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An Analysis of Psychedelic Drug Flashbacks

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ABSTRACT

Psychedelic drug flashbacks have been a puzzling clinical phenomenon observed by clinicians. Flashbacks are defined as transient, spontaneous recurrences of the psychedelic drug effect appearing after a period of normalcy following an intoxication of psychedelics. The paper traces the evolution of the concept of flashback and gives examples of the varieties encountered. Although many drugs have been advocated for the treatment of flashback, flashbacks generally decrease in intensity and frequency with abstinence from psychedelic drugs.

INTRODUCTION

Psychedelic drug flashbacks have been observed primarily by clinicians

involved in the treatment of adverse reactions to psychedelics. Flashbacks have not been reproduced or studied in controlled settings although this is probably feasible. The etiology as well as the existence of flashbacks have been subjects of controversy. This paper analyzes the current state of knowledge concerning psychedelic drug flashbacks and their treatment. Our analysis is from a clinical perspective and makes no pretense to comprehensiveness nor do we claim to understand their etiology. Clinicians, however, are faced with patients who claim to be experiencing flashbacks, and there is a need to have a pragmatic understanding of the phenomenon.

In addition to being of medical interest, flashbacks have become a professional interest to attorneys. Flashbacks have been presented as defenses in criminal proceedings, and flashbacks following an involuntary ingestion of LSD have been the basis for industrial accident compensation. Woody [1] in 1970 reported three case histories of flashbacks that occurred while individuals were driving and suggested that flashbacks have the potential of being a highway safety hazard.

Flashbacks are defined as transient spontaneous occurrences of some aspect of the psychedelic drug effect (usually visual) appearing after a period of relative normalcy following the original intoxication. While the definition in the literature varies subtly from author to author, all agree on the importance of a period of *normalcy* between the original intoxication and the recurrence of druglike experiences to distinguish flashbacks from prolonged psychotic reactions.

The druglike quality of the experience is also stressed. Flashbacks may occur after a single ingestion of a psychedelic drug such as LSD or mescaline but more commonly occur after multiple psychedelic ingestions. Flashbacks also have been described following the use of marijuana [2]. Flashbacks have been reported to occur during times of psychological stress, relaxation or everyday activities, during intoxication by alcohol, barbiturates, or marijuana; during ingestion of antihistamines; accompanying viral infections; fever and flashing lights.

INCIDENCE OF FLASHBACKS

The frequency of occurrence of flashbacks among individuals who have ingested psychedelic drugs has been the subject of much controversy, differing opinion, and scant data. Some clinicians believe that flashbacks more commonly occur after an adverse psychedelic drug reaction or "bad trip" or occur more

commonly in individuals with preexisting psychopathology. Most studies of flashbacks, however, are based upon case reports of individuals who have sought medical or psychiatric treatment because of flashbacks. This introduces a sampling bias in that there is no assurance that individuals who *seek treatment* are a random sampling of psychedelic users. Case reports offer evidence for the existence of flashbacks but do not establish either incidence or prevalence of flashbacks since the number of individuals who ingest psychedelics is unknown.

Discussions with individuals who use psychedelic drugs several times a month lead us to believe that fleeting flashes of light and afterimage prolongation in the periphery of vision occur very commonly for days to weeks following ingestion of psychedelic drugs. Individuals who are part of the psychedelic-using subcultures may accept these occurrences as part of the psychedelic experience and are unlikely to seek medical or psychiatric treatment. They sometimes view them as "free trips." The inexperienced psychedelic user and the individual who attaches a negative or "sick" interpretation to these visual phenomena are more likely to be disturbed by them and therefore to seek medical or psychiatric aid. While emotional reaction to the flashback generally is contained within the period of the flashback, prolonged anxiety states or psychotic breaks have occurred following a frightening flashback.

Stanton and Bardoni [3] administered an anonymous drug questionnaire to 2,256 enlisted men in Vietnam. Twenty-three percent of the respondents who had used LSD or STP (N = 240) reported flashbacks. Five percent of the respondents attributed flashbacks to amphetamines but the majority of these individuals also had used LSD or STP.

Horowitz [4] reported on 31 individuals interviewed by the Haight-Ashbury Project. These individuals were said to be "representative of the drug-using community." Twenty-five subjects were psychedelic users (three or more trips) and the remainder had used marijuana or amphetamines but not psychdelics. Of the 31, eight (23%) reported experiences which were identified by the study team as flashbacks.

Flashbacks are only one of a number of complications related to the use of psychedelic drugs which may occur after the pharmacological duration of the drug has ended. The other commonly reported complications are: (1) prolonged psychotic reactions, (2) depression sufficiently severe to contribute to suicide in occasional cases, and (3) exacerbations of preexisting psychiatric illness.

PSYCHEDELIC DRUGS

Common psychedelic drugs are LSD (lysergic acid diethylamide); peyote, whose major psychoactive component is mescaline (3,4,5-trimethoxy phenyl ethylamine), and psilocybin (dimethyl-4-phosphoryltrytamine) (Table 1). While the chemical structure of these compounds varies considerably, there is reason to believe that their effect on the brain is similar. Tolerance to repeated doses of these drugs develops rapidly and there is cross-tolerance among all of these drugs [5].

Marijuana (whose primary psychoactive ingredient is tetrahydrocannabinol [THC]) sometimes is classified as a psychedelic drug. This classification has been criticized because many of the pharmacological properties of marijuana are different from those of the psychedelics. Psychedelics are central nervous system stimulants. In low doses, marijuana acts primarily as a sedative-hypnotic [6].

With high doses of potent marijuana or hashish (which also contains THC), hallucinations of the psychedelic type occur in some individuals, and flashbacks to marijuana have been reported [2, 7]. There is not, however, cross-tolerance among psychedelics, amphetamines, and marijuana.

VARIETIES OF FLASHBACKS

Based on clinical experience accumulated at the Haight-Ashbury Free Medical Clinic in San Francisco, Shick and Smith [8] described three varieties of flashbacks: (1) the "perceptual flashback," meaning transient recurrences of visual effects similar to the LSD experience, ranging from flashes of light in the periphery of vision through shimmering or undulating fields of vision to well-formed visual hallucinations; (2) the "somatic flashback," or transient recurrent states of altered body sensations such as numbness or pain; and (3) the "emotional flashback," an intense recurrence of a specific disturbing emotion first undergone during a psychedelic experience.

Numerous descriptions of LSD flashbacks can be found in the medical literature. The following examples have been selected to illustrate the range and variety of experience reported. Horowitz [9] reports the following descriptions in *Image Formation and Cognition*:

> Now I often see a bright shiny halo around people, especially at the dark edges . . . sometimes it's rainbow colors–like during the trip

Sometimes the sidewalk seems to bend as if it's going downwards–even when I'm not on anything–or it just kinda vibrates back and forth.

Another case reported by Horowitz was that of a 17-year old boy who had taken a variety of psychedelics. During a recent "trip" he had hallucinated a black scorpion on the back of his hand and had been terrified:

"It had many legs and I was worried it might sting me." In the five weeks after the "trip" he claimed to have ingested no drugs, but the scorpion continued as "flashings," sometimes in a changed position, but always brown or black in color.

Woody [1] describes a flashback reported by a 22-year-old male who had taken an assortment of psychedelics. The flashback occurred while the patient was driving one evening shortly after dark:

I was driving down the street, turning, making a left. . . . Suddenly, zing, it's like there was a car in front of me. . . . I saw headlights like, for a flash, and like, I slammed on the brakes and almost went over the curb, and then I realized it wasn't anything . . . and then I backed up and went up the street.

Dr. Woody emphasizes that the individual had "no history of psychosis or previous psychiatric treatment."

Smith [10] reported a case history of a 23-year-old obese white male who was treated at the Haight-Ashbury Free Medical Clinic for complaints of recurring creeping loss of body sensations beginning 6 months after taking STP. The patient claimed not to have used any psychedelic drugs during the 6 months following his STP experience. He described very intense feelings of depersonalization, similar to those experienced during his STP trip, accompanied by loss of body image so severe that he sought medical help. The patient was treated with sedatives and long-term supportive psychotherapy. The feelings of depersonalization gradually faded although they recurred at irregular intervals for 8 months.

Shick and Smith [8] give an example of a "spontaneous recurrence of a particularly disturbing emotion" in a 21-year-old woman. She complained of recurrent feelings of panic followed by extreme loneliness 4 weeks after a bad LSD experience. The patient had these frightening flashbacks during the day while walking down the street, after smoking marijuana or drinking wine, and during the night, occasionally even while asleep. In one instance she awoke during the middle of the night with a feeling of panic and began running around the house, fleeing an imaginary threat she could not identify or

comprehend. She had taken LSD a number of times but her last two trips were bad ones with panic and fright followed by loneliness to the point of suicidal despair when she "came down." She was fearful of burning herself.

Carlos Castaneda, while a UCLA graduate student, apprenticed himself for 4 years to a Mexican sorcerer who guided him in the use of Jimsonweed (which contains atropine, scopolamine, and hyoscyamine), peyote and *Psilocybe mexicana.* Castaneda attributed his motivation for terminating the apprenticeship to the development of flashbacks. He writes of his experience in *The Teachings of Don Juan: A Yaqui Way of Knowledge* [11]:

> Saturday, April 10, 1965
>
> I had been experiencing brief flashes of disassociation, or shallow states of nonordinary reality. One element from the hallucinogenic experience with the mushrooms kept recurring in my thoughts: the soft, dark mass of pinholes. I continued to visualize it as a grease or an oil bubble which began to draw me to its center. It was almost as if the center would open up and swallow me, and for very brief moments I experienced something resembling a state of nonordinary reality. As a result I suffered moments of profound agitation, anxiety, and discomfort, and I willfully strove to end the experiences as soon as they began.

HISTORY OF THE FLASHBACK PHENOMENON

Psychedelic investigators from Havelock Ellis to today's researchers have been impressed that the psychedelic drugs have lasting psychological effects. These would not, however, be called flashbacks. In 1898 Havelock Ellis [12], commenting on his use of a peyote extract, wrote:

> . . . I can, indeed, say that ever since this experience I have been more aesthetically sensitive than I was before to the more delicate phenomenon of light and shade and colour.

Aldous Huxley [13], who also experimented with peyote extract and whose book *The Doors of Perception* is widely believed to have been a major influence on the renewed interest in psychedelic drugs as a method of "consciousness expansion," concluded his book:

> . . . The man who comes back through the Door in the Wall will never be quite the same as the man who went out. He will be wiser but less cocksure, happier but less self-satisfied, humbler in acknowledging his ignorance yet better equipped to understand the relationship of words to things, of systematic reasoning to the unfathomable Mystery which it tries, forever vainly, to comprehend.

Table 1. Most Common Psychedelic Drugs Implicated in Flashbacks

Drug (common name)	Chemical name	Source	Authors reporting flashbacks
LSD	Lysergic acid diethylamide	Synthetic	Numerous, including Cohen and Smith
STP (DOM)	2,5-Dimethoxy-4-methylamphetamine	Synthetic	Meyers *et al.* [22] Smith
Peyote (mescaline)	3,4,5-Trimethoxy phenyl ethylamine	Mexican cactus Peyotyl	Cohen [23]
Marijuana[a]	Tetrahydrocannabinol	Marijuana plant	Keeler [2,7] Wentworth-Rohr [24]

[a]Marijuana is included here as a psychedelic drug. Difficulties with this classification are discussed in the text.

The first indication of the existence of a flashback phenomenon in the medical literature appears in a letter to the editor of *Lancet,* May 21, 1955. Cooper [14] first reported on eight patients treated with LSD who manifested LSD reactions lasting more than 24 hr and then devised a descriptive classification for those reactions. In one case he states that the LSD reaction continued for 3 weeks. Treatment with chlorpromazine (Thorazine) appeared to control further reactions but Cooper emphasized:

> It is important to bear in mind that the patient's statements that reactions have ceased is not reliable; they may begin again after an *apparent return to normal.* I could not at present put a limit to the time during which the delayed reactions may appear.

He commented that "reactions are particularly likely to occur when relaxing for sleep."

In June 1963 Asher [15], a lecturer in physiology at the University of Birmingham in England, described his LSD experience in an article in *Saturday Review.* Dr. Asher had volunteered as a subject to test the effects of LSD. Following his trip he wrote:

> I was in bed for a few days and when not babbling or crying, I lay very limp and completely apathetic . . . after a fortnight, I was still very jumpy and susceptible to illusions.
>
> One morning, on looking into the sink, I saw this enormous creature standing at one edge. It looked so real that I frankly did not know what sort of action to take. Rather feebly I blew on it, and to my horror it made grotesque movements, impossible for any normal insect to achieve. And with these movements it fluttered around the sink. Then, with immense relief, I could see it was only the black charred remains of a piece of paper.

In 1964 Rosenthal [16], writing in the *American Journal of Psychiatry,* described persistent hallucinosis–probably what is now called flashbacks. He felt, however, that the flashback is a specific reaction seen in subjects who had had *multiple* administrations of psychedelics.

> Hallucinosis as a prolonged adverse reaction to the hallucinogenic drugs is proposed as a specific reaction seen in subjects who have had *multiple administrations.* Its onset may be heralded by a change in the experience obtained by use of the drugs. Where the effect had been euphoric, it becomes dysphoric, sometimes causing the subject to discontinue the use of the drug voluntarily. There then follows a prolonged period of intermittent recurrence of spontaneous visual hallucinations, lasting as long as 6 months or more after the last drug experience. The hallucinations are

marked by their similarity to those experienced while under the influence of the drug itself. Both pleasant and frightening effects are seen. The frightening hallucinations are involuntary. Cats, crabs, insects, corpses and skulls of familiar people are among the things that have been reported. The pleasant sensations are semivoluntary in the sense that the subject can make them more or less intense to the extent that he concentrates on them. They consist characteristically of the breakup of light into droplets of color, shimmering panels of color before the patient's eyes and brightly colored shape distortions. Hallucinosis may also be accompanied by fear and panic.

Also in 1964, Horowitz [17] reported a case of "visual hallucinations persisting after LSD-25 usage." The case was unusual in that a couple, both artists, *both* claimed to experience visual hallucinations for several weeks following a single ingestion of LSD.

The husband described being frightened of a dragon demon that appeared in a toilet bowl as it was flushed. He had lingering after-images of complementary color and form and would often see dots and sparklers in his peripheral vision. The images were reproduced in his painting and consisted of stripes, parallel lines, dashes and many little circles.

The hallucinations described by the wife were reported to be "a histrionic bid for attention rather than a true visual experience."

LSD received much lay publicity in 1966. If flashbacks are largely the product of suggestion as some individuals believe, the early publicity in the mass media assumes special significance.

The March 11, 1966 issue of *Time* [18] carried the article "An Epidemic of Acid Heads" in which Ungerleider, a UCLA psychiatrist, was quoted as saying: "The symptoms may recur in their original intensity long after the last dose of the drug. Many users have had this experience."

Also in March, 1966, *Life* [19] ran two pictorial articles showing the effects of LSD. The article contained the statement, ". . . there have been instances where LSD symptoms have recurred weeks after taking it."

ETIOLOGY OF THE FLASHBACK PHENOMENON

Flashbacks are a symptom, not a specific disease entity, and may well have multiple etiologies. The various theories presented here may not be mutually exclusive: none has been proved conclusively.

Theories generally proposed to explain flashbacks divide into the same mind/body dichotomy evident in other descriptions of central nervous system

functioning. Professionals whose training is oriented toward psychology evoke psychological explanations, whereas professionals whose training is physiologically oriented explain the phenomenon in physiological terms.

The Sensitization Theory

Because of the intensity of the state of altered consciousness during the psychedelic experience, an individual may become unusually aware of changes in visual, perceptual, or body sensations which usually do not reach conscious awareness. Once awareness of the sensation has been noted, however, a recurrence of the same sensation at a later day may be *interpreted* as a recurrence of the psychedelic state. If the individual attaches a negative connotation to the experience and believes she/he is having a "flashback," anxiety or fear then is produced by the *belief* that a flashback is occurring. The circular reasoning process can escalate to panic proportions.

Learned State Theory

Related to the sensitization theory is the concept of state dependent learning. Impressions and experiences which occur during a particular mode of consciousness (which may be induced by drugs or in other ways) are recalled whenever the individual reenters a similar state of consciousness. A perception learned, for example, while an individual is experiencing a high level of anxiety may recur whenever the individual enters the high anxiety state. Recall of the altered state may be facilitated by a variety of stimuli and conditions which may explain the apparent triggering of flashbacks by other drugs, fever, flashing lights, or psychiatric illness.

The Self-Fulfilling Prophecy Theory

Many authors have commented on the possibility that flashbacks could be a self-fulfilling prophecy generated by the negative publicity given to psychedelics by the news media, physicians, and psychiatrists. Journalist William Braden reported his personal experience with this phenomenon [20]:

> In my own case, I was having dinner one night with a bearded psychiatrist of formidable appearance. This was some months after I had participated in a legal

psychedelic experiment at a psychiatric hospital, for a newspaper story, and while the trip had not been a pleasant one, I had not given it any thought for some time, and I had not been worried about it in any way. Between courses, the psychiatrist declared: "The real tragedy of LSD has only now come to light. People think they might have a bad trip for a few hours, and that's all they have to worry about. But we now know the frightening truth that *nobody comes back unharmed.* In *every* case there is some degree of brain damage." . . . Driving home, . . . I kept telling myself: "Now is not the time to panic. Now is not the time to panic. . . ." Without dwelling on the details, I will say only that I spent a very bad week, and I can certainly understand now those stories about rational Westerners who mentally disintegrate under the suggestive curse of an African witch doctor. In my own mind, at least, the experience lends credence to the hypothesis that the press and the medical profession between them may have contributed to a similar situation by continually emphasizing the dangers and negative aspects of the psychedelic experience.

The Release Theory

According to this hypothesis, lasting toxic effects of psychedelic drugs produce neurophysiologic changes which intensify or disinhibit image formation. Horowitz [9] notes that the visual content of some flashbacks is similar to that reported during auras of epilepsy, migraine, or electrical stimulation of the brain.

The Psychodynamic Theory

Flashbacks resemble some states of nondrug induced psychopathology. Moreover, the image content of some flashbacks are previously experienced traumatic events or the breakthrough of repressed ideas or emotions. The individual frequently experiences a feeling of loss of volitional control or changes in the quality of reality.

The Intensified Memory Theory

Although much of a psychedelic experience is lost to voluntary recall, portions of the psychedelic experience may be remembered as being unusually vivid. Perceptions can be extremely intense and often possess the quality of having profound personal significance. If the experience is of a frightening nature, the memory of the event also may be unusually intense.

The Mystic Theory

Some individuals have a belief system which incorporates the theory that the mind has imprinted upon it memories of past lives, animal ancestry, or a collective human consciousness. The psychedelic experience is thought to be a method of contacting these "repressed" memories. Once such memories have been experienced, however, they press for modes of expression within the individual.

TREATMENT OF FLASHBACKS

In general, flashbacks fade both in intensity and in frequency with the passage of time. Few cases have been reported in which the flashback phenomenon persisted for more than a year. Various drug therapies have been suggested including chlorpromazine (Thorazine), nicotinic acid (vitamin B_3), diphenylhydantoin (Dilantin) [21], and sedatives. Supportive psychotherapy and reassurance are mentioned by virtually all authors who have commented on the treatment of the flashback. Horowitz [4] emphasizes that flashbacks often are symbolic of current psychological problems and in that sense may be useful material for exploratory psychotherapy.

Patients who experience flashbacks often become anxious about possible "brain damage." While no studies have clearly addressed the issue of flashbacks and brain damage, the patient should be reassured that others with flashbacks who restrained from psychedelic drug use found that the flashbacks decreased in frequency and intensity over time and eventually disappeared.

In summary, the state of the art relative to psychedelic drug flashbacks is essentially clinical and anecdotal in nature. Research to elucidate the causation of flashbacks would not only be worthwhile clinically but may supply additional information regarding functioning of the central nervous system.

Because of the misuse of psychedelics in the 1960s which received wide publicity and the subsequent restrictions imposed on psychedelic research, the psychotherapeutic potential of psychedelic therapy is still unexplored. While flashbacks may be one complication of psychedelic therapy, the risk of complications are weighed against the possible benefit of therapy. No effective psychotherapeutic tool is without risk, and the conditions for which psychedelic therapy is a possible treatment modality are not trivial. Flashbacks research is needed to ascertain the level of risk, particularly if research into the use of psychedelics as psychotherapeutic agents is resumed.

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