Contemporary Justice Review
Vol. 11, No. 4, December 2008, 427–439

Routledge
Taylor & Francis Group

SPECIAL ISSUE—Drugs, Healing, and the Expression or Repression of Human Consciousness: PART IV

Acid redux: revisiting LSD use in therapy

Adam Jacobs*

Department of Sociology, University of Wisconsin, Madison, USA

Recently the use of hallucinogens in therapy has resurfaced in clinical research. Decades after dismissing Timothy Leary for his experiments, Harvard approved clinical trials using psilocybin (mushrooms) in therapy with terminally ill patients. This article re-evaluates the research on LSD as a therapeutic element. A re-assessment of the earlier legal research on hallucinogenic therapy reveals both limitations to and the possible utility of these therapies. In this article I focus primarily on three cases: Stanislav Grof's work with LSD psychotherapy in a Freudian framework; research at the Mendota Mental Health Center on psychedelic therapy for alcoholics; and Harriet Whitehead's discussion of Scientology auditing and Piagetian schemata. This article is divided into three sections: a review of sociological and pharmacological perspectives on psychedelic drugs; a discussion of therapies using LSD during the 1960s and 1970s; and an evaluation of this research in light of intellectual developments in the understanding of cognition. While early enthusiasm about the benefits of hallucinogenic therapy was overstated, LSD may still have some utility in therapy when combined with other elements of therapy.

Keywords: LSD; psilocybin; Stanislav Grof; MDMA; hallucinogens; Mendota Mental Health Center

Introduction

In his review of the phenomenology of the psychedelic experience, David Wulff notes: 'Among the first subjective effects to appear after the ingestion of moderate doses of LSD, mescaline or psilocybin is what Havelock Ellis called a "saturnalia" or "orgy" of vision' (Wulff, 1991, p. 84) For precisely this reason, Freudian psychoanalysts viewed LSD as the ideal tool to reach the 'realms of the human unconscious' (the title of one of Stanislav Grof's books, discussed below). Psychologists employed LSD as a tool in therapy, hoping to delve into suppressed memories and elicit revelatory experiences that could alter behavior and cure pathology. This article will focus special attention on therapists who attempted to cure alcoholism with psychedelic therapy and examine the results in light of perspectives from the study of cognition. Is there any basis to suggest that LSD aids therapy or will psychedelic psychotherapy join phrenology and bloodletting on the list of medical missteps?

Stanislav Grof, a Czech psychotherapist who also worked in the United States, was probably the most prolific LSD therapist, working with over 2000 patients in LSD-assisted

*Email: ajacobs@ssc.wisc.edu

ISSN 1028-2580 print/ISSN 1477-2248 online

DOI: 10.1080/10282580802482652
http://www.informaworld.com

Freudian analyses. Grof was a disciple of Otto Rank, himself a student of Freud, who formulated a theory that the suppressed trauma was not the primal scene of parental copulation but 'the trauma of birth' (the title of Rank's most well-known book). Grof considered LSD a spectacular tool for regression, breaking down resistance so that patients could confront traumatic memories of the past and exposing what he called 'systems of condensed experience' that caused pathologies. He dealt with many severely troubled patients – some self-mutilating, some suicidal, and one so fearful of cancer that she cut out parts of her own jaw to stave off the growth of an imaginary cancer – and claimed to achieve wondrous results.

Consider this case study, recounted in *Realms of the Human Unconscious*:

> Richard's LSD therapy was related to his passivity, helplessness, and the role of victim that he had tended to assume in a variety of life situations. The basic theme of this system was the encounter with an overwhelming external force that was encroaching on him and endangering him without giving him the least chance to defend himself or escape…. Richard suddenly regressed deeply into infancy and experienced himself as a one-year-old baby swaddled in a blanket…. He saw a cow approach him, graze in the immediate proximity of his head, and then lick his face several times with her huge, rough tongue…. After having relived the happy ending of this situation, in which the adults discovered what was happening and rescued the baby, Richard felt enormous relief and a surge of vitality. (Grof 1975, pp. 58–59)

When counseled further, the patient discovered that his problems stemmed from the trauma of birth – a perspective consistent with the therapist's outlook. The Freudian therapist's orientation is to search out the root cause of pathology, bring it to the surface, and hence eradicate it. This particular story and many others like it in the book are notable because the mental connections between past events and present pathology are so innovative and outside of the usual realm of thinking. Grof held that everything that occurs during an LSD experience has a basis in lived experience and memory. Grof saw LSD experiences as evidence that the articulated memories were real, pervasive, and very deeply buried. A tenet of Freudianism is: '[W]ithin our consciousness, waiting to be recalled, is a memory of every moment, every feeling, every desire of our lives' (Caldwell, 1968, p. 131).

Therapists like Grof believed that LSD combined with therapy not only facilitated memory retrieval but also allowed for an ordering or coherence to the structuring of memory. Grof discards the possibility of 'false positives' during an LSD experience:

> Many aspects of LSD experiences of this kind appear at first completely absurd and incomprehensible and can be understood only retrospectively after the whole system is knows. Thus, for example, the vision of a trivial object … can be associated with panic anxiety, aggressive outbursts, sexual excitement…. Later reconstruction usually shows that this seemingly absurd and paradoxical connection has its intrinsic logic after all. Once the core experience is fully available, it becomes clear that *the quality of the emotional reaction is consistent with the nature of the original trauma*. (Grof, 1975, p. 79, emphasis added)

I maintain that this is not a plausible theory of LSD's effects during therapy. While there is some tentative evidence that LSD has utility in therapy, other perspectives are more fruitful for approaching the question of LSD effects on the mind, and allow us to leave aside the difficulty that many memories revealed in LSD therapy are either inaccurate or indistinguishable from widely diffused cultural tropes. Harriet Whitehead's description of 'existentially satisfying' explanations, and the influence of the therapist, can explain Grof's results without fully endorsing Freudian theories of memory and repression.

Psychedelics and cognition

Social perspectives

Why would LSD, or hallucination generally, aid in therapy? The treatment of hallucinations in social theory is scant, leaving us only a few noteworthy references. Aldous Huxley, an enthusiastic adherent of mescaline (a similar but organically derived hallucinogen) and later LSD, wrote *The Doors of Perception* to elaborate on the psychedelic experience:

> Huxley elaborated on Henri Bergson's theory that the brain and the nervous system are not the source of the cognitive process but rather a screening mechanism or 'reducing valve' that transmits but a tiny fraction of 'the Mind-at-Large,' yielding only the kind of information necessary for everyday matters of survival. If this screening mechanism was temporarily suspended … then the world would appear in an entirely new light. When he looked at a small vase of flowers, the mescalinized Huxley saw 'what Adam had seen on the morning of creation – the miracle, moment by moment, of naked existence.' (Lee & Schlain, 1985, p. 47)

William James also had firsthand experience with forms of intoxication that he discussed in *The Varieties of Religious Experience* (James, 1961). Alcohol's popularity, said James, 'is unquestionably due to its power to stimulate the mystical faculties of human nature, usually crushed to earth by the cold facts and dry criticisms of the sober hour. Sobriety diminishes, discriminates, and says no; drunkenness expands, unites and says yes' (1961, p. 304). Drunkenness is pleasant because we see unity and similarity, the essence of James' mystic consciousness.

Discussing his own experience with nitrous oxide, James makes a stronger assertion:

> Our normal waking consciousness, rational consciousness as we call it, is but one special type of consciousness, whilst all about it, parted from it by the flimsiest of screens, there lie potential forms of consciousness entirely different.… No account of the universe in its totality can be final which leaves these other forms of consciousness quite disregarded. (James, 1961, p. 305)

While Huxley understood consciousness as a narrow conduit filtering an immense experience, James saw ordinary consciousness as one of many parallel forms of experiencing the world. Drugs and religious ecstasy could offer a brief visit to one of these parallel forms. Some modern cognitive science points in the same direction – in his theory of the mind, Nobel Prize-winning biologist Gerald Edelman 'emphasized that consciousness concerns the rapid integration of signals from a great variety of modalities and submodalities to create a unified, coherent scene or idea. He suggests that *the number of possible conscious states is enormous*' (Nichols, 2004, p. 166, emphasis added; see also Edelman, 1987).

Does the mystical consciousness of drug experiences persist? James seemed to think so: 'Depth beyond depth of truth seems revealed to the inhaler. This truth fades out, however, or escapes, at the moment of coming to…. Nevertheless, the sense of a profound meaning having been there persists' (James, 1961, p. 305). This is a central question for LSD therapy. If LSD greatly alters perception and reorders reality, can this be sustained for years afterwards? Clinical evidence discussed below casts doubt on that proposition.

Medical perspectives

An early medical understanding of psychedelics, and LSD in particular, was that they were 'psychotomimetics', temporarily placing users in the equivalent of a psychotic state. The first wave of medical research on LSD suggested that the pharmacokinetics acted in the areas of the brain responsible for schizophrenia – for example, a series of articles entitled

'Schizophrenia: A New Approach' was published in the 1950s suggesting that naturally-occurring adrenaline derivatives, similar in structure to LSD, might be the biochemical origin of schizophrenia (Osmond & Smythies, 1952), and that schizophrenia could be understood as autotoxicity, whereby the human body accidentally released a surplus of LSD-like chemicals that led to persistent perceptual alterations.

Since the 1960s, the psychotomimetic theory of hallucinogens has declined and, for a while, considerable interest developed in the therapeutic potential of LSD. However, the precise cause of altered states of consciousness is still indeterminate. Julien says:

> One speculation about the process by which hallucinogens manifest their impressive alterations of mood, perception, and thought is that the pontine (dorsal) raphe, a major center of serotonin activity, serves as a filtering station for incoming sensory stimuli. It screens the flood of sensations and perceptions, eliminating those that are unimportant, irrelevant or commonplace. A drug like LSD may disrupt the sorting process, allowing a surge of sensory data and an overload of brain circuits. Dehabituation, in which the familiar becomes novel, is noted under LSD. (Julien, 2001, p. 344)

The dorsal raphe is part of the reticular formation, which is associated with basic activities such as sleeping and walking, and is a large site of serotonin receptors thought to be involved with sleep, sexual function, fatigue, and alertness. The reticular formation is one of the oldest and thus least differentiated parts of the brain, and not as well understood as other brain regions. Current pharmacology has for the most part rejected the raphe as the site of action of hallucinogens – Nichols (2004) notes problems with this theory and further empirical evidence that found that the suppression of raphe activity by LSD was only loosely connected with its behavioral effects. Still, Nichols concludes, 'It seems possible that the suppression of the raphe cell activity may be important to the overall psychopharmacology of these substances' (Nichols, 2004, p. 139).

Currently, the mechanism of action for LSD is thought to be at the 5HT2A serotonin receptor in the cerebral cortex. Serotonin is a neurotransmitter implicated in a range of activities from depression to sexual arousal. One of the most germane findings is that 5HT2A receptors are involved in learning processes. In classical conditioning studies with rabbits, conditioned response was significantly enhanced with LSD, showing an increase in associative learning (Nichols, 2004). The cerebral cortex is the part of the brain described as mediating the higher mental functions, as opposed to the raphe's position in the middle brain reticular functioning system.

Nichols notes that the proposed serotonergic mechanism of action of LSD has partly reinvigorated the psychotomimetic theory:

> In recent years this receptor [5HT2A] has gained tremendous importance as a potential therapeutic target for various psychiatric disorders such as schizophrenia and depression. For example, there is extensive evidence for a decrease in the density of cortical 5-HT2A receptors in schizophrenia, an effect that is particularly notable in the dorsolateral PFC. (Nichols, 2004, p. 162)

There is no clear consensus on the causes of psychedelic effects, and there is some variation between individuals in terms of pharmacodynamics. The general effects of LSD, such as vivid visual and auditory hallucinations, are discussed below.

Understanding revelation and personal transformation

In *Renunciation and Reformulation: A Study of Conversion in an American Sect*, Whitehead describes her experience undergoing 'auditing' as a member of the Church of Scientology

in California. Scientology deals with the same basic notions of memory and repression that Freud endorses:

> [C]ertain thoughts and memories, being in conflict with other areas of the personality, will be dynamically barred from consciousness and … it is the retrieval of these particular items and the integration into the conscious personality of the emotions and attitudes associated with them that bring about beneficial psychic reorganization. (Whitehead, 1987, p. 78)

Under auditing, Whitehead experienced past-life regression to origins as a princess in a far away galaxy. While the experience was vivid and convincing, she recognized that these 'space operas' bore a strong resemblance to the story of the *Star Wars* trilogy and other well-known cultural tropes.

In an excellent review of the Freudian perspective on memory, Whitehead highlights the problems that Freudians face with regression to past memories. First, many of these memories simply cannot be true, as both Freud and his students were aware. However, these creative inventions by patients did not lack therapeutic utility – change could still arise from these artificial 'recognitions' of past events. Second, even if there were primal scenes such as seeing one's parents having sex, how could very young children possibly understand what it meant? Why would present behavior be so heavily shaped by early life experiences?

Whitehead suggests that the key to understanding the existence of recurring tropes in therapy – what Freud called 'primal scenes' and Jung called 'archetypes' – lies in Piaget's idea of schemata, which are created early in development but remain somewhat flexible throughout life. The mind has both an assimilation function, which integrates new data into existing frameworks, and a reciprocal accommodation function, which adjusts schema to fit new information:

> It would not be necessary for the specific notions articulated by the analyst (or images embodying these notions) ever to have formed in the patient's mind for the patient to nonetheless 'appropriate' them, that is, find them subjectively fitting, when he or she encounters them in psychotherapy, or for that matter in some other suitable context. What we have here [in therapy] is merely a matter of schemata appropriating, that is, assimilating, fitting ideas and images. (Whitehead, 1987, p. 89)

Freudian therapists believed that LSD therapy proved the existence of the Freudian unconscious. Grof believed the validity of his patients' revelations was evident because his Czech patients were unfamiliar with Freudian ideas, yet still manifested Freudian memories. Whitehead's Piagetian argument sidesteps the question of whether these archetypes are 'really there', and makes the more limited and plausible assumption that the mind works to comprehend experience through constant assimilation and accommodation. Whitehead quotes Piaget as saying: '[T]here is no need to ascribe a representative memory to this unconscious in order to explain the continuity between past and present, since the schemas insure the motor and dynamic aspect of this continuity' (from *Play, Dreams and Imitation by Children*, quoted in Whitehead, 1987, p. 89).

More importantly, some rubrics are 'existentially satisfying', if not particularly plausible or accurate. Freudianism makes sex and dreams not embarrassing or irrelevant but a link to prehistory, a more satisfying way for us to think of our problems and anxieties. Such narratives 'situate these patterns, and thus the patient's most intimate self, within a larger cosmological and collective order, *thereby ennobling his suffering and sparking within him a sense of higher purpose*' (Whitehead, 1987, p. 96, emphasis added).

So it is for the patients who see the 'real' cause of their pathology. This seems to hold for both positive and negative LSD experiences – in good trips, the individual feels his deep

relationship to a loving collectivity; in bad trips, this fearful experience can induce a quest for a better life. Like other rituals, in therapy

> a process is engendered whereby the structures of feeling and cognition are linked up to a wide, and publicly sharable, vision of reality that is existentially satisfying … through the medium of symbolic formulations that 'fit' the deeper structures of the self while simultaneously making assertions about the world. (Whitehead, 1987, pp. 97–98)

For example, 12-step programs have diffused and succeeded partly because they offer an existentially satisfying narrative (the disease concept of addiction) to explain a long period of unhappiness.

During any psychic alteration:

> The side of the pair that suffers in all of the practices listed above is 'accommodation.'… The waning of accommodation also means, reciprocally, the predominance of assimilation in the thought process. Reality is uncritically shaped to the preexisting structures of the subject, producing distortions and 'projections' that become more personal and at the same time more unwitting as accommodation recedes from mental activity…. I would add that the primacy of assimilation is remarkably prominent in hallucinogenic drug trip and visionary states … [with a] tendency to experience the collapse of hierarchical distinctions between persons, creatures, values and so on, with the resulting sense of 'universal brotherhood' or in Victor Turner's terms, 'communitas.' (Whitehead, 1987, pp. 106–108)

With increased assimilation comes the possibility of reorganizing meaning. Because of the heightened suggestibility of the patient, the therapist's perspective can manifest itself in the patient – thus Freudians find primal scenes and Rankians like Grof find birth trauma in the hidden memories.

Why does conversion dwindle? According to Whitehead, this is because negating one's old self is hard work:

> The edifice of faith is held aloft by a column of effort, the renouncer's effort at relinquishing prior attachments. Beyond the first and easy stages wherein relinquishment covers primarily attachments that were highly problematic already, this effort increasingly becomes a strain. (Whitehead, 1987, p. 272)

Consider the case of the alcoholic. For an alcoholic who has a moment of conversion and a burst of reformative energy, the first layers of association with other heavy drinkers are easiest to cast off. However, it is harder to deny all of the well-meaning friends at the bar, the co-workers who expect an occasional round after work, and even the family members who have come to expect a drunk in the family. One of the observations from LSD research with alcoholics was: 'We have encountered many mothers and wives of alcoholics who complain about their son's or husband's abstinence following treatment, claiming that the patients were much "nicer" when they drank' (Ludvig, Levine, & Stark, 1970, pp. 61–62). Alcoholism had created a certain set of expectations in the family, and the post-therapy individual had new behavioral patterns that did not always mesh well.

Conversion and major life realignment appear to be best coupled with social relocation – monasticism, missionary work, cults, or even simply moving out of the house. Placing the person back in the same situation, in contrast, will rarely yield long-term results. This may explain some of the success of Grof's unusually troubled patients, where even simple changes such as moving out of the house of abusive overbearing parents could induce positive change.

Within Whitehead's framework, we can understand the immense hopes for, and appeal of, LSD therapy. The passage to conversion is arduous, with many intermediate steps; the

hope was that LSD would simply cut to the chase, and immediately induce the requisite mystical experience that would induce change. Regarding religious mysticism, Whitehead says:

> [F]ar from the lower levels of the belief system being discredited by the higher conclusions, they are in a way reinforced, for however gross and inaccurate these lesser conceptions, they occupy the position of keys or gates through which the seeker must pass to reenter the Real. (Whitehead, 1987, p. 276)

LSD, it was hoped, was the skeleton key that would open all of the gates simultaneously. Some LSD therapists openly admitted that one of the appeals of LSD treatment of alcoholism was that it was cheap and promised quick results in a field of therapy with low success rates and protracted therapies; even better, it valorized therapists as true healers, not 'glorified social workers' (Ludvig et al., 1970, p. 15). The hope was that LSD would make therapy both more profound than mere talk and likelier to succeed.

Psychedelic therapy and alcoholism

During the 1950s and 1960s, before Grof's research was published, a considerable literature developed on LSD as a therapeutic tool. Researchers tried LSD along with Ritalin (an amphetamine now most commonly prescribed for attention-deficit hyperactivity disorder) as treatments for a huge range of maladies including generalized anxiety, writer's block, psoriasis (a skin condition thought to be related to neurosis), migraine, female 'frigidity', and male impotence (Ling & Buckman, 1963).

The LSD therapy literature is awash with the psychoanalytic language of the post-war period. Freud's influence looms large, and the theories of his collaborators and students form the primary basis of LSD therapy. Ling and Buckman utilized Rorschach's inkblot tests; Grof employed Otto Rank's theories of birth trauma; and Carl Jung's ideas of collective unconscious and archetypes permeate the discussion. Even if one is skeptical about psychotherapy, this research is invaluable: LSD research has been illegal for decades, and the work of the 1950s and 1960s offers the only window, however warped or cracked, into the effects of LSD on perception.

Some Canadian researchers appeared to have considerable success using this method to treat alcoholics. Humphrey Osmond and Abram Hoffer, researchers at Saskatchewan Hospital, believed that the terrifying potential of intense drug experience would mimic the onset of delirium tremens, and that such 'horrification' was necessary to jolt alcoholics out of their self-destructive behavior. Real delirium tremens is life-threatening and can kill the alcoholic; Osmond and Hoffer believed that the disorienting and intense experience of a heavy LSD dose administered under clinical conditions was a safe and effective way to bring drinkers to a point of realization. Osmond and Hoffer treated thousands of patients and reported near-miraculous recovery rates, with 50% or more patients staying completely sober. These apparently spectacular results were later critiqued on the grounds of poor controls, and subsequent research (especially Ludwig et al., 1970) cast doubt on the wide-reaching benefits of LSD therapy. This research has recently been re-examined with considerable detail from the social history perspective (Dyck, 2006).

Osmond and Hoffer focused on an experience that could shock the addict back to normalcy. There was also a more positive perspective among LSD therapists. Some believed LSD could almost force people to feel connected and less alienated; this is more akin to James' idea of mystic consciousness. According to a popular history of LSD:

> Osmond and Hubbard came up with the idea that LSD could be used to transform the belief system of world leaders and thereby further the cause of world peace. Although few are willing to disclose the details of these sessions, a close associate of Hubbard's insisted that they 'affected the thinking of the political leadership of North America.' (Lee & Schlain, 2001, p. 50)

Not all researchers were so sanguine about the possibilities of LSD research. A group of researchers at the Mendota Mental Health Institute in Wisconsin approached LSD therapy with skepticism:

> Almost any time a promising new drug is introduced into psychiatry, there comes a wave of unabated enthusiasm and a deluge of literature describing the revolutionary advantages of the new drug. If one waits long enough, enthusiasm for the drug will begin to diminish and the drug will either disappear from use or soon find its proper niche in the overall psychotherapeutic armamentarium. (Ludvig et al., 1970, p. 20)

One need only recall the excitement and subsequent furor over Prozac in the past decade to see the validity of this apprehension. Other researchers were also dubious of the miracle cure qualities of LSD cited by Grof and Osmond and Hoffer. Caldwell was especially critical:

> Can we believe that in one session, a maximum of four to six hours of therapy, fifteen years of bad childhood conditioning, traumatic experiences, and a lifetime of lopsided neurotic adjustment can be erased? It is too much to hope for, even in 'instant therapy'.… After the splendor fades from memory, as surely it must, relapses would seem to be inevitable. And one waits, with certain misgivings, those follow-up evaluations which will trace the patients' drinking habits for two, three and five years after treatment. (Caldwell, 1968, p. 119)[1]

The Wisconsin researchers mentioned above concluded that improvement and behavioral change were far more contingent than Grof's results would suggest:

> This is an especially important issue in the assessment of psychedelic drug therapy which is characterized by claims of patients about the acquisition of new insights, greater feelings of religiosity, the possession of new coping skills, self-affirmation, and a renewed self-confidence for disrupting chronic, maladaptive patterns of behavior.… *There is no need to cite any esoteric examples to illustrate that the relationship between attitudes and behavior is a tenuous one at best.*… Since most behavior does not occur in a social vacuum, we must next consider its context and the reaction of others to it. If behavioral change does occur following treatment, is it necessarily for the better and by whose standards? Immediately, we must recognize that the standards used to assess both attitude and behavioral improvement are far from objective and unbiased. (Ludvig et al., 1970, pp. 60–61, emphasis added)

These researchers advocated a model that considered social expectations of the alcoholic, and recognized that 'certain consequent sets of attitudes and behaviors may be held in high esteem by one segment of society but ridiculed by another' (Ludvig et al., 1970, pp. 64–65). If the alcoholic has a revelation with LSD, this is only the beginning of the cure, not the end as Grof had hoped. Social reintegration was the greatest stumbling block, not realization *per se*.

The Wisconsin researchers set out to evaluate the enthusiastic claims of the Canadian research with skepticism (as mentioned above, Grof's work largely post-dates this early battery of research). The Wisconsin researchers constructed a study with more stringent controls, a large sample, and an extended period of post-therapy evaluation that assessed behavior as well as attitudes. There was clearly some hope among the researchers that LSD

would work, if only for practical reasons: LSD promised a quick cure for alcoholism that was then easily available to medical professionals, so it was certainly worth a try. Felicitously, other research groups attempted the same evaluation concurrently, and the results of all of these trials are reported in the final chapter of Ludvig et al.

Findings showed that, overall, the transformative properties of LSD therapy appeared to be minimal; although patients often believed they had reached an epiphany and changed their lives, the follow-up evidence simply did not support this claim (for corroboration of Ludvig et al., see Smart, Storm, Baker, & Solursh, 1967). Family members who were surveyed generally assessed the patient much more critically and cast doubt upon the lasting effect of the LSD-induced revelation.

In some cases, LSD was effective in helping people stop drinking. However, in no case was it more effective than a talk therapy control group in the long term. LSD therapy held an early lead – in some studies the improvements in sobriety were considerably greater for the LSD group after three months, but in repeated follow-ups this differential evaporated (Ludvig et al., 1970, p. 235). The review of experimental evidence concluded:

> We have been impressed with the relative similarity and consistency of findings among almost all these studies…. One, significant improvement can be demonstrated in patients regardless of whether they are assigned a special form of LSD therapy or some other type of control treatment. Two, regardless of the magnitude of improvement recorded for LSD forms of treatment, *the results are not significantly different than those obtained by the control therapy*. (Ludvig et al., 1970, p. 238, emphasis added)

Moreover, even the cumulative benefits of hospitalization – improved nutrition, free medical care, a chance to 'dry out', and a supportive anti-drinking environment – did not produce long-term sobriety in most of the patients. One year after the treatment, almost 90% were drinking again. The researchers also experimented with Antabuse, an anti-alcohol pill that induces vomiting when the patient drinks, but saw little lasting improvement as drinkers gradually stopped taking the pill. Hypnosis and talk therapy were similarly ineffective. Finally, despite the hypothesis that certain personality types might be especially receptive to or successful with LSD therapy, the researchers concluded: '[I]t was disappointing to find that neither patient, treatment, nor therapist variables bore any consistent, significant relationship to treatment outcome' (Ludvig et al., 1970, p. 243).

The researchers attempted to replicate what they called the religious conversion model of LSD treatment, using heavy doses to induce a revelatory experience. The temporary improvement of LSD recipients tapered off and disappeared in later follow-ups. The unique experience of LSD therapy gave a brief burst of reformative energy, but failed to persist without social relocation and other means of affirmation of the new self. The Wisconsin researchers opted for a Durkheimian interpretation of the results: the true benefits of transformative drug experiences may lie in the affirmation of social solidarity in ritualistic settings. In a discussion of the efficacy of peyote in treating alcoholism in Native Americans, the authors commented: 'Whether peyote is specifically antagonistic to alcohol intake or whether the reported "cures" are related more to group membership, cultural expectations and group pressures has never been resolved' (Ludvig et al., 1970, p. 15).

Although this well-designed study failed to endorse LSD as a therapy, it was later critiqued on the grounds that the investigators were not particularly invested in LSD research. The therapists in the Wisconsin study for the most part were not believers in the efficacy of LSD therapy (Nichols, 2004). Given the importance of set and setting on drug experience, this may be a valid reason for reconsideration of the results (Zinberg, 1986). Nichols concludes his review on hallucinogen therapy optimistically: '[A] reevaluation of

the use of hallucinogens as components of a comprehensive program to treat alcoholism and substance abuse may be worthwhile' (Nichols 2004, p. 164).

Extrapolating from LSD therapy

The first clinical trial of hallucinogen therapy in decades was recently approved for terminally ill patients trying to reconcile themselves to the notion of dying. Despite its limitations, the evidence discussed above suggests that LSD and other psychedelics may have some utility in therapy; LSD is one of many forms of consciousness alteration that allows increased suggestibility and increased assimilation of information. Although this may not affect long-term change as miraculously as hoped (or spontaneously elicit world peace as also hoped), LSD may prove useful in situations where a patient will not have to return to all of the institutions of everyday life. In fact, terminally ill patients may provide the ideal patients. Rather than reintegrating into home, family, and work after therapy, they will soon face 'the great unknown'. Like a convert cementing his faith with a missionary experience, this impending removal from society may result in superior results with LSD therapy.

Several perspectives from the literature on cognition and culture can help us better understand the effects of LSD. Howard Margolis suggests that most cognition can be best understood as pattern-recognition. In this pattern-recognition system, we 'do not have subjective access to all the patterns which are recognized on the way to a consciously perceived judgment' – there simply is not room for all of them in working memory (Margolis, 1990, p. 74). People cannot be trusted to account for their actions post-hoc:

> When we do articulate reasons for a judgment, we do that with no sense that the reasons-why we give have only a problematic relation to what in some objective sense could be construed as the actual reasons why (to the cues that were critical to prompting the judgment). (Margolis 1990, p. 77)

Margolis's argument exposes a weakness in Grof's approach to LSD therapy, which relies heavily on meaning-making after the fact.

Margolis describes reasoning-why as the formation of patterns in the mind for later retrieval; these become available as entire objects for later retrieval. Seeing-that is more intuitive, and involves checking the incoming information against existing patterns. In LSD experiences, where the incoming information may not match what is expected, the result is what Margolis calls tight scan control and narrow focus, whereby patients fixate on everyday objects and settings and derive profound and novel meanings from them. Finally, Margolis argues that the mind errs in favor of pattern over-recognition – '[T]he virtue of a scheme that may jump too soon is that it does not have the failing of hesitating too long' (Margolis, 1990, p. 85). As the mind becomes more suggestible and more apt to assimilate during LSD experiences, pattern recognition may be accelerated, causing visions of things or events that are not really there. What Margolis calls the 'curve-fitting process', an ordinary part of cognition that matches the real-world input with mental structures, is even more acutely activated in the LSD patient.

Therapy involves guided reasoning-why. Margolis emphasizes that different people can go through the same reasoning process for the same events and derive different conclusions. Thus therapists could trace old memories and find interject new and plausible interpretations or organizing rubrics. In Margolis's framework, there is ample room for these alternatives to be inserted into the mind for future use. However, a one-time re-ordering will not change the mind forever, as some LSD therapists had hoped – reasoning-why may revert to

the more well-established pre-therapeutic understandings, explaining the dubious long-term efficacy of these treatments.

Margolis's theory dovetails with a theory of cognition known as the memory-prediction framework. Developed by Hawkins in *On Intelligence* (2004), memory-prediction is derived from the observation that cerebral cortex tissue appears to be used for many different functions in different species. Hawkins suggests that the physically uniform cortical tissue (the outer layer of the brain generally responsible for higher functioning) processes information under a single rubric deemed 'complexity management'. Hawkins' system is akin to Margolis's pattern-recognition heuristic: bottom-up input (visual input, for example) is matched with a hierarchy of top-down expectations. The input is usually congruent with expectations, and when this happens higher-level abstract concepts are invoked, eliminating the superfluous details of the input. These higher-level concepts are labels or chunks that contain a wealth of data that can be employed in quickly understanding the situation, rather than processing all of the incoming environmental information. However, when input does not match expectations, the input data is processed up to the higher levels of the mind, and the chunks of perception can undergo transformation.

LSD clearly alters the bottom-up intake of information by increasing pattern recognition and allowing more information in for processing (increasing assimilation and decreasing accommodation, in Whitehead's terms). According to Goodman (2002):

> [The neocortex] modulates awareness of the environmental surroundings and filters a high proportion of this information before it can be processed, thereby only allowing the amount of information that is necessary for survival. LSD works to open this filter, and so an increased amount of somatosensory data is processed with a corresponding increase in what is deemed important. (Goodman, 2002, p. 263)

When incoming stimuli do not match established frameworks, two things occur: first, the stimuli are sent all the way to the higher levels, instead of immediately invoking a higher-level concept or chunk; second, alternative interpretations occur at the more abstract meaning-making levels.

The former point suggests why LSD experiences are often described as extremely vivid and 'more real than ordinary reality': sight and sound are not processed into pre-existing concepts, and hallucinatory input reaches the higher mental levels. The second point suggests why LSD has some value as an adjunct to therapy, insofar as it can facilitate the creation of different higher-level concepts or new conceptual structures from the same input. Grof's patients did just that: they created or assimilated new higher-level chunks for understanding their experience.

Addiction and change

Why is human behavior so recalcitrant? Many people would like to change their behavior, and appear to be pursuing self-destructive trajectories for no other reason than a refractory personality.

LSD psychotherapy offered the prospect of a 'big bang' in addicts, a reassessment of the arcs of their lives and a cleansing of self-destructive behaviors. Initial reports were spectacular – patients saw God, regressed to birth, and intimately understood the heretofore hidden patterns of their lives. Optimists, such as Grof and Osmond, saw in LSD the possibility of a fundamental alteration of human cognition.

Addictive behavior has proved to be considerably less malleable than LSD optimists had hoped. As Jon Elster says, 'There is a wide range of drug treatments. The main thing they

have in common is that they rarely work' (Elster, 1999, p. xvii). LSD therapy largely provided a brief, intense moment of insight. Ultimately these epiphanies may have had their root in the therapist's *Weltanschauung*, so Freudian therapists found Freudian revelations from their patients. To the Freudians, the recognition was the hard part. Once the personality problem was identified, it was essentially solved – knowing was not half the battle but essentially the victory. While this recognition is not without value, a variety of practices are needed to alter addictive behavior; new rubrics alone are usually not sufficient.

LSD is best understood as an alteration to the mind that changes the input received by the mind. The novelty of the LSD hallucination sometimes induces a re-interpretation in the higher levels of the mind, in the 'abstract concept modules'. Existing higher-level concepts can be altered, or new ones can be formed, based on the new input from LSD-altered perception. However, the formation of new concepts – such as new interpretations of one's memories – is not a permanent change, but rather one possibility that remains available for the interpretation of later events. Since the LSD experience is unusual and unlike everyday perception, these LSD-derived concepts may not be invoked much after the initial revelation.

Addiction and recovery are not simply matters of choices, costs, and benefits. Situations and institutions provoke responses in individuals, and it seems unlikely that patients who experienced LSD therapy could maintain their changed outlook forever. When reintegrated into work, family, religion, and other social institutions, the patients received a set of stimuli and roles that may not have facilitated long-term recovery.

Assessing the research

Let us assume for a moment that Grof was successful in treating patients with LSD, while the Mendota researchers (Ludvig et al., 1970) were not. The similarities between the two groups are that both used heavy doses of LSD, and both had patients initially report profound transformations. The differences are the use of controlled experiments, the introduction of a new theory (birth trauma/repressed memory), a subsequent change of setting, and investment by the therapist in LSD use. These dimensions are summarized in Table 1.

On the basis of these similarities and differences, there are at least four possible conclusions from this review of LSD therapy. The first is that Grof and other Freudian LSD therapists were not nearly as successful as they claimed (false positive). The second is that Grof managed to help his patients by introducing an 'existentially satisfying' rubric that allowed for long-term behavioral change (narrative effect). The third possibility is that Grof succeeded because his patients were so deeply disturbed that even a simple modification like moving out of the house of domineering parents helped immensely in addition to therapy (setting effect). Fourth, the therapist's belief in LSD efficacy may be the decisive

Table 1. Summary of Grof (1975) and Ludvig et al.'s (1970) research.

	Heavy LSD dose	Initial feeling of transformation in patient	Controlled experiment	Introduction of new theory	Subsequent change of setting	Therapist investment in LSD	Lasting change
Grof	Yes	Yes	No	Yes	Yes (usually)	Yes	Yes
Mendota researchers	Yes	Yes	Yes	No	No (usually)	No	No

factor. Finally, the explanation may be a conjunctural one: some combination of these factors led to success (if in fact it was success).

From the information presented here, it is unclear which of these three dimensions – new narrative, new setting, or therapist investment – is required for a successful outcome. It may be all or only one of these elements. Future research, which appears likely to continue in this area, should address not only the neurological and biological dimensions of LSD therapy but the effect of social setting and therapist involvement. The work of Whitehead, Margolis, and Hawkins suggests that LSD may beneficially alter high-level cognitive structures, but that these alterations alone will not be sufficient for treating alcoholics and other addicts effectively.

Note

1. LSD therapy differed between North America and continental Europe. Caldwell characterized the European therapy as 'psycholotic', with lower doses of LSD, numerous sessions, and the goal of regressing to infanthood and curing 'psychopaths, sexual perverts, borderline cases' (Caldwell, 1968, p. 120). In contrast, American and Canadian 'psychedelic' therapy aimed for a one-shot experience bordering on mysticism, focused especially on curing alcoholism and neurosis. Caldwell argued that American one-shot therapy was inferior.

References

Clinicaltrials.gov. Retrieved October 18, 2006, from http://www.clinicaltrials.gov/ct/show/nct00302744

Dyck, E. (2006). 'Hitting highs at rock bottom': LSD treatment for alcoholism, 1950–1970. *Social History of Medicine, 19,* 313–329.

Edelman, G. (1987). *Neural Darwinism: The theory of neuronal group selection.* New York: Basic Books.

Elster, J. (Ed.). (1999). *Addiction: Entries and exits.* New York: Sage.

Goodman, N. (2002). The serotonergic system and mysticism: Could LSD and the nondrug-induced mystical experience share common neural mechanisms? *Journal of Psychoactive Drugs, 34,* 263–272.

Grof, S. (1975). *Realms of the human unconscious: Observations from LSD research.* New York: Viking Press.

Hawkins, J. (2004). *On intelligence.* New York: Henry Holt.

James, W. (1961). *The varieties of religious experience.* New York: Collier.

Julien, R. (2001). *A primer of drug action.* New York: Worth Publishers.

Lee, M.A., & Schlain, B. (2001). *Acid dreams: The complete social history of LSD: The CIA, the sixties, and beyond.* London: Pan Books.

Ling, T., & Buckman, J. (1963). *Lysergic acid (LSD 25) and Ritalin in the treatment of neurosis.* London: Lambarde Press.

Ludwig, A., Levine, J., & Stark, L. (1970). *LSD and alcoholism: A clinical study of treatment efficacy.* Springfield, IL: Charles C. Thomas.

Margolis, H. (1990). *Patterns, thinking, and cognition.* Chicago: University of Chicago Press.

Nichols, D. (2004). Hallucinogens. *Pharmacology and Therapeutics, 101,* 131–181.

Osmond, H., & Smythies, J. (1952). Schizophrenia: A new approach. *Journal of Mental Sciences, 98,* 309–315.

Smart, R., Storm, T., Baker, E.F.W., & Solursh, L. (1967). *Lysergic diethylamide (LSD) in the treatment of alcoholism, Vol. 6* (P.J. Giffen & R.E. Popham, Eds.). Toronto: University of Toronto Press.

Whitehead, H. (1987). *Renunciation and reformulation: A study of conversion in an American sect* (R. Sanjek, Ed.). Ithaca, NY: Cornell University Press.

Wulff, D. (1991). *Psychology of religion: Classic and contemporary views.* New York: Wiley.

Zinberg, N.E. (1986). *Drug, set, and setting: The basis for controlled intoxicant use.* New Hove, CT: Yale University Press.