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USE OF DRUGS IN PSYCHODYNAMIC INVESTIGATIONS

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THE INVESTIGATION of psychoanalytic or psychodynamic concepts is attracting attention from certain psychoanalysts, psychiatrists, and workers in allied fields. The need for research studies has long been evident but has been slow in developing, partly in association with certain unique aspects of the theory and practice of psychoanalysis. There is a growing demand for experimental validation of those conceptual and technical aspects which can be investigated by techniques available at the present time. The literature on these issues deals with the methodological approaches to the problems and reports of some of the studies that have been completed.^{9,13,15,25,36} One such approach is the investigation of the effects of various drugs on patients with different types of emotional disorder as well as on normal subjects. There are a number of papers dealing with the psychopathological, psychodynamic, and psychotherapeutic changes associated with the acute introduction of several different drugs.^{4,16,18,19,23,26,28,29,31,32,33,34,35,39,47} There is a variable emphasis on these three aspects of the effects of drugs and in some instances an inclination to ignore their inter-relatedness, especially with regard to psychopathological and psychodynamic material. It would seem that some investigators take for granted concepts most in need of validation and use the research tool, the drugs, as a valid and established adjunct to psychotherapy. In some reports, symptomatic improvement and relief of anxiety are attributed to the manipulation of the content of the patient's productions in drug-intoxicated and subsequent drug-free interviews, overlooking the possibility that the change may have been associated with many other factors. Somewhat analogous conclusions are often stated or implied concerning psychodynamic material and mechanisms, with emphasis on content or productions and with little regard for the

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clinical status of the patient or for other factors which might influence the reaction.

The acute administration of such drugs as mescaline, d-LSD₂₅, amobarbital, methamphetamine and chlorpromazine may produce a disturbance in the equilibrium, both physiological and psychological, of the human organism. In response to this disturbance, there are reactions in many areas of functioning toward maintaining or regaining homeostasis. The changes and experiences in the psychic realm are often described and explained in psychodynamic or psychoanalytic terminology with particular emphasis on alterations of ego integration and alterations of repression-resistance with release of repressed material, including affect, early memories, conflicts, and overt transference manifestations.^{7,10,14,26,30,33,41,43,45,47} Primary needs are said to be gratified by certain drugs and others facilitate gratification of secondary needs which are listed as narcissism, exhibitionism, and sadism.⁴⁷ Other investigators ascribe reduction in basic drives to certain drugs as well as reduction in secondary drives, which they designate as anxiety, depression, and self-punishment.³³ There are differences of opinion concerning drug-specific and personality-specific reactions to administration of various drugs. Several studies have reported more striking evidence of personality-specific reactions than drug-specific responses.^{3,8,22,34,37,48} One group⁴⁹ found no specific relationship between the noxious agent and the form and content of the disturbance. Another team³⁹ emphasized a predominantly personality-specific reaction to multiple drug administration. It has been noted repeatedly in animal studies that the same behavioral effect can be produced by diverse noxious stimuli and that a given stimulus can be dealt with by different actions or behavior.²⁴ This equivalent response to heterogeneous stimuli and heterogeneous response to the same stimulus may have some relation to our discussion of drug reactions in man.

It would be useful to be able to define the "normal" response to drug administration at all levels of behavior, but this is not possible. The basic neurophysiological action is known for some of the drugs used in psychodynamic investigations. Mescaline and d-LSD₂₅ induce transient changes in autonomic, sensorimotor, emotional, ideational, perceptual, and behavioral spheres in a relatively clear state of consciousness.^{10,18,34,44} Amobarbital, a barbiturate, produces signs of central depression in the form of sedation and hypnosis.^{30,37,46} Methamphetamine, a cephalotropic, sympathomimetic amine usually creates

signs of central stimulation.^{21,28} Chlorpromazine, a phenothiazine derivative, has a selective depressant effect on the central nervous system producing inhibition of drive without impairment of consciousness or responsiveness.^{17,27} From the standpoint of psychodynamic research, such information is of little assistance in regard to the "normal" reaction to drugs.

Another approach entails the administration of a drug to a group of volunteer subjects, so-called normal controls.^{1,12,43,48} Evidence can usually be found in support of the fundamental neurophysiological effects with some exceptions. The more dramatic superstructure of the reaction appears in a wide range of varying responses when a given drug is administered to a group of subjects, whether patients or normal controls, or on successive occasions to the same subject.

The material and methodology of these observations have been published elsewhere.^{3,34} A group of normal control subjects, including graduate psychology students, medical students, and nurses, was also used in these investigations. Important aspects of the methodology and the psychopathological features of the drug reactions are presented in a companion paper by Dr. Harry H. Pennes.³⁵ It is pertinent to re-emphasize the importance of the baseline or drug-free evaluation of the patient. This includes a careful investigation of psychopathological status, behavior, associational patterns in therapy or serial interviews, and a psychodynamic formulation. In addition, one should assess the meaning of the drug administration to the patient (and to the investigator), the relationship between patient and therapist, the alterations of this relationship with drug administration, and the pattern and content of associative material and affective reaction in the drug-intoxicated state.

PSYCHODYNAMIC FEATURES IN RESPONSE TO DRUG ADMINISTRATION

From a psychodynamic point of view the introduction of a drug disturbs the homeostasis of the total organism, bringing about a mobilization, and probably a regrouping of forces and defenses, to maintain or regain equilibrium at the pre-drug level or to achieve a more expedient equilibrium with less domination by emotional problems. The administration of mescaline or d-LSD₂₅ to some normal control subjects produces the characteristic autonomic and perceptual experiences with a reaction of mild, diffuse anxiety, episodic and mild

euphoria which the subject associates with contemplation of the perceptual phenomena and feelings *suggestive* of depersonalization in relation to time-space-body-image distortions. The latter are often reported *as if* things are unreal. Depersonalization may be the reaction to perceptual distortions but is not synonymous with them. There may be some irritability about conversing with the investigator inasmuch as the reverie is interrupted, but the subject may voice concern about being left unattended. Some anxiety is often expressed about the difficulties in concentrating and reporting, though such subjects are usually quite productive and one gains the impression of having as complete an account as possible. Hallucinations may be limited to the colored, shifting geometric patterns and a few simple images such as eyes and oriental dragons, which are of common occurrence. One important feature is the reaction to the visual phenomena as a *parade* rather than as an *attack*, just as the other distortions often are not regarded as jeopardizing body integrity and reality control. Repetition of the drug experience in these subjects produces a comparable reaction but there may be less anxiety and some differences in the relative dominance of various perceptual phenomena.

Other normal control subjects, about whose emotional stability there was some question, developed frank paranoid or catatonic syndromes. They had not sought psychiatric treatment before the drug experience and were reluctant to participate fully in interviews necessary for a comprehensive psychodynamic formulation.

A number of patients with pseudoneurotic schizophrenia²⁰ and overt schizophrenia had repeated studies with several of the drugs under consideration. Time and space preclude the detailed presentation of the baseline and drug-associated material but certain points can be illustrated.

Case 1

This 34-year-old man had an eight-year history of phobias, diffuse anxiety, and depression, as well as bizarre ideas about the horrible appearance of the right side of his face. Feelings of genital inferiority, fears of sexuality with women, and fascination with homosexuality were also obtained. He had lived with an alcoholic, ne'er-do-well father who showed some affection, and with a carping, increasingly psychotic mother until the age of five, when both parents were institutionalized and he was sent to an orphans' home. Childhood and early adolescence were spent in such institutions or in foster homes and he received beatings and harsh treatment for trivial offenses.

During adolescence he felt inferior and unwanted, not without justification,

and was guilty about masturbation. At 19, he visited his married sister for the first time in many years and had difficulty in suppressing sexual interest in her. From age 20 to age 33, he spent most of his time at sea in the Navy or Merchant Marine and was aboard a ship that was torpedoed during the war. Though uninjured, he was terrified and drank heavily while ashore. Heterosexual relationships were carried on with prostitutes for the most part and gave him little pleasure. He had some homosexual experiences at sea "out of curiosity," and lived in the home of an overt homosexual while ashore, though he declined his host's invitation to sexual play. He was studied in our series during his second hospitalization at Psychiatric Institute. The diagnosis was pseudoneurotic schizophrenia.

With the first administration of mescaline he had severe anxiety, agitation and weeping with a variable paranoid reaction, thinking disorder, inappropriateness, and hallucinations in all spheres. During much of the time he was attending the circus with his father, seeing crocodiles, elephants, and other animals and alternately enjoying himself and being frightened. Most of his productions were verbalized in a childish voice and there was some unintelligible babbling. He carried on a conversation with his father, expressing much enthusiasm about the circus, alarm at seeing snakes about to attack him, and fearful concern that the monkeys were laughing at him. In the midst of all this, he said: "Oh God, I have to go to the bathroom. I wet the bed. I'm sorry, Dad." He made several references to having the breasts of a girl and being genitally inferior as a man. At one point he mentioned that the nurse resembled his sister. Later he spoke of an evil-looking bird with one eye, perhaps a duck, sitting on his right. This or someone set fire to the right side of his hair. After he had received an antidotal drug later in the day, he stated that he used to go to the circus with his father though this had never been mentioned during a long period of psychotherapy. Most of the drug-free memories of his father he had reported were condemnatory and disdainful. He made no reference to mother, orphanage, foster homes, or war-time experiences and mentioned the nurse's resemblance to his sister only in passing.

He had spontaneously anticipated the mescaline experience with much optimism, hoping it would cure him. Afterward, he said that he had relived his childhood from three to five and that his condition was improved as a result. He no longer felt that the right side of his face was horrible and associated this change in attitude with the strange bird and the fire in his hair on that side.

There was a dream-like quality to the circus experience with oscillations between frightening elements and fairly simple, wish-fulfillment scenes. His retrospective comment that he had relived his life from ages three to five is an exaggeration. The mescaline productions might be regarded as a condensation of his personality problems with particular reference to his concept of himself, body image, ambivalent relationship to father and men, and his fearful, rejecting attitude toward women, who were seen as threatening, ridiculing, dangerous animals,

prototypically the mother. It is questionable that all of this dynamic material was included and a number of the other aspects of his personality structure were not evident. Some of this crystallization of content under the influence of mescaline was new, though the dynamics were reasonably clear before the drug was administered. The patient's impression of psychodynamic insight and clinical improvement with the drug experience is a not infrequently observed manifestation in schizophrenic patients. In particular, he related the strange bird and the fire in his hair on the right side to diminished concern about the horrible appearance of the right side of his face. This is a simple illustration of the facility in shifting emphasis which such patients have. This type of alteration is sometimes recognized as a psychotherapeutic or psychodynamic gain or improvement and is attributed to a variety of psychotherapeutic, pharmacologic, or other maneuvers.

The patient had mescaline experiences of variable severity on four subsequent occasions but with less anxiety than in the first, and the story-like quality was absent. There were remarks about the circus on each occasion with frightening and pleasurable reactions to various animals, dragons, skeletons, fish, dead pheasants; children in red, white, and blue clothing; a woman's breasts, perhaps his mother's; a girl with candy, perhaps his sister; and a hamburger with onion. In addition there were many other random visual perceptions such as a Walt Disney movie with Mae West and Alice Faye, a Mobilgas station, and an eye staring at him. His father was not mentioned in any of these subsequent drug experiences. During the second mescaline test there was marked depression for a few hours, and during the third he reported feeling better than he had ever felt in his life. He refused the antidotal drug, preferring to enjoy the visual experiences. Following the fourth mescaline administration he was depressed, tense, and blocked for a few days as he had been after the first and second. During the fifth test he was more withdrawn than previously but without giving evidence of pleasurable contemplation of the experiences. Subsequently, he volunteered that he no longer felt that the mescaline cleared up problems and regarded the administration as just an experiment.

The intravenous injection of amobarbital was associated with a relaxing, euphorizing effect, and there was a brief hallucination of a sexually inviting blonde girl beside him. He identified her tentatively as his sister. Otherwise the interview was characterized by discussion of drug-free material less gloomily and he referred to the therapist-investigator as his best buddy. The second amytal experience differed from this in the absence of hallucinatory phenomena and in the unusual presence of humor and facetiousness in his productions with a variable persistence of hostility toward another male patient. The administration of amphetamine produced a dysphoria with increased tension and depression. The patient's associations were of a somewhat contentless or in the associative

In this series of drug reactions, one can see a general pattern of personality-specific responses which are more evident than drug-specific reactions. There is an emphasis on various aspects of the psychodynamic material at different times but there is never a complete view of the personality structure. One can observe some of the vicissitudes of ego integration and the defense mechanisms under the influence of these special stimuli with particular reference to repression and regressive phenomena. The important family figures in the patient's life are present in some of the experiences or there is partial misidentification of someone other than the therapist. Thus, the concept of transference is not applicable in the usual sense. To the extent that one of the drugs facilitates relaxation, positive feelings may be enhanced and likewise, unpleasant experiences with drugs may revive attitudes and feelings about harsh treatment with a reaction of hostility and resentment which may be expressed or evidenced by depression. Positive or negative feelings in this context may or may not be sexualized. These drug experiences did not have any significant influence on the behavior and progress in psychotherapy from a long-range point of view, nor did they affect the clinical course.

Case 2

A 44-year-old married woman had a 20-year history of weakness, hypochondriacal complaints, temper tantrums, anxiety, and depression and a 13-year history of increasingly frequent sexual relations with men whom she met casually. Initially there was intercourse but this soon failed to interest her, and mouth-genital relationships became preferred with subsequent predilection for seeing the man ejaculate, following which she would go off and urinate. Productions in drug-free psychotherapeutic sessions were characterized by her usual complaints with some material about her sexual activities, her ability to have orgasm by thinking of sexual play, and the importance of the relation between urination and orgasm. In addition, there were some expressions of guilt about her sexual practices.

Domination by anxiety and other symptoms interfered with her working effectually in psychotherapy and it was not possible to obtain as clear a picture of her personality structure as might be wished. Nevertheless, the clinical picture and psychodynamics could be formulated with reasonable accuracy. Following the administration of d-LSD 25 once and mescaline on two occasions, she experienced an apparent sexual ecstasy mixed with irritability, paranoid trends, hallucinations in all spheres, and tremendous productivity. There was an experiencing and some dramatization of masturbation, intercourse, fellatio, cunnilingus, with evidence of excruciating pain and pleasure as well as voyeurism and exhibitionism. The objects were father, mother, sister, other women and men from the past, the therapist, and herself. She spoke of needing a penis

in her vagina night and day, of wanting to be male, of seeing the therapist as a penis; and she recounted a masturbatory fantasy since age 13 of cunnilingus performed by her father. She saw many people of both sexes nude. There was a great deal of rhythmic pelvic movement and manual stimulation of her genital area, often accompanied by sucking movement of her lips. On several occasions she began to undress, wishing or assuming that the therapist was about to have intercourse with her. Gross ambivalence toward family members was verbalized and she spoke of killing each of them at one time or another. She acknowledged responsibility for the death of a sister of cancer at 21 because the latter had come between the patient and her father.

In response to injections of methamphetamine on two occasions, she verbalized much shame and guilt about sexual practices, was depressed, spoke in passing of observing parental intercourse at 12 and of having continuous obsessive thoughts about sexual play in all positions. With the first injection of amobarbital she was very anxious and tense; she complained of somatic symptoms and had a gross body tremor. The reaction to the second injection resembled her response to mescaline with a mixture of sexual rapture and sobbing about the pain. It was evident that she experienced the intravenous injection as intercourse with one of her lovers.

Two fairly stereotyped reactions are seen here in response to quite different drugs, and again they are more personality-specific than drug-specific. The patient revealed much which had not been mentioned in the drug-free state, but one cannot arbitrarily assume that this was all repressed material. Almost all of the combinations and permutations of infantile sexuality are in evidence here but in a chaotic, patternless form. One can speculate that she is ill because of conflicts, repressions, fixations, and regressions represented here. However, it can also be postulated that this chaotic content and behavior are symptomatic, that the personality is relatively amorphous without sufficient integration to warrant discussion in terms of fixation and regression. At another hospital she was given a diagnosis of psychopathic personality with pathologic sexuality. Our studies revealed definite evidence of the primary symptoms of schizophrenia with a superstructure of many neurotic symptoms and mechanisms. A diagnosis of pseudoneurotic schizophrenia was made. No change was noted in psychotherapy or in the clinical status in association with the drugs.

A woman with a severe obsessive-phobic-hypochondriacal syndrome was studied under the influence of barbiturates of various types on eight occasions; methamphetamine and d-LSD 25 were each given twice and she received mescaline, morphine, and tridione once. There was variable relaxation with the barbiturates and tridione and a dyspho-

ric response to the other drugs, characterized by elaboration of obsessional ideas and phobias. There was a minimal perceptual response to the hallucinogenic drugs, though she did report seeing her baby's face and hearing it cry while she was resting in bed two hours after receiving one of the barbiturates. Another woman with the same symptom constellation reacted to mescaline as a little child. She wanted to be held in the nurse's arms, to kiss her hand and would scream if left alone for a moment. She pled utter helplessness and terror though she had only minimal perceptual phenomena.

These excerpts from a large number of extensive and intensive studies may serve to demonstrate certain aspects of the range and variety of reactions to drug administration. The psychodynamic features of the drug reaction are consistent with the personality structure of the patient, but the particular material which the patient will "select" in a given drug experiment is not predictable in our experience.

DISCUSSION

A number of the psychodynamic changes after drug administration, which have been attributed to various drugs, appear to be more closely related to a specific personality reaction to an equilibrium-disturbing stimulus. The subject is rendered more vulnerable by the effects of the drug in distortion of autonomic functioning, perception, thinking, and emotional regulation. His reaction can be seen as consistent with his personality structure though his psychological response to a particular drug, or to subsequent administration of the same drug may vary. He may react with little anxiety, regard the experience as ego-alien, and maintain personality organization or ego integration with only a minimum need to mobilize special defenses. It is not clear how this is accomplished; it might be attributed to ego-strength, predominance of the conscious over the unconscious mechanisms or systems, a lack of unconscious conflicts, or to other factors. One can say that this kind of reaction is consistent with mental health but one is reluctant to conclude that such responses are diagnostic or prognostic tests of mental health. A more extensive and intensive study of normal control subjects is indicated.

Most subjects experience much anxiety in the mescaline and d-LSD 25 experiments. It is not clear whether some of this is primary anxiety, a direct effect of the drug on the central nervous system, or whether it is all reactive anxiety, in response to other apparently direct effects

of the drug. There may be marked disorganization of functioning in all spheres and again it is not understood to what extent this is a direct drug effect or a response to anxiety. The disorganizing effects of anxiety are well known and certainly play an important role in these reactions. The other phenomena like frightening or gratifying hallucinations, depersonalization, and regression may be viewed as defensive reactions to anxiety, as products of disorganization or both. There have been statements that the personality is laid bare or that one obtains a true picture of the personality through the administration of some of these drugs.^{5,14,43} It would seem more accurate to say that one obtains *another* view of the personality. This might be illustrated by the analogy of stripping layers of an onion, but unevenly and to different depths. It is unlikely one gains a view of the personality barren of defenses, but rather the second and third lines of defenses or fragments of these are revealed. These are more primitive, archaic, and gross. There seems to be a general assumption which has never been adequately validated, that the concepts of ego organization and defense mechanisms are applicable in a similar way to the understanding of normal, neurotic, schizophrenic, and organic psychotic behavior as well as to behavior following administration of various drugs.²⁵ Much of the emotional feeling and the colorful content produced under the influence of drugs is designated as repressed material which has been released and which is equivalent in meaningfulness to the content of psychoanalysis with attendant therapeutic value. Depending on the content and the investigator's point of view, the material has been regarded as an unadulterated product of the unconscious; a screen memory or a compromise formation comparable to the manifest content of a dream, from which the latent content can be analyzed.

Is it a valid assumption that all such content was necessarily repressed prior to drug administration? An adequate pre-drug study should reveal the important material which is conscious, and survey the preconscious content and the subject's ability and willingness to communicate these. Then according to the assumption, any new material would represent a release of repressed content. Is it possible that the drug-induced productions are a more primitive conscious or preconscious representation of those reported in the drug-free state or that still other explanations may obtain?

The relationships between anxiety, repression, and productivity are

quite complex in drug-free investigations. It has long been accepted that repression is caused by anxiety and is the primary technique of defense against anxiety.¹¹ There is a strong resistance to conscious recognition of repressed material and the work of psychoanalysis deals with this resistance and with the transference. Conscious anxiety and domination by symptoms often interfere with productivity and the treatment process. Amobarbital and other narcotizing drugs may have a relaxing effect with decrease or elimination of anxiety or other symptoms. With the drug effect many patients are more productive, sometimes of new material or an elaboration of drug-free material. This is said to be release of repressed material. But what happened to the resistance? We can observe the relaxation, the diminution of social inhibition, and the increased productivity. But is the productivity directly associated with the relief of anxiety, is the resistance diminished or eliminated through the relief of anxiety, or is the drug affecting the unconscious resistance directly, neutralizing it and releasing the repressed material? With amobarbital all the possible combinations of relaxation or dysphoria, increased or unaltered productivity and new or drug-free material are seen, nor is a given patient's response necessarily consistent on repetition of drug administration. Methamphetamine in moderate doses often produces a feeling of well-being with temporary loss of symptoms and increased productivity and may have the same effect as amobarbital. Thus the application of a sedative or a stimulant may be attended by relaxation and increased productivity. The relation of this to repression-resistance is not clear.

There is a reasonable correlation between the quantity of emotional disturbance and the productivity of personality-specific material following administration of mescaline and d-LSD₂₅. In such subjects anxiety is often increased and symptoms are intensified or produced. Productivity may be enhanced qualitatively or quantitatively. Again the content is often called repressed material.^{2,6,7} Thus the administration of pharmacologically *different drugs which have different physiological and psychopathological effects* may be associated with the release of material which has been designated as repressed by many investigators.

It is also stated that the reaction to drug administration may be regressive.^{3,25,26,37,47} In psychoanalytic terms, regression may be said to have a phylogenetic connotation and an ontogenetic connotation. In discussing sleep and dream formation, Freud¹¹ notes that older and more primitive forms of activity are manifested such as primitive

symbolic representations, which we may call a phylogenetically lower order of functioning than in the waking state. The return to an ontogenetically earlier pattern of satisfying behavior on being confronted with frustrations in the present is the more usual connotation of regression. Though these two types or aspects of regression occur together they may possibly occur separately at times, or one is markedly predominant. Phylogenetic regression induced by drugs may influence production of ontogenetically regressive material. Whether regression in the phylogenetic sense is always psychodynamically defensive is not entirely clear. Under the influence of drugs some of the behavior and content often termed regressive may be phylogenetically more primitive, i.e., release phenomena in the neurological sense, rather than return to an earlier level of satisfaction. Hilgard¹⁵ discusses the possibility of differentiating regression from primitivization; a turning away to less mature patterns of responding which are not necessarily related to the personal biography.

How does phylogenetic regression affect repression? Freud, in discussing dream formation,¹¹ has stated: "It is as much the result of the archaic regression in the mental apparatus as of the demands of the censorship that so much use is made of the representation of certain objects and processes by means of symbols which have become strange to conscious thought." Little attention has been given to the influence of regression in this sense on the censorship or to the effects of the relative strength of the one on the other. In dream formation repression-resistance is decreased, permitting repressed content to be expressed through the dream work in the manifest dream. Reactions to drug administration may include experiencing apparently repressed childhood or more contemporary scenes; childhood or more recent phantasies or apparent compromise formations comparable to the usual dream. In other reactions there may be little content and a dramatization of infantile helplessness, as noted in the woman who wanted to be held and kissed by the nurse. Despite reasonable control of the variable factors, some patients respond in a more or less stereotyped pattern to repeated administration of the same or different drugs. Others follow a pattern in a more general sense but there are notable differences in the regressive and resistance phenomena which may or may not be related to release of repressed material.

One can point to certain theoretical differences between disorganization of thinking, feeling, and action on the one hand and the phylo-

genetic and ontogenetic aspects of regression on the other. Regression may be characterized as having a certain organization and harmoniousness as can be noted in sleep and dreaming and in some patients who have emotional illness with regressive phenomena. There is integrated functioning on a given level or among several levels. Content and affect have some meaningfulness if they can be adequately understood. Disorganization would be a relative lack of integrated functioning; a random, disharmonious discharge of content, feeling, and motor behavior which is essentially meaningless. Both types of phenomena are probably seen in certain deteriorated schizophrenic patients and can be observed in some patients after drug administration. Though such a differentiation can be made theoretically it is probably not possible clinically to see the disorganization in pure form, but rather a mixture of this and regression. Some discrimination would then be necessary in evaluating the subject's clinical state and the quantity and quality of his behavior in drug-free and drug-intoxicated states.

Clinical and psychodynamic observations suggest that the human organism has only a limited range of reactivity. In all probability a given subject has a fairly definite threshold to stimuli precipitating anxiety,¹ disorganization, regression, and various other defensive maneuvers. Evidences of this are seen in everyday practice and in responses to drug administration. Some of the interrelationships of these phenomena have been noted. Other aspects of this reactivity may be noted in considering the vicissitudes of some of the other defensive mechanisms of the ego under the influence of drugs. The investigation of these more observable mechanisms is pertinent in evaluating the effects of drugs on repression—the most important defense mechanism which is least available to direct study.

There is some question as to whether the concept of transference and methods of dealing with it in psychoanalysis are equivalently applicable in drug-intoxicated subjects. Under the influence of a drug emotionally important figures in the subject's life may be perceived in hallucinations; someone in the room other than the therapist may be misidentified as an emotionally important person or the therapist may be. In psychoanalysis one can say that transference is a misidentification, but it is more than that. Transference may be termed a *pars pro toto* identification of the analyst with some member of the patient's original family constellation. Attitudes, affects, and reactions are displaced; the therapist becomes their object and can observe

the situation at first hand as well as analyze those aspects which impair the progress of treatment. Transference phenomena in psychoanalysis usually take place on a conceptual level rather than a perceptual level and the differentiation should be noted in discussing productions of subjects who have received drugs. Some concept of the emotionally charged object must underlie the false perception or the perceptual misidentification but the whole process strikes one as being much more simple and primitive than that which obtains in analysis. The necessity or even the possibility of transference to the therapist may be said to be obviated to the extent that the important family member appears in the hallucinatory experience or a random person is selected as the object of displacement. If there is a well established therapeutic relationship the drug experience is a notable interruption in the usual procedure and may temporarily jeopardize the positive transference, while underlining the negative transference. In anticipation, during the drug experience or retrospectively, the experience may be viewed as either a wished-for or dreaded sexual attack, a further proof of the magical or malignant power of the therapist. This can facilitate a nurturing or a release of hostile feelings toward the treatment, the therapeutic value of which would need to be demonstrated. The relationships between transference and regression in psychoanalysis and in drug-intoxicated states warrants attention, but space limitations precludes such considerations here.

Is it possible to validate psychoanalytic or psychodynamic concepts through the use of drug studies of this type? Kubie,²⁵ who has written extensively on this subject, remarks that "states of induced and controlled dissociation" offer a good approach to the study of relationships between conscious and unconscious processes. Various techniques of inducing such states are used, including hypnosis and drugs, some of which produce definite alterations in the sensorium and deliriod states. Relationships between conscious and unconscious levels of behavior are said to be self-translating, and complicated transference phenomena become transparent. The induction of drug-intoxicated states, with or without gross impairment of consciousness, is a simple procedure but the control of such states is a very complex issue. One can modify drug dosage for a given patient and antidotal drugs may be used. This is the extent of our ability to control the situation aside from efforts at psychological manipulation. As has already been noted, the reactions of a given patient are variable, unpredictable, may include

a great deal of colorful material, or be quite comparable to drug-free interviews.

The use of drugs in psychodynamic investigations shows promising possibilities. However, this approach is more on the order of a new frontier than a familiar and developed territory. With psychoanalytic technique, one can observe many of the aspects of the relationships between conscious and unconscious processes and the defensive maneuvers of the ego. The administration of drugs may reveal these aspects as well as other aspects of these relationships and maneuvers. It is doubtful that they render the unconscious, the repression, or the transference transparent. In some patients there are productions which resemble repressed material and dramatizations of the classical issues of conflict. However it must be emphasized that drugs may be useful tools for the validation of psychoanalytic theory, in contrast to utilizing psychoanalytic theory to validate the reactions to drugs.

The great value of drug administration as a research tool lies in the fact that drugs induce phenomena which often bear a close resemblance to those we observe in clinical and therapeutic work. For most of the acutely produced reactions, there are antidotal drugs which attenuate or eliminate them rapidly. Affect, mood, content, perception, and behavior can be affected in various ways and then the baseline condition can be approximately reinstated in minutes. The hallucinogenic drugs may produce a reaction resembling schizophrenia or there may be dream-like states. In any event rapport can be maintained with the patient and the reaction can be scrutinized. Certain aspects of our concepts of symptom formation, dream formation, de-personalization phenomena, conscious-preconscious-unconscious relationships, repression, regression, and some of the other mechanisms of defense can be tested, better understood and modified as indicated. Some light may also be thrown on our means of dealing with resistance and transference in psychoanalysis. However, the basic rule pertaining to free association may not be applicable in the strict sense in drug-intoxicated states. One can ask the patient to report everything that comes to mind but there are difficulties in terms of thinking disturbances, perceptions shifting too rapidly to be fully reported, inability to find adequate vocabulary for experiences, domination by emotion, and suppression or conscious withholding. Most of these difficulties resemble those which obtain in psychoanalysis and we have techniques of obviating them. Are the same techniques useful in drug-intoxicated states or must new ones be devised? Resistance and transference are

altered with drug administration and again technical modifications may need to be developed in order to facilitate our investigating them adequately.

The therapeutic value of these drugs is a highly controversial issue except for a few specific and established uses of the barbiturates. There are reports of remarkable results with methamphetamine, amobarbital, mescaline with chlorpromazine, and d-LSD₂₅ used once or in serial administration.^{7,26,40} Other investigators have been less optimistic.^{1,3,8,42} The positive results are usually attributed to psychotherapy facilitated by the drug or to psychodynamic change in association with the drug experience. The description of the patient material, the procedure and the method of evaluating results are not entirely clear in many reports. Usually there is a relatively short follow-up period and the long term results are not known.

The evaluation of the effects of psychoanalysis and psychotherapy is a difficult problem. An appraisal of the mechanisms which bring about positive results is even more complex. To assess the therapeutic efficacy of drug-expedited psychotherapy, one must account for all the other variables introduced by drug administration. It may be that some of the questions as to the psychodynamic effects of drug administration must be answered before the therapeutic value can be determined and well understood.

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