such gaps which should fall heavily upon the therapists using psychotomimetic drugs. One would expect, therefore, to have encountered considerable literature on the need for case supervision and on the characteristic countertransference problems evoked by such treatment, but with a few exceptions[43] this is relatively absent in the psychedelic-treatment literature.

The bearing of the phenomenological accounts such as those presented upon the various psychodynamic theories of psychosis, while complex, deserves at least brief comment. For instance, it is hard to conceive of all of these states as caused and preceded by a simple withdrawal of libidinal invest-

ment in the object world. Rather the outside world may be experienced in a highly intensified, albeit personalized manner. This kind of experience is highly narcissistic (in that it is referred to the self), but descriptively certain aspects of relatedness to objects remain and even attain a heightened personal significance; further, such relatedness assumes a heightened importance in regulating ego functions. In the drug experience, subjects characteristically depend on the therapist or "guide" not simply as an object but for elemental ego support—to diminish anxiety and to structure the experience or to sanction participation in it. Patients in acute psychotic states have similar narcissistic needs. From scrutiny of clinical and drug-induced states one might propose that there is a rearrangement of a number of ego functions (of which changes in the control of attention and perception are quite striking); these may lead subsequently *or* concomitantly to a narcissistically enhanced significance of the self and the world. Pious, for example, postulates a sudden ego breach—a "nadir experience," following which characteristic psychotic symptoms ensue.[44] Obviously the question of conceptualizing and observing the sequence of initiating events (libidinal withdrawal or ego disruption or both) requires further differentiation and scrutiny.

The experimental production of experiences of heightened awareness can help both to differentiate and reveal the relatedness of many complex phenomena encountered in clinical psychiatry, with their intricate layering of social, motivational, compensatory, and regressive features. The wide range of contexts in which states of heightened awareness are found to occur and the variety of initiating causes indicate that this mode of functioning and experiencing reflects an innate capacity (like the dream) of which the human mind in a most general sense is capable. These states and the conditions which produce them create a number of unsolved research problems for experimental psychiatry. It is, for example, noteworthy that of the drugs which induce this particular kind of heightened awareness, the indole alkyl amines and certain derivatives of catecholamines are effective, whereas distinctly different pictures are found following other centrally active compounds related to the pharmacology of acetylcholine.[45,46] There are other unresolved research problems. Aside from reconciling the continuity between psychotomimetic and psychedelic experience, a major task is to stipulate the determinants of the various outcomes of both drug-induced and naturally-occurring conditions.

Summary

We have presented accounts of subjective experience in some early psychotic reactions from both our clinical work and the literature and have compared these accounts to certain natural and drug-induced experiences which have a certain experiential characteristic in common—that of heightened consciousness or awareness. *Psychedelic and psychotomimetic phenomena are closely related.* Our hypothesis is that these states demonstrate to varying degrees the subjective phenomena of intrapsychic alteration, that they are fluid states whose outcome is determined by both intrapsychic and environmental factors. There are clearly quantitative, interindividual differences in the way such experiences can be tolerated, interpreted, terminated, and assimilated into the ongoing context of experience. To account for such differences in terms of discrete ego liabilities *and* assets would be to explicate many crucial psychological phenomena, including certain forms of psychosis, therapeutic personality change, and creative insight.

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REFERENCES

1. Rush, B.: *Medical Inquiries and Observations Upon the Diseases of the Mind,* New York: Hafner Publishing Co., 1962.

2. Arlow, J., and Brenner, C.: *Psychoanalytic Concepts and the Structural Theory,* New York: International Universities Press, Inc., 1964.

3. Jaspers, K.: *General Psychopathology,* Chicago: University of Chicago Press, 1964.

4. May, R.; Angel, E.; and Ellenberger, H.F. (eds.): *Existence,* New York: Basic Books, Inc., 1958.

5. McGhie, A., and Chapman, J.A.: Disorders of Attention and Perception in Early Schizophrenia, *Brit J Med Psychol* **34**:103-116, 1961.

6. McGhie, A.; Chapman, J.A.; and Lawson, J.S.: The Effect of Distraction on Schizophrenic Performance, *Brit J Psychiat* **3**:383-390, 391-398, 1965.

7. Cameron, N.: "Paranoid Conditions and Para-

noia," in Arieti, S. (eds.): *American Handbook of Psychiatry,* New York: Basic Books, Inc., 1959.

8. Arieti, S.: "Introductory Notes on the Psychoanalytic Therapy of Schizophrenia," in Burton (ed.): *Psychotherapy of the Psychoses,* New York: Basic Books, Inc., 1961.

9. Bowers, M.B.: The Onset of Psychosis—A Diary Account, *Psychiatry* **28**:346-358, 1965.

10. Sommer, R., and Osmond, H.: Autobiographies of Former Mental Patients, *J Ment Sci* **106**:648-662, 1960.

11. Sommer, R., and Osmond, H.: Autobiographies of Former Mental Patients—Addendum, *J Ment Sci* **107**:1030-1032, 1961.

12. Connell, P.H.: *Amphetamine Psychosis,* London: Oxford University Press, 1958.

13. Custance, J.: *Wisdom, Madness, and Folly,* New York: Farrar, Straus, and Giroux, 1952.

14. Anonymous: An Autobiography of a Schizophrenic Experience, *J Abnorm Soc Psychiat* **51**:677-680, 1955.

15. Macalpine, I., and Hunter, R.A.: *Daniel Paul Schreber—Memoirs of My Nervous Illness,* London: William Dawson and Sons Ltd., 1955.

16. Beers, C.: *A Mind That Found Itself,* New York; Longmans, Green, 1908.

17. McDonald, N.: Living With Schizophrenia, *Canad Med Assoc J* **82**:218-221, 678-681, 1960.

18. Wynne, L.: Thought Disorder and Family Relations of Schizophrenics, *Arch Gen Psychiat* **9**:199-206, 1963.

19. Terrill, J.: The Nature of the LSD Experience, *J Nerv Ment Dis* **135**:425-439, 1962.

20. Giarman, N.J., and Freedman, D.X.: Biochemical Aspects of the Actions of Psychotomimetic Drugs, *Pharmacol Rev* **17**:1-25, 1965.

21. James, W.: *The Varieties of Religious Experience,* New York: The New American Library of World Literature, Inc., 1958.

22. Boisen, A.: *The Exploration of the Inner World,* New York: Harper and Row, Publishers, Inc., 1952.

23. Laing, R.D.: Transcendental Experience in Relation to Religion and Psychosis, *Psychedelic Rev,* **6**:7-15, 1965.

24. Maslow, A.H.: *Toward a Psychology of Being,* New York: D. Van Nostrand Co., Inc., 1962.

25. Carlson, H.B.: The Relationship of the Acute Confusional State to Ego Development, *Int J Psychoanal* **42**:517-536, 1961.

26. Freemantle, A. (ed.): *Protestant Mystics,* New York: New American Library of World Literature, 1965.

27. Deikman, A.J.: Experimental Meditation, *J Nerv Ment Dis* **136**:329-343, 1963.

28. Deikman, A.J.: Implications of Experimental Meditation, to be published.

29. Schorer, M.: *William Blake—The Politics of Vision,* New York: Heritage Books, 1959.

30. Abell, A.M.: *Talks With Great Composers,* Garmisch-Partenkirchen: G. E. Schroeder-Verlag, 1964.

31. Leishman, J.B., and Spender, S.T.: *Duino Elegies-Rainer Maria Rilke,* New York: W. W. Norton & Co., Inc., 1963.

32. Kris, E.: On Inspiration, *Int J Psychoanal* **20**: 377-389, 1939.

33. Mora, G.: One Hundred Years From Lombroso's First Essay-Genius and Insanity, *Amer J Psychiat* **121**: 562-571, 1964.

34. Lidz, T.: August Strindberg: A Study of the Relationship Between His Creativity and Schizophrenia, *Int J Psychoanal* **45**:399-406, 1964.

35. Hollister, L.E.: Drug-Induced Psychoses and Schizophrenic Reactions: A Critical Comparison, *Ann NY Acad Sci* **96**:80-92, 1962.

36. Federn, P.: *Ego Psychology and the Psychoses,* New York: Basic Books, Inc., 1952.

37. Kris, E.: *Psychoanalytic Explorations in Art,* New York, International Universities Press, Inc., 1952.

38. Miller, S.C.: Ego-Autonomy in Sensory Deprivation, Isolation, and Stress, *Int J Psychoanal* **43**: 1-20, 1962.

39. Christensen, C.W.: Religious Conversion, *Arch Gen Psychiat* **9**:207-216, 1963.

40. Salvatore, S. and Hyde, R.W.: Progression of Effects of LSD, *Arch Neurol Psychiat* **76**:50-59, 1956.

41. Freud, S.: *An Outline of Psychoanalysis,* New York: W. W. Norton & Co., Inc., 1949.

42. Loewald, H.: Hypnoid States—Repression, Abreaction, and Recollection, *J Amer Psychoanal Assoc* **3**: 201-210, 1955.

43. Savage, C.: Variations in Ego Feeling Induced by LSD-25, *Psychoanal Rev* **42**:1-16, 1955.

44. Pious, W.: "A Hypothesis About the Nature of Schizophrenic Behavior," in Burton (ed.): *Psychotherapy of the Psychosis,* New York: Basic Books, Inc., 1961.

45. Bowers, M.B.; Goodman, E.; and Sim, V.: Some Behavioral Effects in Man Following Anticholinesterase Administration, *J Nerv Ment Dis* **138**:383-389, 1964.

46. Abood, L.G.: A New Group of Psychotomimetic Agents, *Proc Soc* **97**:483-486, 1958.