

substances in the daytime when their energies are more in harmony with the rhythms of my body, and I feel that way about mushrooms, too. Is it possible, I wondered, that the Indian habit of eating mushrooms at night is not so traditional as it appears but dates back only to the arrival of the Spanish and the persecutions of native rites by the Church?

After several hours, we wandered back through the imperturbable Brahma giants, across the river, and to the road where we had left our truck. Another nice thing about the mushrooms is that they wear off, gently, after four to six hours—in many ways a much more convenient duration of action than the twelve-hour trips of LSD, peyote, mescaline, MDA. We had some extra mushroom still with us, and these we dried for later use. (The can also be preserved by packing them in honey.) Some days later, on the deserted shore of a lake in the eastern Andes, near the border of Ecuador, a few of us shared these dried mushrooms and again felt their magic. But though they still tasted good, it was not nearly so pleasant to eat them this way as fresh.

I strongly believe that psychedelics merely trigger or release certain experiences that originate in the human nervous system and that one can learn to have these experiences without taking drugs. But I also believe that psychedelic substances are useful in certain stages of development. And I think that when used properly they have enormous potential for bringing about medical as well as psychological cures of morbid conditions. Of all the psychedelics I am familiar with, none approaches mushrooms in overall desirable qualities, such as ease of consumption, lack of toxicity, and manageability of effects.

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ON THE EFFECTS AND USES OF PSYCHEDELIC DRUGS

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ABSTRACT

There are several requirements that an adequate scientific study of the effects of psychedelic drugs should fulfill. It should consider, within the same frame of reference, researches ranging from the biochemical to the behavioral to the experiential. It should resolve inconsistencies that arise from such facts of life as differences between experimental methodologies. It should explain the principal psychodynamic effect of psychedelic drugs—the disorganization of familiar response patterns that have protective, defensive and "reality-oriented" functions. It also should provide a perspective for utilizing the power of these drugs as well as for treating adverse drug reactions. The purpose of this paper is to consider some of the facts and concepts which pertain to these issues.

Points of View

The prudent use of LSD and other psychedelic substances can contribute in significant ways to our understanding of basic psychological processes. These drugs also can have positive emotional effects. Most individuals who have taken them with adequate preparation will agree. However, psychedelic drugs also can have destructive effects. There is no doubt of it. These drugs are extraordinarily powerful. How we regard them—our point of view in relation to them—determines to a significant extent whether their effects are positive or negative. The tendency among many individuals is to regard psychedelics as extremely potent drugs that cause wild manifestations. The drugged individual's awareness is flooded with fantastic sensation and ideation and powerful emotions which result in his temporarily "losing his mind."

There is another point of view, however, which permits the emergence of a different understanding. The emotional and mental events which surge into

awareness have not been put there by the drugs; they have, in effect, been let out. A properly trained person can assist the psychedelic drugged individual to relate to these "new" mental events in meaningful integrative ways. According to the latter point of view, it is first necessary to give up control over the non-conscious mind in order to establish contact with it; it is then possible to integrate these extraordinary mental events within the framework of ordinary waking consciousness. This emphasis on experience is not a radical departure from the theories of Freud, Jung, Sullivan, etc.; it is merely an addition to them which has become possible with the discovery of the psychedelics.

Disturbing to many, however, is the idea of "giving up control" or "losing control" which often conjures up thoughts of becoming "crazy." This fearful impression has been reinforced by publicized accounts of individuals who have taken them and later have required psychiatric hospitalization. Actually, long-term adverse reactions are common only among individuals who have taken these drugs without adequate supervision and in surroundings that are less than appropriate. Nevertheless, a fearful attitude in regard to the madness-inducing effects of psychedelics is a common one among mental health professionals and laymen alike. This attitude has served to distort communications regarding the drugs' potentially positive, constructive uses.

Neurophysiological Bases

Drugs that act on the brain appear to do so through biochemicals involved in the transmission of electrical impulses from one part of the brain to another. Changes in the levels of two neurochemicals, norepinephrine and serotonin, have been shown to be closely linked to LSD ingestion. It has been suggested that LSD first acts at certain receptor sites where serotonin is concentrated causing norepinephrine to be released or utilized. Subsequent shifts in the dynamic equilibrium and locations of serotonin are directly attributable to the influence of LSD [17]. Intracarotid injection of serotonin in cats in doses as small as one or two gamma produces synaptic inhibition—that is, reduced electrical activity, in the visual cortex [33]. The fact that this highly potent substance occurs naturally in the brain suggest it is part of a synaptic inhibitory mechanism. LSD and mescaline also produce inhibition in the visual cortex.

EXCITATION-INHIBITION BALANCE

Purpura [36], working in 1956 with LSD-drugged cats, reported the occurrence of inhibition from the primary sensory cortex to the association cortex and also in the non-specific sensory system. Conversely, he observed increases in electrical activity (excitation) in the discrete sensory pathways leading to the primary sensory cortex. The substantive evaluation of this effect had to wait until other facts and methods became known. Early research was

very much confused regarding the relationships of experimental parameters to one another, and so data reported from different laboratories were often apparently contradictory—at least they generated contradictory conclusions. It appears now that Purpura's effect provides a parsimonious base for ordering the literature on behavioral and experiential effects of psychedelic drugs. Purpura anticipated this possibility himself. He wrote: "Without an adequate knowledge of the organization of excitatory and inhibitory components operating in any given evoked (electrical) response, further efforts to clarify the mode of action of pharmacological agents will of necessity remain basically unsatisfactory."

The behavioral significance of the effect observed by Purpura is a straightforward one. There is a relationship between LSD-induced excitation in specific primary pathways receiving incoming sensory signals and *hypersensitivity to low intensity stimulation*. There is a concomitant relationship between LSD induced inhibition in the non-specific sensory system and cortico-cortical association pathways and *increased tolerance of high intensity stimulation*. This is a paradoxical relationship. Psychedelic drugged subjects who are hypersensitive to stimulation at very low stimulus intensities appear able to tolerate painful stimulation more than non-psychedelic drugged, nonsensitive subjects. The association of hypersensitivity and hyposenitivity in the same individual suggests a complex neural mechanism for effecting differential adjustments to high and low intensity stimulations. Such differential responsiveness depends upon the complex pattern of excitation and inhibition in the nervous system—the momentary adapted state of the organism.

This formulation allows for consideration, within a common theoretical framework, of sensory-physiological research and research on the subjective reports of psychedelic-drugged subjects. It is offered as an interpretation of relationships between complex events occurring in different locations of the brain and certain basic characteristics of sensory and perceptual functioning [43].

SENSITIVITY TO STIMULATION—A PARADOX

If you examine the literature on sensory effects of psychedelic drugs—LSD, mescaline, psilocybin—in studies in which subjects are capable of attention to experimenter-designated stimuli, you find most often behavioral indications of hypersensitivity to stimulation [43]. This kind of laboratory observation accords with subjective reports that psychedelic-drugged subjects' sensory experiences are intensified and that they are aware of a level of sensory experience which they never were before.

Paradoxically, these subjects also evidence an increased tolerance for painful stimulation. This paradox is explained in terms of a "differential excitation model," that is, psychedelic drugs act differently on different parts of the brain. There is inhibition in the diffuse sensory pathways and in cortico-cortical areas, and analogously, attenuation of the experienced intensity of painful stimulation.

Also there is an attenuation of attentiveness to complex perceptual and cognitive stimuli and a resulting deficit on measures of complex performance.

There are reports which at first glance appear to be at odds with this formulation. Further examination of the methodologies employed indicates that the conclusions in these contradictory reports are erroneous [43]. However, such reports do spotlight the importance of very carefully considering methodological details: How the experimenter arranged his stimuli; How he prepared his subjects (humans and nonhumans); What drug dosage was used? What were the effects on different types of animals within a particular species?

For example, we have been studying individual differences in the augmentation or reduction of the experienced intensity of stimulation, a basic dimension of "paying" attention [44]. We have found that certain subjects who attenuate the experienced intensity of high intensity stimulation also are unusually sensitive to ordinary intensity stimulation. There are EEG averaged evoked response brain-wave characteristics which are directly associated with this sensory response pattern. We have observed quite similar individual differences in the averaged evoked response patterns of cats [19].

We knew that different sensory-physiological human types have different reactions to psychedelic drugs and our data with cat subjects suggest that comparable individual differences in drug reactions occur in animals. These differences need to be considered when evaluating research data. We need to be able to identify types of animals with different neurophysiological response characteristics, such as different excitation-inhibition balances, and then examine the ways in which they explore their surroundings differently, the intensities with which they react to sensory stimulation, etc.

It is an important fact that individual differences in response to sensory stimulation are observable during the first days and months of life. These are correlated with individual differences recorded several days later, several months later, from several months to a year later, and from several months to several years later [3, 5, 15]. These studies have suggested that each organism comes into the world with a particular way of *organizing* and *integrating* sensory information and that these tendencies or response dispositions exert major effects on subsequent development. They are significant determiners of the kind of information processor each of us will grow up to be. Underlying these statements is an emphasis upon temperament and the importance of a hereditary basis for the study of behavior and experience. I conceive of the limits of each individual's plasticity, the extent to which he can be modified by his environment, as being, in effect, defined by such biological givens as the excitation-inhibition balance in his nervous system. The way an individual's nervous system is "wired" to receive information determines what sort of a universe he appears to himself to inhabit.

For example, in *Prediction and Outcome*, Escalona and Heider [15] reported data suggesting that the later psychological adjustment of a hypersensitive infant

is likely to be quite different from one who is not hypersensitive. One of their more provocative findings concerns the relationship between a measure of overall sensory threshold in a group of one to eight month olds and the degree of imagination which they manifested several years later. Children who as infants had high sensory thresholds were, in their play activities, found to be principally concerned with concrete, non-imaginary playthings. In no case did a child who was a high sensory threshold infant demonstrate a high degree of imaginative-ness. In contrast, more than two-thirds of children who as infants evidenced low sensory thresholds, manifested obvious concern with imaginary playthings, companions and fantasy situations. In research with adults, important relationships have been demonstrated between sensory threshold levels and a number of different kinds of personality attributes [16, 27, 35, 47]. For example, individuals who are suggestible, the way LSD drug subjects are suggestible, tend also to be hypersensitive to low intensity stimulation. A number of traits which describe LSD-drugged subjects also are applicable as descriptors of hypersensitive non-drugged normal individuals.

The above statements imply a framework for viewing sensory parameters of behavior as *the* basis of a developmental psychology as well as of an abnormal psychology. Once the sensory bases of behavior from infancy on are woven into a model of psychological functioning, then we can substantively study not only subjects with verbal ability but also pre-verbal children, mute and disorganized psychotics, animals, and others. All of these subjects do emit sensory-electro-physiological response indicators which refer to how they make sense out of their environments. Our researches and those of other investigators suggest that this approach is no longer merely a pipe dream. Computer-controlled techniques for diagnosis and evaluation, once rooted in a neurobiology of sensory information processing, are being developed now [7, 8, 19, 41, 44, 45].

Crisis Induction: A Perspective for Conceptualizing Therapeutic Effects of Psychedelics

The principal effect of psychedelic drugs on behavior is to disorganize temporarily those habitual response patterns that have defensive and reality-oriented functions. When these response patterns no longer operate as they formerly did, unconscious emotions and images surge into the individual's field of attention. In effect, a crisis is precipitated. That is, there is a sudden and radical alteration of the field of social forces in which the individual exists, and self-expectations and relationships with others are changed [30].

A brief consideration of the significance of crisis in normal mental and emotional development is helpful in understanding what happens under the influence of psychedelic drugs.

In the course of life all people experience a number of developmental and accidental crises. In these situations ordinary problem-solving techniques, which

are learned in the course of socialization, fail to solve a basic life problem (such as occupational or sexual inadequacy, adjusting to the loss of one's parents or lover, coping with religious or moral dilemmas, assuming the responsibilities of parenthood). Increased tension, unpleasant affect, and disorganized behavior are manifest and a highly subjective orientation to the crisis situation is adopted. Several writers [13, 14, 30] have emphasized the positive significance of life crisis situations. Dabrowski [13] has termed these crisis reactions "symptoms of disintegration"; he regards them as preconditions for interaction at a higher level of personality development.

Just as is the case in various developmental crises such as puberty and sometimes the climacteric, many mental disorders may be the cause as well as the symptom of positive development of the individual, bringing increasing awareness both in retrospection and in prospect even though there is disadaptation to the present situation. . . . The stresses of life and the conflict of disadaptation may activate attitudes which until then had no chance of revealing themselves.¹

In these situations, there may occur a spontaneous, sometimes profound, reorganization of an individual's way of "making sense" out of his life problem.

When individuals are confronted with apparently insoluble problems, habitual problem-solving responses are discarded. The emergence of alternative perceptual-cognitive perspectives is facilitated by profound neurochemical changes in the nervous system which modify the familiar patternings of sensory input. Within this context, psychoanalytic and psychodelic psychotherapies [9] can be described as high-powered, crisis-induction techniques; their aim is to radically re-organize perceptual-cognitive perspectives in order to facilitate the emergence of solutions to personal problems.²

¹ Italics J. S.

² It is interesting to note that chlorpromazine, which so often has been used to mediate adverse LSD reactions, has a number of properties which interfere with problem-solving activities. On performance measures which require active attention to novel and significant details, chlorpromazine interferes with effective information processing [22]. In animals, chlorpromazine is found to interfere with sensory discrimination [29] and to require a more intense stimulus to be given in order to produce behavioral arousal. In certain kinds of schizophrenic reactions, in which the problem-solving endeavor is a vitally important one, an exacerbation of psychosis takes place when phenothiazine treatment is employed [18, 44]. Exacerbations of deviant behavior also have been reported when chlorpromazine has been used to treat adverse reactions to LSD or amphetamines. Animal studies have corroborated such clinical impressions [6, 20]. Thus chlorpromazine may not tranquilize but may serve to enhance a bad psychedelic experience—and you never know when it will happen because the effect is dependent upon the interaction of the dosage of chlorpromazine with the dosage of the psychedelic. When you are dealing with people who use it outside of an experimental setting, you usually don't know what dosages of psychedelic drugs have been ingested.

Therapeutic Uses of Psychedelic Drugs

Any research on the therapeutic effects of psychedelic drugs must overcome the limitations to which all therapy investigations are subject. These limitations are formidable, and most studies have been vulnerable to some criticism because of them (e.g. Caldwell, 1968; Salzman, 1969). Nevertheless, the results of a number of reports have suggested that, appropriately used, psychedelic drugs may be valuable therapeutic agents. Compelling studies of the effects of LSD on the psychological adjustments of terminal cancer patients have been carried out. In the study by Pahnke, Grof and their colleagues [34], approximately two-thirds of a sample of 35 patients administered LSD reported lessened depression, anxiety, emotional tension, fear of death and amount of medication required for pain. In two large scale clinical studies of terminal cancer patients, Kast [28] demonstrated that LSD attenuates pain to a greater extent than such analgesics as Dilaudid and Demoral. Reports regarding the analgesic effects of LSD have been substantiated by other researchers with non-patient subjects [23]. Most of Kast's subjects reported not only decreased pain, but also a general lightening of mood, a feeling of somehow getting new kinds of meaning into their lives that didn't exist before, and a capacity to sleep through the night for at least several nights.

Certainly an important consideration in the treatment of terminal patients is that they be able to experience not merely the bleak concerns of the last days, but alternatives which are less fear-evoking and more compatible with a religious or relativistic view of life. In my experience with internists who treat terminal cancer patients, there often is an unpleasantness that they try to minimize in themselves, as well as in their patients. This kind of unpleasantness would be attenuated significantly if LSD were available as a clinical treatment procedure.

LSD, used therapeutically, has been found to have positive effects in psychiatric disorders in which there is a known sensory abnormality. In infantile autism, there are a number of peculiarities of sensory behavior, such as hypersensitivity to stimulation and a hyporesponsiveness to pain stimulation and an over-focused perceptual responsiveness with which LSD interferes. Children with infantile autism who are treated with LSD become more, not less, reality oriented [46]. In research with psychopathic individuals, Shagass and Bittle [39] reported these individuals to be markedly helped by one 200 microgram LSD experience. (Within a period of six months to a year after this experience, some individuals began to resume their abnormal pre-treatment behavior patterns.) Here's [21] experimental work on psychopathy indicates that individuals with psychopathic disorders have characteristically high sensory thresholds. It is as if these individuals, who are notoriously difficult psychotherapeutic problems, just can't get the information in, nor can they mobilize enough energy to participate in a psychotherapeutic relationship. Apparently LSD facilitates more effective information registration in such clinical cases. Clinical studies with LSD on these

problems should be continued. Psychedelics also are an extraordinary tool for more definitive mapping of the central nervous system.

Caldwell [9] summarizes a number of psychotherapists' work which indicates that properly used LSD is an extraordinary therapeutic tool, though it is not recommended for those psychotherapists who are uncomfortable with blatant psychopathology. (If I am under the influence of LSD, and my psychiatrist regards my imaginings as bizarre, ugly or disgusting, what I will probably do is to adopt a controlled posture which necessarily *limits* my contacting and resolving whatever it is that might be disturbing in my awareness. On the other hand, if I am working with a psychiatrist who is receptive to my behavior and imaginings and who regards them simply as psychic facts of life, then I am in a much better position to work through just those things that are dis-easing. Not all psychotherapists can do this kind of work.)

Consider Betz' and Whitehorn's research which suggests that certain kinds of individuals find it difficult, almost impossible, to work effectively with psychotic or psychotic-like upheavals [40]. Others are particularly good at relating to the bizarreness of patients who are, so to speak, dipping in to or living in the unconscious; but these therapists may not work as well with the more common neurotic disorders. This is an intriguing finding and it needs to be explored further. It may turn out one day that there will be a psychiatric facility for designating "the right psychotherapist for the right patient." It is time to begin to appreciate the limitations not only of our patients, but also of our psychotherapists. Psychologists and psychiatrists have not given the proper amount of attention to how therapists differ: Who are the listeners, the receptive ones, who are also oriented to the psychological chaos in positive, constructive ways? We've got to learn how to identify them and direct them to acute schizophrenic and psychedelic-drugged patients so as to facilitate the "positive disintegration" of these individuals [13].

Dangers of Psychedelic Drugs

The issue of the "dangers of psychedelic drugs" is important because of the continued negative reactions of certain individuals who, directly or indirectly, determine whether or not psychedelic drug research can be done. Their judgments all too often are based upon inadequate research reports or upon the reports of clinicians who have not done such drug research, who have not evaluated in a systematic way what goes on in the laboratory when these drugs are used, and who at times have a tendency to engage in sweeping generalization and bad inference.

CHROMOSOME ABNORMALITIES

A significant number of published reports have indicated no differences in chromosome abnormalities between users and non-users [4, 11, 24, 26, 32, 38,

49]. In addition, Jarvik [25] notes that there are numerous unpublished studies besides the published ones indicating no evidence of increased chromosome abnormalities in any subject when pre-LSD baselines are taken into account. The conclusion reached by one team of scientists in the *Journal of the American Medical Association* is worth noting: "We feel that our data (regarding chromosome breakage) and those of others do not appear to give any stronger contra-indication concerning the continued use of LSD-25 in experimental therapy than do those risks established for other therapeutic and diagnostic procedures; in some instances LSD would seem to be far more innocuous" [24]. The initial disturbing reports published by Cohen, *et al.* [12], that adding LSD-25 to cultures of human leukocytes increases chromosome abnormalities have been over-dramatized; Jarvik [25] notes the results of one unpublished study in which LSD and aspirin "were equally effective in producing chromosome breaks, all doubling the control rate."

BIRTH ABNORMALITIES

A couple of animal studies have indicated birth abnormalities associated with psychedelic drug ingestion. In a carefully controlled study commissioned by the National Institute of Mental Health, another researcher used a much larger sample of animals and did not observe this relationship [1, 2, 51].

PSYCHOLOGICAL ABNORMALITIES

Studies of psychological abnormalities related to psychedelic drug ingestion are of two types—those reported by laboratory researchers and those reported by clinicians who have not studied the drug under controlled conditions. In general, the two types of reports bear little resemblance to each other. High rates of adverse drug reactions are reported by mental health professionals who work in situations in which it is especially difficult to control drug effects. They treat individuals who have taken drugs and have become disturbed. Their tendency is to report abnormally high incidences of adverse side effects associated with drug abuse or ingestion. For example, "The seriousness of these side effects is documented by successful suicides, serious suicide attempts, prolonged psychoses and even a homicide" [50]. On the other hand, the reports of researchers who administer these drugs under carefully controlled conditions are quite different. For example, on the same issue of suicide, MacLean [31] states: "no instances of suicide could be attributed even by a most liberal interpretation of the circumstances to the drug induced experience in my practice." MacLean's practice included work with hundreds of high-drug-dose subjects. In an earlier report he described how he considered the experience of his high-drug-dose subjects:

The experience is allowed to proceed without chemical interruptions (such as chlorpromazine) since in our experience, no uncontrollable or

deleterious situation has arisen that would warrant such termination. On the contrary, reactions which may be viewed with alarm by some workers, may, in fact, indicate the crisis necessary for a breakthrough of defenses. . . . For the majority of patients the experience includes: feelings of bodily change and physical plasticity, heightened perception of color, sound and texture, age regression and abreaction, depersonalization, transference, altered frames of reference, fresh insights into motivation, change in goal and value orientation. The net effect of the experience is to facilitate new self-concepts and appreciation of reality, i.e., a process of "reeducation" embracing conventional therapeutic mechanisms and some as yet only tenuously explained.

Another important point. Clinicians and researchers differ in the ways they regard abnormal behavior and in how they relate to it. For some, abnormal behavior is pathological and is to be treated; for others it is to be appreciated and perhaps to be temporarily encouraged. The emphasis of the psychopathology-oriented clinician, who routinely treats LSD reactions with Thorazine, is to attempt to suppress the extraordinary experiences of his patient rather than to regard these experiences in a meaningful way. In contrast, there is the emphasis of the clinician who may encourage even greater movement into the depths of the temporary disorder. It appears that these differences in approach are rooted in basic attitudinal and personality differences among clinicians.

This brings me to a consideration of an issue in psychedelic drug research and treatment which I refer to as "bad inference and sweeping generalization." The inference of a causal relationship between any two events, such as CAUSE: LSD ingestion and EFFECT: suicide, is not valid simply because a relationship *appears* to exist between the two events. This is especially important to consider when drawing conclusions from the results of studies of few subjects. Also the relationship between a suggested cause and effect must stand the test of a repeated investigation before it can be accepted as fact. Suicide is a good example because it is known that suicide is a high ranking cause of death among U.S. adolescents age 15 to 19 [48]. Such a fact does not seem to interfere with medical reporting, in explicitly causal terms, of single LSD-related suicides in young persons. It should be obvious that a more restrained attitude is necessary in appraising the adverse effects of psychedelic drugs. A survey by Clark and Funkhauser [10] in *Psychology Today*, makes the point that there is a large information gap between experienced drug researchers and clinicians whose only experiences with the drugs have been with individuals who come into treatment facilities disturbed and are in no position to relate their experiences in a rational manner.

I would like to conclude with a reiteration of the need for the psychiatric community to adopt a more analytic, balanced attitude regarding some of the issues considered here. There is no doubt that the power of psychedelic drugs is

great. So is the power of energy sources like radioactive cobalt or laser beams. Their improper use could result in serious damage to the people who are exposed to them. Nevertheless, research with these energy sources has gone on and has resulted in a number of contributions to various fields of medicine and to other sciences. The problems which face us with psychedelic drugs center around the articulation of a methodology for utilizing their power in constructive ways. Safeguards comparable to those developed in atomic medicine may have to be employed. In a sense we are dealing with the atomic power of psychiatry. Properly applied, these drugs have the potential to contribute in a major way to the field of mental health.

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EVALUATION OF THE REPORTED EFFECTS OF MARIJUANA USE

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ABSTRACT

The purpose of this research was to test the hypothesis that the effects of marijuana smoking are evaluated more negatively by JS when identified as the effects of marijuana than when identified as the effects of a new pharmaceutical. The results produced an interaction effect such that several pre-experimentally rated positive effects were rated significantly less positive when they were identified as marijuana effects and several pre-experimentally rated negative items were rated significantly more positive when identified as marijuana effects than when identified as pharmaceutical side effects. In addition, marijuana use or nonuse, amount of marijuana use, and favorable attitudes toward legalizing marijuana were all found to be correlated with positive evaluations of effects of marijuana smoking.

Most of the studies of attitudes toward marijuana have concentrated on global attitudes toward the drug itself, rather than attitudes toward specific effects of marijuana smoking. This is true of studies whose major purpose was to assess attitudes toward marijuana [1, 2] as well as studies which have investigated attitudes toward marijuana incidentally to some other major focus [3]. Table 1 presents the major findings of some of the recent studies of attitudes toward marijuana.

Goode [4] has argued that those who are pro-marijuana and those who are anti-marijuana do not disagree as to what the effects of marijuana are, "but whether they are 'good' or 'bad' (p. 85)." In a subsequent work, Goode [5] extended the argument by speculating that marijuana effects would be considered positive if rated independently of the knowledge that they are marijuana effects. However, once the average individual is told that the effects