

ALTERED STATES OF CONSCIOUSNESS: AN EXPERIMENTAL CASE STUDY

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INTRODUCTION

Consciousness as an ego function and states of consciousness of the total organism have been areas of renewed interest and psychoanalytic study in recent years. In addition to a number of clinical psychoanalytic investigations into the nature and function of altered states of consciousness, at times referred to as archaic ego states, there have been a number of experimental studies in this area. Among the latter is an extensive research study by my associates and myself into the altered states of consciousness induced by d-lysergic acid diethylamide (LSD) (21). It is the purpose of this communication to present a further aspect of these investigations by reporting material related to earliest memory recall in the waking and altered state by a single, intensively studied subject. The presentation includes observations regarding the dissolution under LSD of the screening function of this subject's earliest recollection with the revelation of a screened memory.

Since I have recently reviewed in some detail the development of the psychoanalytic thinking in regard to consciousness (21), I will here briefly summarize the conclusions of that survey as an orientation for this contribution. As developed by Freud (6, 8, 9, 10, 11, 12), and refined particularly by Rapaport (26, 27, 28, 29), Klein (15), and Gill (13), the term consciousness currently has two major uses in psychoanalytic theory. The first refers to consciousness as a primary, relatively autonomous ego apparatus or function—a structure within the ego which gives to experiences a quality of awareness and which operates through scanning available stimuli and dispensing to

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them a limited amount of attention cathexis or hypercathexis. The second usage of consciousness refers to a state of the total organism and is defined along a multiplicity of parameters referable to virtually every dimension of psychic functioning, each of which may vary with, or cause variations in, the level of consciousness. These parameters characterize the state of consciousness as a totality, a cognitive organization. They include directly observable dimensions such as those which describe the awake-asleep continuum, those referable to the manifestations of how attention is dispensed and distributed, and those related to the contents of awareness. Beyond such manifest dimensions are those inferred from behavior and conceptualized metapsychologically, such as anticathectic organizations of defense, instinctual drive organizations, memory organizations, cognitive styles, and the like. Among these, the hierarchical organization of memory-fantasies is the focus of the present study.

In this context, two previous sub-studies of our subjects under LSD serve as background for this report. The first dealt with the problem of the extent of communication and overlap between the waking and LSD states of consciousness (22, 25). This was investigated through questionnaire responses, by comparing the waking recall of the drug experience on the day following its ingestion with the direct report of this experience while under the drug. Three major styles of this recall were found and each was associated with a specific personality constellation and a distinctive altered state.

Briefly, the first style was that seen in 'adders'—subjects who reported in retrospect many aspects of their drug experience originally omitted under LSD. These subjects had experienced a pervasive altered state under LSD which included changes in their self and body images, somatic symptoms, alterations in their perception of the environment, and impaired controls. Personality data indicated that these subjects were schizoid with poorly integrated personalities and considerable psychopathology.

The second style was that of the 'subtractors'—subjects who, in their waking recall of the altered state, failed to report many aspects of their drug experience originally described while under LSD. These subjects had an altered-state experience characterized by a preponderance of changes in their manner of experiencing and relating to the environment. In regard to their personalities, they were well-defended obsessive-compulsive characters with paranoid features.

The last style was that of the 'accurate recallers'—subjects who recalled their drug experience much as they had originally described it under LSD. Their altered state was a minimal one in every area; their personalities those of inhibited obsessive-compulsive characters with tight controls in all spheres.

The second sub-study investigated the effects of the LSD states of consciousness on first memory recall (20). Most relevant here were the findings that, compared to the placebo group and to their own waking state recollections, the 'adders', while in their particularly archaic altered state of consciousness, recalled significantly more new and regressed earliest memories. 'Subtractors' and 'accurate recallers' recalled essentially the same earliest memory they had reported in the waking state.

These two studies are indicative of the individual differences which prevail in regard to the development of altered states of consciousness, the communication between different states of consciousness, and the availability of archaic memory-fantasy content for report in different states of consciousness. For the study to be described here, I have selected a subject from the 'adders' who reported a new and regressed first memory while experiencing a particularly archaic LSD altered state. Through the material developed with this subject, I will focus on the following problems: 1, the relationship between first memories and personality; 2, the nature of the alterations in instinctual drives and ego functions in an archaic altered state; 3, the differences and similarities in the cognitive organization of memory-fantasies in waking and altered states; 4, the relationship between the screened memory and the memory it screens.

CASE STUDY

The portrait of S is based on a pre-experimental clinical interview, autobiography, Rorschach test, Thematic Apperception Test, Wechsler-Bellevue Scale, and an extensive, probing interview five years after the initial research was completed.

At the time of the study, S was an actor in his early thirties. He was the youngest of several children, and described a lonely childhood in which he played mostly with girls. Attempts to play with boys failed; one hit him with a brick over his eye. He received an injection and stitches, and a gift of a huge pencil from his mother after this injury. He had a preoccupation with a solitary game in which he crowned queens and then beheaded them. He was a bedwetter. He slept in a room with his siblings. There was an atmosphere of overstimulation in the family: mother had a male visitor whom father suspected was a lover and S suspected was a homosexual; father was flirtatious with other women. To S, his parents were remote. Mother disciplined him harshly at times; she also fostered in him an interest in housework. She was an anxious, tearful woman who was often ill with both surgical and medical problems. Father, a laborer, was seldom around, but when he was at home, he barely spoke. S enjoyed being with his sisters but felt distant from his brothers. One brother was the object of his first homosexual experience: when S was about eleven years old he approached the brother in the kitchen, fondled his genitals, and performed fellatio. This experience was associated with a dream from that time.

I am in a factory and a man is going to [or does] hang me up, possibly by the penis.

This was described as a 'satisfyingly frightening' dream; his associations to factory were castles and large, stone-walled, bleak places.

S was impotent with women and lived as a homosexual. He feared venereal disease. Although generally passive and supported by his lovers, many quarrels marred his relationships.

The psychological tests, particularly the Rorschach and the Thematic Apperception Test, provided a picture of S's character structure. He was consciously anxious and acutely insecure ('falling') much of the time; he often felt hopeless, extremely vulnerable, and in need of support.

The major sources of S's anxiety were castration fears and related fears of bodily damage. He was preoccupied with sex: sexual intrusions he felt interfered with his work and other relationships. He viewed women as powerful whores, and dreaded and avoided them. He denied 'female castration' by viewing women as phallic despite perceptions of the vagina. His avoidance of women was related to his dread of father who was seen as powerful and castrating. S's object relations were narcissistic and shallow; he put up a false social front and was lonely. His controls were poor, his superego isolated and ineffectual. Repeatedly, anxiety prompted him to turn to perverted behavior. Similarly, aggression, perceived as ego-alien, was denied and then acted out. His self-image was that of a young boy, deformed in body, who submits to an older man who becomes his protector and provider.

S's Rorschach responses included a perseveration of sexual and body responses, especially of the vagina. The vagina was perceived as bloody and engulfing, but the percept was poorly integrated and primitive, leading to great anxiety. His critical judgment became poor and wishful primary process thinking dominated reality, but rationalizations followed which enabled him to recover from his disturbance. Men became confused with phallic women (queens). His perception of phallic women led to symbolic interpretations and poor separation of himself from objects. These disturbances were then repaired by other rationalizations and by intellectualization. The Rorschach also suggested that S feared his father's penis, which might attack him from the rear. His defenses against this phallus included a passive, sucking attitude, an avoidance of mother, and a search for phallic re-enforcements, notably through exhibitionism and homosexuality.

In the pre-test (non-drug) condition, S was instructed to describe his earliest memory. He reported two, both from age five.

1. 'The very first complete memory I have . . . is one day . . . I was with my mother . . . and we went to visit my granny in her home . . . and they were in another room . . . I think having tea or talking . . . and I wandered into the hallway . . . where there's a big statue my granny had. It seemed enormous to me then . . . and it was a female statue . . . and I climbed up (though I don't remember the actual climbing up . . . when we talked later). I must have tried to climb the statue to kiss her on the mouth. It was a female statue . . . and I guess the statue was old and dry . . . sort of chalk statue . . . it crashed down on top of me and all I remember was my granny came rushing out and she was very upset about it all . . . and my mother saying, "Well, as long as the boy is all right". My mother was more concerned about me, I remember . . . and my dad tried to replace the statue for my granny though my granny wouldn't have it replaced, she was so upset about that one being broken . . . she wouldn't accept my dad's offer to have one replaced. She . . . granny . . . was much more concerned about her statue than about me.'

2. 'When I was very young . . . and I was wandering in a street . . . and I was lost . . . in front of a big building, I remember . . . and I'm sure I was lost.'

Under LSD-25, S referred to the statue memory but then searched for an even earlier recollection. An excerpt from his rambling, which actually revolved around the later age of six, runs as follows.

An early memory. Let's see . . . we lived in a house in A . . . it was what they call a tenement house . . . and there were three, two sisters . . . there was a woman . . . see . . . there was one thing they used to call the close . . . the close to the house . . . oh dear . . . if I could only explain it in another language . . . it's a passageway . . . in an old tenement house . . . called a close . . . and there are always two houses in a close . . . and

in one of the houses was this family . . . a woman . . . she had two daughters, the Court girls . . . and they were Roman Catholic girls . . . all my playmates were all Roman Catholic and I was Protestant. I'm trying to think of any memory with these girls. Well, they had these wonderful dolls and things. I don't know . . . somehow or other I think of Shirley Temple. . .

Oh . . . I must have an early memory of one of these girls, but I can't think of any particular one . . . nor of anything else. No memory that actually stands out in my mind . . . really. Let me see if any memory stands out . . . no, no, no. It is very funny . . . it is as though I am always going down myself through the days . . . and I can see the stairway . . . I can see that room . . . I can see where we played . . . and the wall, and played with the dolls on the floor. Yet I . . . I remember once thinking that I would have liked a doll that was all gold . . . I remember . . . all gold . . . and very small . . . I've always liked very small things. I don't know why I wanted this gold doll . . . except oh, I know what it was . . . I wanted a doll . . . and I thought . . . what was the most perfect doll . . . so it would be solid gold . . . a solid gold doll . . . and I don't know . . . then I thought of things like silver . . . it would have something of silver . . . hair of silver . . . metal silver . . . it was a doll . . . it wasn't a . . . I remember that now . . . yes, a doll of solid gold . . . I . . . and it would be a small doll . . . it would be so neat and so perfect. For some reason I think of the Christ thing . . . the Christ and the crib, you know? The Christmas thing for some reason. And I think of something earlier . . . I thought of a gold and white image of the God . . . the white on white . . . where the black on black . . . when we were talking about the colored uh . . . and while I think of a colored man . . . I'm wandering again . . . I'm sorry.

Yes, I remember wanting a doll very badly . . . a doll like the Court girls . . . then I remember at one time wanting this particular gold doll . . . I don't think I ever mentioned it to anybody . . . and I don't think it was a strong wish . . . I don't remember.

Oh, but let me tell you what did happen . . . if I may . . . let me interject something here . . . talking about Shirley Temple and dolls . . . someone gave me . . . you know how in

those days . . . they had . . . in your daddy's . . . in your father's cigarette packet a picture postcard of film stars . . . well, for some reason . . . it wasn't because I collected all the others or anything . . . but for some reason I don't know who gave it to me . . . some one in my family I know . . . gave me . . . out of a brand new packet . . . I remember it was brand new . . . so clean . . . and so crisp and fresh . . . a brand new picture of Shirley Temple . . . and to me . . . although I ignored the other cards in the set . . . I guess there must have been an awful lot of other cards in the set . . . to complete the set . . . I had this one picture of Shirley Temple and I thought it was a prize possession . . . and I went racing down the street . . . to show it to somebody . . . I can't think . . . and their grubby little filthy paws . . . they crushed it in their hands.

One other recollection that S reported spontaneously very soon after he took the drug will complete this presentation. He first thought of a coffin lined in gray or black, of his granny lying in the coffin, of asking who died recently, of a queen who was beheaded, and of a spider. He reported this recollection.

She [grandmother] is in her kitchen . . . the family were there and they are all going up and they're kissing the old lady . . . she's dead in her coffin . . . and they asked me to . . . I had to go up and kiss her . . . and I did. . . . I don't think I was frightened . . . I feel a little sick now though. . . . I've never thought of this before . . . why am I laughing . . . I never thought of this when writing [my autobiography, and when asked] what my earliest memories were.

Five years later, S offered another early memory of a lodger, a big man, taking him to the park and of running in the grass while the lodger watched. He then returned to the statue memory as his earliest and, in repeating it, added references to the pedestal on which the statue stood near a window, to its being an old, dried-up thing, to his trying to kiss the 'white lady', and to his grandmother saying he should be whipped or spanked.

At the same time, S added that under the drug five years before he had recalled an older uncle after whom he was named, and of how the uncle smelled of tobacco. In this last interview he failed for some time to mention the drug memories of his grandmother's death, his female playmates, the Shirley Temple doll, and the crushed picture, despite extensive inquiry. Instead he spoke at length of the grandmother in the pre-drug statue memory, his maternal grandmother. Probing finally revealed that it was the paternal grandmother who had died when S was eight years old, and only then did he mention the drug memory of her death again. In this telling, the grandmother was lying on a bed and when S kissed her he noticed hair on her face—whiskers—and he had 'a terrible fit of giggles' after kissing her.

DISCUSSION

While the present study is limited in that it deals essentially with manifest memory content and a single subject, the material nonetheless offers an opportunity to compare highly condensed and important memory-fantasies drawn from two distinct states of consciousness. As previously discussed (17, 18), there are naturally limitations to an approach such as this. However, if we adhere essentially to the manifest content of these memories and to what may be most readily inferred from this content, using a somewhat freer modification of our previously described scoring system (17), we can glean from these productions considerable material of relevance to the psychoanalytic theory of consciousness.

1. If we compare the assessment of S with his pre-test earliest memories, we can recognize that, as has been demonstrated in recent group studies (17, 18, 19, 20), these memories reflect central aspects of S's personality. Briefly, we may note S's conflict with, and aggressiveness toward, women; his severe castration anxiety; his loneliness; his poor object relationships; his poor controls. All of these are reflected in both the pre-test memories and his assessment.

The extent to which the memories in the drug state reflect S's basic personality is less clear, and a group study of this question is not available. It is my impression that altered-state earliest memories also reflect enduring personality dimensions and conflicts.

2. The style of report of the altered-state earliest memories differs from that in the waking state. We can observe in the drug state, but not in the waking state, a fragmentation of contents; an inability to focus or cathect a selected, stable, single memory; intrusions of nonmemory content; an open associational flow; an emphasis on imagery and, particularly, on fantasy; and a feeling that experienced mental contents cannot be communicated through the usual means of language. These changes are a reflection of the cognitive organization and its tools in the altered state. We may conceptualize these as changes in a number of ego functions, among which the regulation and style of dispensing and distributing attention cathexis is particularly significant. Compared to the waking state, these cathexes seem to be less controlled by the ego and more easily overwhelmed or pre-empted by shifting contents. The probability that it is drive-related mental contents that are most likely to capture attention cathexes in this state is suggested by the nature of the memory material and our information about S.

Thus, our data indicate that both the contents cognized and the attention-cathecting function of consciousness itself are modified in altered states of consciousness. This observation may illumine aspects of Rapaport's hypotheses (*cf.*, 28).

3. The pre-test (waking state) and experimental (drug state) earliest memory reports (ignoring for the moment the screened memory of the death of S's grandmother) suggest certain hypotheses regarding the two cognitive organizations which are tapped by these sets of recollections—one the waking recall of earliest childhood and the other the altered state recall of this period. These may be described both in terms of the differences and similarities between the two states of consciousness.

Differences in the two states suggested by these data include the following which refer to the altered state as compared to the waking state: memories are organized to a greater extent in the primary rather than the secondary process mode; drive derivatives play a greater role in the memory content and, further, do so through the expression of more 'primitive' derivatives; the structural balance between id, ego, and superego is altered; and an entirely different repressed fantasy system is revealed, which is essentially absent in the waking state productions. Similarities in the two states suggested by these data include the following: aspects of the balance between ego, id, and superego are comparable; and there are shared or bridge-like fantasy elements common to both states.

We conceive, as do Rapaport (27), Klein (15), and Arlow (1, 2, 3, 4), of memory and fantasy organizations as existing as schemata layered in a hierarchy from drive-dominated, primary-process organized to reality-related, conceptual, secondary-process organized. In our two sets of recollections, the waking state memories are more strongly fixed in reality and in specific well-delineated object relationships, with a suggestion of symbolic representation, as in the reference to the statue. The latter probably reflects the roots of this memory in earliest childhood (*cf.*, 23, 30). The altered state memories, on the other hand, and particularly the 'doll' recollection, center around a fantasy-wish with a strong symbolic dimension. In these memories there is a fluidity of contents, shifting from the girls to the doll to the picture, which may reflect not only the difficulties in focusing attention under LSD-25 but also mobility of cathectic investments and an ease of displaceability in these cathexes. Thus, we may have observed directly some features of the primary process.

Let us now attempt an assessment of the structural balances reflected in the recollections from the two states. In the waking state, id derivatives may be seen in the wish to kiss the statue and cling to it. There is also the destruction of the statue which has ego-alien and control-loss qualities in being accidental. In regard to the ego, the object relationships reflected in this

memory are adequate although an inanimate object is central. There is separation and loneliness, and ultimately object loss and bodily damage to S. There may be attempts at mastery implied in the effort to climb and in turning to father for assistance, though both fail. There is a positive note in mother's concern for S. And finally, the superego derivatives are represented in this memory through S's misbehavior when he was not watched, in grandmother's punitive reaction to the accident, and in the concern expressed by mother and father.

In the altered state recollections, id aspects include the play with the Court girls and the central theme of the memories: the implied wish to become pregnant and have a 'Christ child', including the related wishes for the perfect doll and for the picture of Shirley Temple. Aggression is directed toward S by an indefinite figure, and there may be a punitive element to it. Regarding the ego aspects of these drug memories, compared to the waking memories, there is a more open suggestion of a strong feminine identification; indications of more peripheral object relationships in the vagueness of the persons mentioned and in the central role played in the memories by inanimate objects; comparatively less regard for reality since a wish is the major theme of one of the memories; a more extensive utilization of symbolism; and little success in achieving the goals S sets for himself.

Over-all, we may infer that the relationship between the psychic macrostructures bears considerable similarity and some differences in the two states of consciousness. One major difference is the appearance in the altered state of a pregnancy fantasy as a central memory theme. This fantasy system may have appeared under LSD-25 because of shifts in the counter-cathetic alignment of the ego's defenses as well as an intensification of instinctual drive expressions. The appearance in awareness of such an unconscious fantasy in the altered state of consciousness serves to exemplify the relationship between these two phenomena. In another vein, these findings suggest that gross structural balances are largely comparable and enduring in

different states of consciousness, while selected substructures are altered.

In addition to the similarities noted structurally, there are striking comparabilities in the raw fantasy elements in the memories from each state of consciousness. To note them briefly, both include references to two women; the statue is paralleled by the dolls; the crash-destruction of the statue parallels the crushed-destruction of the doll-related picture of Shirley Temple; the prized quality of the statue for grandmother corresponds to S's feeling that the picture was a prized possession; and father as the source of restitution by way of the offer to replace the statue corresponds to his being represented as giving S the picture, these offers being unsuccessful in both instances.

These manifest elements may be bridges that link the total cognitive and fantasy-memory organizations in the two states and indicators that there is a relationship between the mental contents organized in the various states of consciousness. These bridges may derive from schemata shared by the organizations (*cf.*, 27), and they appear to be comprised of related drive and ego expressions. One is reminded of selected manifest dream elements which are the key to crucial clusters of latent dream thoughts, and of phrases in free association that connect the manifest themes on which the patient is consciously focusing to the unconscious themes that lie latent beneath them. Put another way, these bridges are apparently selected for their capacity to both screen and represent what is concealed, much as Freud demonstrated for screen memories (7). This leads, then, to a discussion of S's screened memory.

4. The countercahctetic and other alterations in the psychic apparatus induced by LSD-25 revealed a repressed memory that was screened in part by S's waking earliest memory. This is an unusual form of screen memory: an earlier recollection (of S's maternal grandmother and the statue) screening a later traumatic experience (the death of S's paternal grandmother). Freud, in his paper on screen memories (7), also dealt with such a screen, which, as Strachey notes (31), has seldom been

mentioned in the subsequent literature. In that paper Freud drew a parallel between the screening process and symptom-formation: there is a conflict between remembering and resistance-forgetting—between, we might add now, the id and the ego or within the ego itself—which is handled by means of a compromise. Through the use of displacement, a traumatic experience and the fantasies associated with it are repressed and a substitute derivative memory is recalled.

In Freud's analysis of what was apparently his own memory (14, 31), an early recollection preceded and screened associations to a teen-age experience that involved sexual fantasies. We might note, as did Jones (14), that in keeping with the level of analysis of his own dreams, Freud did not generally expose the infantile roots involved in such material (8). While the early memory momentarily served as a screen for an adolescent fantasy, it also undoubtedly screened infantile fantasies and memories, and these latter fantasies were probably the precursors of the former. Similarly, with S, the earliest memory of the statue screened the repressed death scene but undoubtedly also screened earlier, infantile experiences and fantasies, possibly related to his mother.

In comparing the waking earliest memory with the memory of S's grandmother's death, we can again identify common elements which form the two sides of the screen. In other terms, these are the links between the two cognitive organizations in which the two memories are embedded. To exemplify these, grandmother and kissing are referred to in both recollections, while climbing is paralleled by going up and the dried-up white lady statue has its counterpart in the dead grandmother. Structurally, id elements in the memory of grandmother's death include kissing and total destruction: death. Regarding ego aspects, the central object is a dead woman although distant relatedness is reflected through the pressure from others to kiss grandmother.

In recalling the screen instead of the screened memory, certain gains for S seem evident. In understanding these, a concept

of 'memory work' I suggested elsewhere (17, 18) might prove useful. This is a term analogous to 'dream work' and refers to the mechanisms used by the ego to modify the latent memory experience to produce a manifest screen memory. The dynamics and economics of this work account for the repression of the traumatic experience, a repression which is maintained by countercaustic forces.

If we turn to S's two memories, certain differences are striking. The screen memory offers the recall of a living grandmother instead of a dead one, of a minor injury to S and the destruction of a potentially replaceable statue instead of the death of a loved one in all of its finality, and of attempts to replace the lost statue instead of the helplessness of the death situation. The ego has 'reworked', through displacement, denial, and other means, the memory of a devastating experience into a far less traumatic one. While one could speculate further, it is best to consider this point as one limit to our work with manifest content and await further data with which we might develop these formulations in greater depth.

5. If we cautiously consider S's historical and assessment material in conjunction with the memories he reported, we can develop certain additional hypotheses. The data suggest an extension of Rapaport's (27) and Arlow's (1) demonstrations that the same concept or conflict receives different representations at different levels of consciousness. Our material suggests that similar basic anxieties, and a person's attempts to cope with them, may be represented differently in various states of consciousness. This is a concept strongly akin to one presented by Arlow (1, 2, 3, 4) that there is a hierarchy of fantasy life grouped around basic instinctual wishes and different historical attempts of the ego to resolve the intrapsychic conflicts over these wishes. My own thesis, however, was developed independently from the data presented by Arlow.

To exemplify this in a tentative manner, S's history and assessment suggest that castration anxiety is a major motif in his life. If we follow this thread through the recollections re-

ported by him (with the understanding that other material condensed in these memories will not be discussed here), we can view the fantasy-memories from each state as different cognitive attempts to recall and cope with situations related to this anxiety at different levels of consciousness. Thus, the waking recollection of the statue presents S's bodily anxieties, hints at its relationship to women, and presents reality-oriented attempts at restitution, which fail. The altered state memories present the bodily danger in terms of death, hint at fantasies of restitution beyond real possibility, such as through pregnancy, and again give the impression of failure to cope. Incidentally, these failures to resolve the anxiety are also amply demonstrated in S's life and in his test protocols.

These remarks, while speculative, are presented to indicate the need for study in detail and depth of the unconscious cognitive organizations and the specific memory-fantasies embedded within them.

6. The discovery of distinctive fantasy systems in the altered state may be compared with another means of access to these cognitive organizations: the painstaking work in the course of a psychoanalysis which leads to the revelation of unconscious fantasies. This slow process has been discussed by Arlow (4) and detailed by Kris (16), while Nederland (24) has described the more dramatic appearance of such memory-fantasies during analysis through a sudden alteration in the state of consciousness, an event which more closely resembles the conditions of the present study. In this context, it is of note that in the waking state interview long after the drug experience, S's memories of grandmother's death and of the dolls which had been reported under LSD were not spontaneously recalled, but were mentioned only in response to a detailed inquiry concerning grandmother. It would appear then, as suggested by the work of Kris (16) and Nederland (24), that these recollections were not integrated into the waking mental organization through the 'release' of the memories under the drug, but were subsequently 'unremembered' because analytic working

through and synthesis did not follow. Put another way, they were not integrated into the waking cognitive organization.

SUMMARY AND CONCLUSIONS

This paper describes a study of earliest childhood memories reported in the waking state and in the altered state by a subject selected because of the archaic state of consciousness he experienced under LSD and because of the series of regressive shifts observed in his earliest memory recall under LSD, which included the revelation of a screened memory. The following conclusions are drawn from these observations.

1. Waking earliest memories can be related to central personality attributes and anxieties; this may also be true of earliest memories reported in altered states.

2. In the altered state, there appears to be both a change in the ego function of consciousness, particularly in its role as the distributor of attention cathexis, and in the mental contents most likely to be cathected by attention.

3. Differences in the cognitive organizations prevailing at the two levels of consciousness could be detected in our subject. These included a predominance in the altered state of primary process mechanisms, of drive derivatives which were generally of a more primitive nature, and of a fantasy system which was not detectable in the waking state. The structural balance between id, ego, and superego in the two states revealed features suggesting both differences and similarities. Shared manifest elements, conceived of as bridges between the two states of consciousness, could also be detected.

4. The screened memory revealed in the altered state of consciousness suggests that 'memory work' is done by the ego to revise a traumatic experience into a less threatening memory, allowing for repression of the trauma. This repression was lifted by the changes in the mental apparatus caused by the drug-induced altered state of consciousness.

5. The material suggests the hypothesis that in a given person, fantasies at different levels of consciousness are organized

around similar central anxieties, and that the means of expressing and coping with these anxieties find different form and content in keeping with the relevant cognitive organizations.

6. The failure of our subject to spontaneously recall five years later the recollections reported in the altered state indicates that without working through and synthesis by the ego, such material fails to be integrated into the waking cognitive organization.

It is hoped that this paper may contribute certain refinements to the psychoanalytic conception of states of consciousness and that it will lead to more careful research in which the role of individual differences and that of psychopathology receive greater attention.

REFERENCES

1. ARLOW, JACOB A.: *Ego Psychology and the Study of Mythology*. J. Amer. Ps. Assn., IX, 1961, pp. 371-393.
2. ———: *Unconscious Fantasy and Disturbances of Conscious Experience*. This QUARTERLY, XXXVIII, 1969, pp. 1-27.
3. ———: *Fantasy, Memory, and Reality Testing*. This QUARTERLY, XXXVIII, 1969, pp. 28-51.
4. ———: *Conflict, Regression, and Symptom Formation*. Int. J. Ps., XLIV, 1963, pp. 12-22.
5. BREUER, JOSEF and FREUD: *Studies on Hysteria* (1893-1895). Standard Edition, II.
6. FREUD: Project for a Scientific Psychology (1895). In: *The Origins of Psychoanalysis. Letters to Wilhelm Fliess, Drafts and Notes: 1887-1902*. Ed. by Marie Bonaparte, Anna Freud, and Ernst Kris. New York: Basic Books, Inc., 1954, pp. 316-445.
7. ———: *Screen Memories* (1899). Standard Edition, III.
8. ———: *The Interpretation of Dreams* (1900). Standard Edition, IV/V.
9. ———: *The Unconscious* (1915). Standard Edition, XIV.
10. ———: *A Metapsychological Supplement to the Theory of Dreams* (1917). Standard Edition, XIV.
11. ———: *The Ego and the Id* (1923). Standard Edition, XIX.
12. ———: *A Note Upon the 'Mystic Writing-Pad'* (1925). Standard Edition, XIX.
13. GILL, MERTON: *Topography and Systems in Psychoanalytic Theory*. Psychological Issues, Monogr. X. New York: International Universities Press, Inc., 1963.

14. JONES, ERNEST: *The Life and Work of Sigmund Freud, Vol. I*. New York: Basic Books, Inc., 1953, pp. 24-25, 32-33.
15. KLEIN, GEORGE: *Consciousness in Psychoanalytic Theory: Some Implications for Current Research in Perception*. J. Amer. Psch. Assn., VII, 1959, pp. 5-33.
16. KRIS, ERNST: The Recovery of Childhood Memories in Psychoanalysis. In: *The Psychoanalytic Study of the Child, Vol. XI*. New York: International Universities Press, Inc., 1956, pp. 54-88.
17. LANGS, ROBERT; ROTHENBERG, MICHAEL; FISHMAN, JACOB; REISER, MORTON: *A Method for Clinical and Theoretical Study of the Earliest Memory*. Arch. Gen. Psychiat., III, 1960, pp. 523-534.
18. LANGS, ROBERT J.: *Earliest Memories and Personality: A Predictive Study*. Arch. Gen. Psychiat., XII, 1965, pp. 379-390.
19. ———: *First Memories and Characterologic Diagnosis*. J. Nervous & Mental Disease, CXXI, pp. 318-320.
20. ———: *Stability of Earliest Memories under LSD-25 and Placebo*. J. Nervous & Mental Disease, CXLIV, 1967, pp. 171-184.
21. LINTON, HARRIET and LANGS, ROBERT: *Personality and Varieties of LSD Experiences*. To be published.
22. ———; LANGS, ROBERT; PAUL, IRVING: *Retrospective Alterations of the LSD-25 Experience*. J. Nervous & Mental Disease, CXXXVIII, 1964, pp. 409-423.
23. LOEWALD, HANS W.: *Hypnoid State, Repression, Abreaction and Recollection*. J. Amer. Psch. Assn., III, 1955, pp. 201-210.
24. NIEDERLAND, WILLIAM G.: *The Role of the Ego in the Recovery of Early Memories*. This QUARTERLY, XXXIV, 1965, pp. 564-571.
25. PAUL, IRVING; LANGS, ROBERT; LINTON BARR, HARRIET: *Individual Differences in the Recall of a Drug Experience*. J. Nervous & Mental Disease, CXL, 1965, pp. 132-145.
26. RAPAPORT, DAVID: States of Consciousness: A Psychopathological and Psychodynamic View (1951). In: *The Collected Papers of David Rapaport*. Ed. by Merton Gill. New York: Basic Books, Inc., 1967, pp. 385-404.
27. ———: Cognitive Structures (1957). *Ibid.*, pp. 631-664.
28. ———: The Theory of Attention Cathexis: An Economic and Structural Attempt at the Explanation of Cognitive Processes (1959). *Ibid.*, pp. 778-794.
29. ———: On the Psychoanalytic Theory of Motivation (1960). *Ibid.*, pp. 853-915.
30. RUBINFINE, DAVID: Perception, Reality Testing and Symbolism. In: *The Psychoanalytic Study of the Child, Vol. XVI*. New York: International Universities Press, Inc., 1961, pp. 73-89.
31. STRACHEY, JAMES: Editor's Note for Freud's *Screen Memories*. Standard Edition, III, pp. 301-302.