

SOCIO-CULTURAL AND PSYCHOLOGICAL ASPECTS OF CONTEMPORARY LSD USE IN GERMANY

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The current study uses a qualitative methodology to investigate socio-cultural and psychological aspects involved in the use of LSD and comparable psychedelic substances. To date, 26 narrative interviews have been conducted with 12 female and 14 male users aged 19 to 53 years. The resulting data were subjected to content analysis in several thematic areas. Subjective reports of LSD use and experiences are considered among the complex interrelationship of drug effects, individual and environmental factors, as well as in comparison to the results reported in earlier research. Preliminary results suggest the use of LSD is largely independent of the "party drugs" scene, although its users do embrace elements of alternative lifestyles and subcultures. The majority of participants report their LSD experiences to be of great importance and to have intellectual relevance for their individuation process and personality development. Exploration of the self and the desire to experience profound changes in their perception of the world are reported as primary motives for LSD use, in addition to its hedonistic value. Individual backgrounds, knowledge and patterns of reaction are found to strongly influence the character of the drug effects that are experienced. Next to a wide range of extra-pharmacological factors, various methods for actively modifying LSD induced states were discovered to determine the general character of LSD experiences. These are discussed with regard to their implications for the development of suitable harm reduction concepts.

INTRODUCTION

Since its discovery in 1943 by Albert Hofmann, LSD has been subject to extensive study utilizing a wide range of approaches. A great deal of research on LSD and other psychedelic substances was conducted between the 1950s and the early 1970s. These studies assessed the drug and its effects as well as the potential value of

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altered states of consciousness (ASC) induced by LSD for psychotherapeutic and psychiatric treatment. LSD effects appear to be totally different from those produced by narcotics or other depressant drugs. Early scientific commentators recommended use of the term “psychedelic” (Osmond, 1957) as a replacement for the older term “hallucinogen” that had been applied to LSD and the LSD-analogous substances, psilocybin and mescaline.

Extensive studies of LSD phenomenology were performed in clinical and experimental psychiatric and psychological research (Stoll, 1947; Leuner, 1962; Masters & Houston, 1967; Hollister, 1968; Barr, Langs, Holt, Goldberger, & Klein, 1972; Grof, 1975, 1981; Fischer, 1975; Dittrich, 1985). The acute effects that may be induced by psychedelic drugs encompass a broad spectrum of alterations in cognitive functioning. These include a generally enhanced sensory acuity and reactions, altered optical perceptions including primary process intensity and synesthesia (a mixing of sensory experiences), dissolution of the linear time dimension, altered interpretation and meaning of stimuli, changes in language use and communication, an increase of associative thinking and intuition, and facilitation of new insights and ideas. Alterations of cognitive processes include diminished performance in logical thinking, abstraction and differentiation, self-transcendence and complete dissolution of the self, enhanced empathy and suggestibility, access to unconscious knowledge and memory contents, dreamlike hallucinatory sequences and images, intensification of emotions including feelings of bliss and ecstasy as well as existential fears, panic and horror, increased degrees of vigilance (cognitive arousal) and meditative trancelike or catatonic phases.

Researchers observed that the acute LSD state was characterized by dynamically different phases, with a high degree of variability and fluctuation between different phases. Depending on dosage, the variability of LSD effects and their intensity determine the nature of this typical modulation and modification of the inner condition. The specific manifestations of subjective consciousness alterations have proven to be unpredictable, and the production of an invariant phenomenology is not possible in different persons, or for that matter, in the same person at different times. Efforts to systematically categorize LSD phenomena included early models related to drug state phases such as *abstract-aesthetical*, *psychodynamic*, *perinatal* and *transpersonal*, dynamically directed by *systems of condensed experience* (Grof, 1975, 1981), to levels of intensity or depth such as the *sensoric*, *recollective-analytic*, *symbolic* and *integral* levels (Masters & Houston, 1966), and forms such as *optic*, *emotional*, *sensoric*, and *reminiscent-hallucinatory*, or functional sequences of course such as continuous, *quasi-normal* and fragmented-dissociated, *extreme-psychotic* that are directed by *transphenomenal dynamic systems* (Leuner, 1962). Other models ordered these phenomena by areas or modalities of cognitive

functioning. The LSD state is generally interpreted as a process of deconditioning, involving a modifying and/or restructuring of the cognitive system and a functional regression of mental organization towards an archaic condition of consciousness. Altered perceptual, intellectual, and emotional functioning that occurs as learned ways of information processing is either made inaccessible or set aside.

More recently, experimental neuroscience and brain researchers have identified several important factors involved in LSD actions and the manifestations of the drugged state. In addition to general activation of the central nervous system, significant increases of metabolic and electrical activity in several cortical and sub cortical brain areas were found (e.g. Snyder, 1986; Zehentbauer, 1992). The biochemical mechanism of LSD action appears to relate to a structural similarity of the LSD molecule with the endogenous neurotransmitter serotonin (5-HT), central to the regulation and inhibition of neural impulse rate (Aghajanian, 1994). LSD is able to block serotonin receptors, and to suppress inhibitory serotonergic effects, thus reversing reduction, filtering and selection of processed information. Simultaneously, the release of dopamine and non-adrenaline are increased.

Neuroscience researchers have also linked drastic changes in the processing of information to suspension of the thalamic filter and related feedback loops between cortex, striatum and thalamus (CSTC-loops). The net result of these changes is the production of quantitative and qualitative sensory overload (Vollenweider 1994). Research findings demonstrate that enhanced input and output in the cognitive system are central elements in LSD's actions. Findings also suggest that the so-called "mind-expanding" properties of LSD correspond to the use of alternative pathways and modalities of information processing on the neural level.

Early attempts to explain the LSD-induced state produced partly contradictory findings and interpretations. In the 1960s, psychological research and the reported subjective experiences of users generated the well-known notion of "consciousness expansion" under the influence of LSD. Those embracing the concept considered psychedelic drug effects as having great human intellectual potential and promoted their use as a means for auto-therapeutic healing and mind expansion (Leary, 1964, 1968; Solomon, 1964).

In sharp contrast to these positive interpretations, psychiatrists traditionally considered the LSD state as an experimentally induced, temporary psychosis. This perspective was initially established in early mescaline research conducted by Beringer (1927), and it remains a leading paradigm (e.g. Leuner, 1962; Hollister, 1968; Hermle et al., 1992). In this understanding of the psychedelic drug state as a model of psychiatric pathology expressed in symptoms of schizophrenia and endogenous psychosis, researchers generalized a pathological perspective of drug effects as forms of mental illness. LSD-induced consciousness alteration was seen

here as a deviation from sanity and normalcy, and its popular association with mental illness fostered the modern myth that LSD “leads to madness.”

More recent research of large populations suggests that cognitive and psychological changes experienced in altered states of consciousness induced by psychedelic substances are a more universal pattern of psychological condition, independent of their etiology (Dittrich, 1985). Perceptual restructuring (VUS), self-transcendence accompanied by feelings of bliss and ecstasy (OSE), and dissolution or complete loss of a sense of self, accompanied by panic or horror (AIA), were identified as three basic dimensions, analogous to Huxley’s 1954 work *Heaven, Hell and Visions*. These and related consciousness alterations were found to evolve not only/uniquely from psychedelic drug intoxication but also from psychological triggers such as sensory deprivation, hypnologic/meditative states, sensory overload or emotional stress. Obviously, the phenomena observed in LSD states form part of the human psychological repertoire and serve as reactions to extreme conditions. Many related questions remain unanswered, due to the enormous complexity of LSD-induced states. Consequently, further empirical and theoretical work is needed on LSD’s actions and effects.

In sociological drug research, the impacts of extra-pharmacological factors on the experience of subjective drug effects have been emphasized in the concepts of set and setting (Zinberg, 1976, earlier proposed by Leary, 1964). For every psychoactive substance or drug, internal and external variables, i.e., individual and environmental factors have been found to basically influence the character and phenomenology of drug effects in the individual. Evidence has been reported regarding the social, cultural and physical environments’ effects on the subjective drug experience. Thus, drug taking has usually been closely linked to substance-specific subcultures that share social learning, collective knowledge, and rules and rituals for drug use.

Personality structure and traits have also proven to be factors that are strongly involved in the subjective experiences of LSD effects (Barr et al., 1972). Background knowledge and individual expectations towards drug effects were found to be important determinants of LSD experiences, according to Blum (1964) and Becker (1967), and these frequently assume the form of self-fulfilling prophecies. Habitual psychological states or conditions have also proven to be important determinants of individual drug reactions. Fischer (1979) shed light on the role of psychological constitution as determining the intensity and degree of LSD effects. Drug sensitivity, as well as psychic tendencies toward defense or responsiveness were generally related to small or large standard deviations in mental performance. Fischer described some individuals as “minimizers” and others as “maximizers,” not only of drug effects but also of general stimulation or sensory input.

In a later study on altered states of consciousness, researchers found that a predominance of rigid attitudes or conservative tendencies, as well as acute psychological lability, or emotional crisis were predictors of “bad trips” and negative experiences. They also identified predictors for positive or ecstatic LSD states, including mental flexibility, high degrees of coping ability and positive referencing with self and reality, and previous experiences with altered states of consciousness – whether or not these were drug-induced (Dittrich, 1994).

Setting factors relate to one’s physical surroundings and the situational environment of the drug experience, such as whether the drug was taken indoors or in natural surroundings, and the persons accompanying the LSD session, and these have been found to strongly influence the nature of the trip and of the drug’s effects. Subjective LSD experiences differed significantly in relationship to different situational contexts of use. For example, it makes a difference whether the drug is taken in comfortable, private locations or in clinical research settings (Masters & Houston, 1966; Blum et al., 1964), in psychotherapeutic and psychiatric settings (Grof, 1975, 1981; Cohen, 1970; Hollister, 1968, 1981), or in religious contexts (Pahnke, 1966; Leuner, 1993).

More subtle or indirect environmental factors relate to societal resources and cultural backgrounds. These include super-individual consensus norms and ethics, resulting in social constructions of reality (Berger & Luckmann, 1969) that shape cultural consciousness, encompassing collective beliefs and systems of value and interpretation. Popular truths and myths may introduce self-fulfilling prophecies (Watzlawick, 1976; Schneider, 2000). Mental constructs define possibilities and limitations of subjective thinking and experiences (Quensel, 1985). Socio-cultural environments are traded through social interaction and are always in a state of flux (Maturana, 1982, 1994). Societies consist of several subcultures that have substantial impact on the perceptions and ideation of their members. An application of these theoretical principles with regard to factors contributing to consciousness alteration processes seems appropriate because findings indicate that the subjective perception of LSD effects appear to be a variable mental construction strongly determined by the individual and his environment. The complex interrelationships between these external and internal extra-pharmacological factors call for a constructivist perspective in the investigation of LSD use and effects.

Further examination will consider LSD experiences within the contexts of culture, society, individual, and drug influences. Given the difficulty of specifying or defining substance-specific, or “LSD-eminent” properties due to pharmacological drug effects or extra-pharmacological factors, a basic question concerns the autonomy of LSD phenomena. Other considerations include the influence of self-fulfilling prophecies in triggering drug effects and the relationship between users’ socio-cultural

backgrounds and the subjective reality of LSD experiences. Subjective reports of LSD-induced phenomena experienced within cultural and sub-cultural environments of the 1990s will be compared to earlier observations in order to identify and analyze possible differences and common features. It is expected that these will contribute to the clarification of these phenomena related to LSD itself, as opposed to others that are related to individual reactions.

NONMEDICAL USE OF LSD

Early non-medical LSD use was limited to an intellectual avant-garde of writers, artists and musicians. This occurred during the 1950s in both Europe and the USA, later developing into a mass phenomenon in North America in the late 1960s. LSD then reached a large number of users in European cities around 1968, peaking in 1971. The collective 1968 protest movement of American youth had European counterparts in student activities in Germany, Switzerland and France. The early American research reported that users of LSD were mainly well-educated middle-class intellectuals and students, aged 20-30 years, with secure economic backgrounds (Blum et al., 1964; Brecher, 1972).

During the 1960s and early 1970s, LSD use was part of a politically motivated counterculture committed to social change and cultural liberation. The drug was perceived to be a tool for the liberation of the mind, and became a symbol and vehicle of the Psychedelic Movement. The latter involved a collective renunciation of established values and ideologies, which were perceived as materialistic, technocratic, loveless, repressive, and spiritually empty (Grinspoon & Bakalar, 1979; Stevens, 1987; Hofmann, 1979; Raetsch, 1993). Implications of LSD use were linked to personal liberation, intellectual freedom and self-realization. Several distinct subcultures emerged, seeking new lifestyles, values and forms of interpersonal community. Core messages of the LSD movement were expressed in literature, music, and the arts, as well as in other cultural products (Masters & Houston, 1969; Raetsch, 1993). As a social phenomenon, LSD has been the subject of popular social and political controversy and debate, a matter of general interest in the mass media, and has generated an extended modern mythology.

LSD use has been illegal in Germany since 1971, as indicated in paragraph 1 (hard drugs) of the German Drug Law (BtmG). Users of the drug nearly disappeared throughout the 1980s, and comprised much less than 1% of the German population. Prevalence of LSD use in the 1970s can only be concluded from indirect indicators: seizures of LSD peaked in 1970 with 178,925 hits of LSD confiscated, followed by nearly 90,000 in 1972 and an average of 60,000 annually between 1973-1976 (BKA, 1998).

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German statistics indicate there was a resurgence of LSD use during the 1990s, congruent with a similar rise in its use in the United States (Henderson & Glass, 1994). In 1998 for example, 2.8 % of Western Germany's population reported lifetime LSD use, and 1% reported current use (defined as any use during the previous 12 months). Users ranged in age from 18 to 30 years, as reported in a comparative trend analysis of national survey data (Kraus 1998b). This rate appears relatively high when compared to those reported for other "hard drugs" such as cocaine (1.6 %) and heroin (0.5 %). Simultaneous with the emerging ecstasy (MDMA) and other synthetic "party drugs" trend in the 1990s, recent LSD use (during the previous 30 days) rose from 0.12% in 1993 to 0.6% in 1997 (Kraus, 1998a). Police confiscation statistics confirm this observation, with the seizure of 78,430 hits of LSD reported in 1997, compared with a yearly average of 30,000 throughout the 1980s and early 1990s (Bundeskriminalamt [BKA], 1998).

Modern LSD use has been said to be part of the "party drug" phenomenon, along with ecstasy and other drugs used in the techno subculture (Simon, Tauscher, & Pfeiffer, 1999; Schroers, 1998). Apparently confirming this claim, several investigations found that rates of LSD lifetime experience and recent use were significantly higher in the ecstasy use environment, ranging from 33% to 46% (Tossmann & Heckmann, 1997; Rakete & Fluesmeier, 1997; Schroers, 1998). Among these populations, psilocybin experience and use are often reported as well. LSD is only taken occasionally (> monthly), however, and often within the context of multiple drug use taking place in the party scene. A majority of respondents (55%) preferred taking LSD outside of party locations in self-created settings (Schroers, 1998).

Complementary use of LSD and other psychedelic substances are popular in other subcultural groups as well. A current study of cannabis users, for example (n=700), found LSD experience by 44% and psilocybin experience by 55% of the participants; the largest proportion of current use (65%) occurred in the age group 25-31, followed by 39% among the 14-17 olds (Eul, 2000).

No detailed information is available about actors, modalities and implications of modern LSD use. Considering the general socio-cultural changes that have occurred in Western Europe during the past 30-40 years – moving through changing values, morals and social role definitions that were initiated in the 1960s by the tradition-oriented "economic miracle" generation, to the 1990s generation of welfare, affluence and leisure. In the latter context, given the properties of the party drug subculture, with its predominance of hedonistic and fun-oriented motivations and absence of political activism – we may expect differences in use patterns, contexts and intentions compared to early subcultural LSD use. Further questions concern the possible impact on LSD phenomenology, and the subjective drug effects users

have experienced. However, no study of subcultural LSD use has ever been done in Germany. Open questions and gaps in research indicate the need for more detailed investigation of LSD use and users.

With regard to harm reduction issues, LSD-related risks and harmful consequences are another research problem. LSD and analogous substances appear to have no addictive potential. Due to the rapid development of tolerance and cross-tolerance, ingestion intervals of at least four days are generally required to sustain the desired effects (Leuner, 1962; Julien, 1997). Despite this, the human organism seems to be able to autonomously produce, either partially or completely, and then to maintain, the drugged state. Thus, the reported problem of “flashbacks” suggests that it is possible to experience LSD related phenomena long after consumption occurs. LSD flashback phenomena are occasionally reported and described as spontaneous reactivation of LSD effects without ingestion of the substance (Shick & Smith, 1970). These occur in close relationship with constitutional factors that influence the individual’s experience of the drug (Fischer, 1975, 1979, 1986), and may last for minutes or hours. Often these flashbacks have occurred in combination with situational triggers or cues, including a variety of persisting post-hallucinogenic perceptual disorders (PHPD) classified as a clinical syndrome in DSM-IV (1996).

A variety of more durable psychological problems have been reported as possible adverse consequences of LSD use (Cohen, 1960; Malleon, 1971; Abraham & Aldridge, 1993). The occurrence of reductions in cognitive performance, anxiety and other affective disorders, as well as psychotic reactions seem to correspond to individual predisposition or vulnerability, and are closely tied to uncontrolled conditions of use. In a small percentage of cases LSD has been reported to provoke prolonged states of psychosis that may last for hours or months, popularly known as “permanent trips.”

LSD-induced psychosis and bad trips have been interpreted as a dynamic fixation of the mental condition (Leuner, 1962; Grof, 1981), depending on the subject’s reaction. Attempts to suppress or resist the drug’s effects, in combination with panic reactions and a general feeling of helplessness have been observed to provoke, worsen and prolong negative trip phases. Some individuals are capable of actively modifying or controlling LSD-induced states. Positive experiences seem to correlate with a general readiness for acceptance, devotion, intensification and support of the process of consciousness alteration.

In 1997, 3200 persons consulted German psychosocial services to receive treatment for psychiatric problems following the use of LSD and analogous substances. In comparison, fewer than 50 such cases were identified in 1992 (Simon et al., 1999). Several factors might contribute to an explanation of these data. Among them, an increase in LSD use seems to have occurred in conjunction with

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disadvantageous conditions of use, which need to be explored and identified in order to reduce related risks. In order to develop effective harm reduction measures, there is a need to learn more about ways of coping with LSD-induced altered states to gain a better understanding of the factors contributing to making these negative or positive experiences. In the investigation of the determinants involved in the complex interactions between drug and individual, qualitative research methodology is seen as an appropriate tool. Subjective reports from experienced users of psychedelic drugs can help us gain insights into both the nature of the subjective experience as well as the internal and external factors that affect it.

METHODS/STUDY DESIGN

This qualitative project was designed to collect data related to the socio-cultural contexts of contemporary LSD use and to explore the subjective phenomenology of LSD-induced consciousness alteration. In this study earlier research observations will be compared with those found here, looking for common features and differences of contextual and phenomenological data. With regard to harm reduction, an important objective is the identification of activities and mechanisms involved in the dynamic modulation of LSD-induced states of consciousness in order to evaluate factors that enhance risk and protection.

SAMPLE

Study participants were recruited through the distribution of an informational flier that announced the study and appealed for voluntary participation. Criteria for inclusion included a minimum of 5 lifetime experiences with LSD and/or analogous substances, with the last psychedelic drug experience having occurred no more than 12 months earlier. Additional participants were identified through snowball sampling, where volunteer informants convinced some of their friends to participate. Between October 1999 and May 2001, 26 persons with an age range of 19 to 53 years were interviewed. An additional 14 interviews will be conducted to achieve the planned total of 40 persons. Ultimately the research team will have completed interviews with 20 male and 20 female subjects, persons representing a wide range of ages and socio-economic backgrounds. The sample is highly diverse, although it cannot be considered representative of all LSD users. For example, young teenage users and heavy users of other substances have not been contacted.

DATA COLLECTION

Narrative interviews were conducted according to the methodological principles indicated by Lamnek (1989), using a non-invasive conversational style where the interviewee is considered as the expert with regard to his world of experience.

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Each interview took place in environments chosen by the participants, and lasted between one and four hours. They began with participants being asked to report the details of their LSD use and experiences, along with their personal interpretation of these events. Matters of interest mentioned in the narratives were explored further and these were complemented by open-ended questions designed to ensure that specific themes of interest to the research were discussed.

DATA ANALYSIS

The interview transcriptions are being examined utilizing the qualitative content analysis method developed by Mayring (1983). Each narrative has been analyzed for thematic content. Comparing the contents obtained in different interviews allowed for the identification of general themes. These common categories were then extended and clarified, based on the information provided. Core categories concerned contextual aspects of LSD use including: (1) patterns of use; (2) circumstances of use; (3) reflections on drug use and drug experiences; and (4) subjective drug effects such as acute consciousness alterations, variability and dynamics of the drugged state, and after-effects that have been experienced.

Given that this is an ongoing study, the generalizations described below are tentative and must be interpreted with caution. Given the high volume of information that is being collected, careful multi-perspective examination in the form of a detailed content analysis will be implemented through 2002. The study will be completed in 2003.

SAMPLE PROPERTIES

Individual study participants had used LSD between 3 and 300 times and psilocybin mushrooms from 5 to more than 100 times in a period spanning several years. LSD users often considered themselves intellectuals. Sixteen participants were currently or had been attending university. Ten other respondents were non-academics. With few exceptions, LSD-experienced persons expressed great interest in psychological and philosophical themes and metaphysical humanistic questions, especially as these relate to professional and educational issues. Most respondents expressed a strong intrinsic motivation to assist in the research, as the topic was closely related to their own thoughts and interests. More than half of the sample reported they participate in various kinds of creative activity and productivity, such as music, poetry, writing or painting. Most embraced alternative lifestyles, although these were individually quite varied, and were expressed in their general attitudes and outward appearance, such as hairstyles and clothing. Use of LSD and other drug experimentation was expressed as part of their "otherness" and cultural identity.

In this category, information about the number and frequency of LSD experiences, periods of LSD use, dosages taken, use of other drugs and psychedelics, and rituals of use were provided through personal reports.

LSD use is an occasional, experimental activity for the majority of participants, most of who have taken the drug two to four times a year, with intervals of many weeks and months elapsing between individual experiences. Some participants took breaks of several years between sessions. Male participants reported they had first taken LSD between the ages of 16 or 17 years, while most females initiated use around 20 years of age. Nearly all male informants reported one or more phases when they consumed "excessive" (self-defined) amounts of LSD and psilocybin as part of poly-drug use phases, while few women had experienced this (there were two exceptions). Overall, men report much greater use of LSD, some of them as many as hundreds of trips, while women report between 5 and 30 trips. Most women said they have been very careful about what dosage they take, while the men often report they have consumed large doses. Nearly all study respondents had also experienced psilocybin on several occasions. Participants have tried a wide range of other drugs including cocaine, amphetamines, ecstasy, inhalants and hallucinogenic plants. Nearly all of the men and half of the women regularly use cannabis. Only two of the interviewees reported a history of heroin addiction. Among the sample, three informants reported they had discontinued all LSD use; two of these had given up illicit drug use altogether (including alcohol), while one person had quit use of LSD, psilocybin and other "hard drugs." All remaining persons expressed a readiness to continue occasional use.

The informants suggested that LSD is rarely taken spontaneously whenever the opportunity presents itself. They said they had great respect for LSD and other psychedelic drugs, and were well aware of their potential dangers. A variety of rituals and rules for LSD use were reported, including precautions and safety measures that had been taken. For these persons, LSD experiences were usually planned well in advance so that they would occur in comfortable environmental circumstances. Most persons described personal rituals they had developed, including mental preparation, setting aside sufficient time, selection of favorite places, companions and sources of stimulation such as natural settings, music, lights, etc. Other preparations included a range of precautions taken in order to exclude or avoid unwelcome incidents, and to prevent bad trips. Three persons had participated in structured spiritual and therapeutic group rituals while under the influence of psychedelic drugs.

CIRCUMSTANCES OF USE

This category was constructed to encompass information on set and setting as they relate to LSD use. A wide range of setting factors was reported, including location and physical environment, planned activities and available stimuli, the inclusion of select people and social interactions. Two patterns were observed among these LSD users. One group reported behaviors focusing primarily on reducing and/or controlling inputs and situational factors. A second group focused on the general enhancement of stimulation and activities while under the influence of the drug.

LSD is usually taken in a protected or familiar setting, especially at one's home, or in natural outdoor surroundings such as forests, at the sea, in meadows or at the riverside. One respondent had taken LSD and psilocybin in an isolation tank. Other, less controlled situations for LSD use encompassed all kinds of private and public parties, rock concerts and open-air festivals, rave events, or disco clubs. Some persons preferred to wander around town and elsewhere while under the influence. Careful consideration is usually given to the choice of persons who are to be present as trip companions. Most individuals described interpersonal aspects like confidence, familiarity and reliability to be important in LSD experiences. While LSD is most frequently taken with someone else, such as a close friend or lover, or in small group contexts, a minority of the respondents preferred tripping alone. Contact with sober or "normal" people while one was under the influence was often experienced as problematic. Although users engage in a variety of activities, most prefer self-reflection and introverted contemplation of the world and the experience of life, along with the enjoyment of sensual experiences and music. Interpersonal exchange and intense conversations are also said to occur frequently. Some trippers enjoyed active challenges such as trying to perform in everyday situations and activities. These included such actions as walking around in the streets or in a natural place, dancing, driving or riding in a car, riding on a bicycle, taking carousel rides, or swimming – all treated as mind or adventure games.

As regards the subcultural environments preferred by LSD users, some participants expressed a personal preference for the ecstasy and techno subcultures, mainly in conjunction with their use of ecstasy and related fun drugs. Most of these persons only used LSD and psilocybin outside the party context, however, as they saw LSD as a more serious substance, and one that requires careful handling. Despite the cautious approach taken by some, however, 5 persons had used LSD at techno parties, considering this a relatively safe and protected surrounding. Nearly half of the study sample expressed a close affinity for the 1960s-1970s "hippie" subculture and values. These persons were generally over 30 years of age, preferred more

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intimate or natural situations for their LSD use and avoided closed rooms and/or crowded situations.

A variety of set variables were reported, encompassing individual emotional states before the drug experience, expectations, and cultural or philosophical backgrounds. Generally, participants wanted to be in a good mood and feeling stable in order to assure a positive LSD trip, although a few reported the opposite. For example, some persons said they had taken LSD when they were feeling depressed or unstable, although they experienced positive ecstatic effects. Several respondents considered their normal psychological condition to be depressed, neurotic, and unstable, and suggested that this had been true before they ever tried psychedelic drugs.

Expectations about what may occur under the influence of LSD largely involved a search for answers to questions about self, the world and one's life. Consciousness alteration was considered to have therapeutic value and to support personal development, in the form of positive feelings of liberation of the self and the mind, and expression of mental possibilities. Some subjects were fearful of experiencing bad trips that would lead to a loss of self, helplessness or accidental overdoses they thought could trigger psychoses. Most of the users expected to experience occasional bad trips and considered this a normal risk of tripping. The persons in this sample were very knowledgeable about LSD and other drugs. Nearly 80% of the subjects reported they had a general interest in philosophical and psychological questions, themes, and related theories and actively searched for literary, philosophical, psychological and religious topics with which they could discuss, explain and understand their LSD experiences.

REFLECTIONS ON DRUG USE AND THE DRUGGED EXPERIENCE

This category included reported reasons for LSD use, individual interpretations of LSD experiences, subjective theories related to LSD use and its effects, consequences of use, and comparisons with non-drugged states.

With regard to motivations for LSD use, two main approaches were identified. These do not represent two distinct groups of persons, however, as many had embraced both of them at some point. Nearly a third of participants reported hedonistic purposes as their primary motive for LSD use. They took the drug to have fun, to enhance a good or special time, and for its entertainment value. Some reported they enjoyed the potential danger involved as a thrill. For another third of participants, their central motives were closely and uniquely linked to self-exploration, self-reflection and explicit therapeutic purposes. A majority reported individual combinations of both hedonism and self-analysis. Often these LSD experiences were considered powerful sources of internal wisdom or supernatural

knowledge, as well as providing sensual and intellectual enjoyment. All of these users reported a clear affinity for adventure and a fascination regarding the unpredictability of the LSD state, the subjective phenomena experienced, and the quality of the experience itself.

A total of 21 out of 26 respondents said their experiences with LSD and psilocybin had given new meaning to their lives, and linked their experiences with these drugs to profound changes in their self-perceptions and understanding of the world. These included insights into the “real” nature of things and mental and natural processes they consider highly relevant in the understanding and construction of their own personality, life values, the world, personal relationships and societal functions.

Mainly positive consequences were reported concerning attitudes about self, enhanced understanding of the world’s functioning and interpersonal relationships – on both microscopic and macroscopic levels. In many users these were linked to elementary or even drastic motivational and behavioral changes that were seen as reflecting improved personal competence. Four respondents identified negative consequences associated with having achieved “too much” insight, attention that fostered a permanent destabilization of their personality structure, accompanied by enhanced sensitivity or vulnerability, anxiety, depression or paranoid tendencies. Two persons indicated that these negative consequences led them to terminate LSD use.

Subjective theories and interpretations of individual LSD experiences included scientific notions such as chaos theory, biological evolution, psychological concepts, holistic approaches, constructivist philosophy, and religious, and esoteric perspectives. Most users had developed their own theories and folk explanations for the genesis of bad trips, trip prolongation, and flashbacks. They felt that bad trips are related to high dosages or overdose, tripping alone, and the inability of the individual to recognize that the problems they are experiencing are side effects of LSD (or psilocybin). Most persons felt that temporary unawareness of drug intoxication is LSD’s greatest danger, as this can result in a general incapacity to modulate the direction of the drugged experience.

DRUG EFFECTS

Themes related to drug effects encompass descriptions of cognitive processes that result from subjective LSD-induced altered states of consciousness. These can be differentiated as: (1) acute consciousness alterations in perception, thought and emotion; (2) variability and dynamic modulation of the drugged state; and (3) after-effects.

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ACUTE EFFECTS

In this category, reports of acute psychological changes and phenomena related to the LSD-state were collected. These encompassed descriptions and examples of cognition and consciousness alteration. A vast range of alterations were reported, including changes in sensual perception, time sense, communication and verbalization skills, emotion and affect, empathy and interpersonal interaction, intellect and thinking, ideation, interpretation, sense of self and ego function, and level of activity. The similarities, differences, and consistency of these LSD experiences have not yet been empirically evaluated, so we cannot yet compare these findings with those observed in earlier phenomenological experimental research. However, several preliminary impressions are summarized below.

In some of the interviews only a few elements in the potential range of LSD effects were reported, whereas many more reports described a much wider spectrum of phenomena. Generally, there was an observed relationship between degrees of knowledge and the range of subjective phenomena reported. While all users reported feelings of happiness or enthusiasm relating to a liberation from the sense of self or “ego predominance,” metaphysical or mystical experiences were limited to those persons with philosophical proclivities. While experiences of self-transcendence were frequently reported, most users described the continuous presence of an observing and reflecting “meta”-self, which could prevent them from a loss/dissolution of themselves – an event that could lead to loss of control and panic reactions.

Most users had experienced bad trips or at least intense phases of anxiety at least once, sometimes in conjunction with losing cognizance of the fact that they were under the influence of LSD. In the latter circumstance, they confused the drugged state with reality, and a reality that was difficult to cope with.

Subtle differences were also described concerning the effects of LSD and psilocybin. The LSD state is often anticipated as providing a harder, clearer, and more profound change of mental functioning and therefore offers quite limited possibilities of direction. In contrast, the psilocybin state was described as softer, more natural, and more likely to produce positive experiences. Participants compared LSD-induced states of consciousness to extreme psychological or existential situations they had experienced, such as love ecstasy or emotional crisis, rather than to dreams or meditation.

VARIABILITY/DYNAMICS OF THE DRUGGED STATE

Central themes associated with this category include descriptions of trip course dynamics, changes in experience during the drug’s peak phase, and internal and external factors involved in modification of the subjective LSD state. Factors

affecting the direction of the drugged state were said to relate strongly to conditions of use and shifts between internal and external stimuli. Changes of location, activities and/or external stimuli were frequently staged to influence the LSD experience. According to the users' accounts, some people are capable of "sobering up" quickly as an act of willpower if the situation requires it. Other methods of coping with the LSD state were subtler, including the use of music and personal interactions. Friends often successfully support and introduce positive changes into the LSD-state, although under different circumstances they can also trigger bad trips. Most persons stressed that one had to be particularly relaxed towards the phenomena experienced under LSD in order to have a positive trip. Attempts to resist or control the drug's effects were described as dangerous, frequently a beginner's mistake, leading to fixation and the provocation of bad or disagreeable phases. Many persons reported that with repeated experience it was possible to learn to handle LSD-induced states. Five of the respondents said they were able to direct or modulate the nature of the LSD-state in desired ways or to reverse disagreeable conditions. Eight subjects reported that they had confronted bad experiences they were unable to overcome until the pharmacological effects lessened as the drug was metabolized.

AFTER-EFFECTS

This category dealt with feelings/conditions the day after LSD ingestion, flashback experiences, and residual drug effects. The most common residual effect of LSD use was said to be a psychedelic afterglow, as the drug's effects softly diminish during the 24 hours following its ingestion. Sensations of joy, energy and motivation as well as sleeplessness often directly follow the LSD experience. Occasionally, a hangover condition was reported in connection with an especially high dose, or when the drug had been used in combination with too much alcohol or with other drugs. Six subjects reported they had experienced flashbacks, while two other persons described similar phenomena but attributed them to something else. The occurrence of flashbacks appears to be closely related to the individual's belief in their existence. A few persons claimed they could rationally provoke a partial flashback phenomenon. Five persons indicated they had experienced a drug state fixation, with prolongation of the drug's effects that lasted between 2 days and 4 weeks. In most of these cases very high doses were involved, although they also occurred in conjunction with fear and an absence of inner controls.

In a number of cases, psychotherapy was undertaken following LSD use. Ten individuals said they were experienced subjects of psychotherapy, although these sessions were not a product of their drug experiences but had been independently sought out for purposes of self-exploration and understanding. Two of the study

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respondents said that they had sought psychiatric assistance because of their psychedelic drug experiences.

DISCUSSION

In this section the writer explores the preliminary findings of this LSD study. Among the limitations of this qualitative investigation, the small sample size stands out as a significant concern. Another problem that plagues all researchers who study illicit substances is that the doses taken are not controlled and the quality of the substances sold as black market LSD are unknown; undoubtedly the drug contains a variety of chemicals and its effects are therefore highly variable.

CULTURAL BACKGROUND AND SOCIAL FUNCTION OF MODERN LSD USE

A vast range of possibilities offering many choices to individuals have characterized Western Germany's socio-cultural environment in the 1990s. People have been flooded with all kinds of information and concepts, although many are not equipped with appropriate social resources to handle them. In their socialization processes, an increasing variety of demands have been placed on adolescents, who are not always able to respond appropriately, resulting in increased emotional stress and crisis. The orientation process related to individualization now comprises young adulthood up to age 30, well within a framework of cultural tolerance and societal commitment to perpetual youth. Additionally, the computer age with its increased speed and nearly unlimited possibilities, choices and alternatives makes it difficult to realize one's individuality.

Through the 1980s and 1990s, concepts such as self-realization or individuality have developed and advanced as common values, serving as a moral impetus, especially among well-educated or intellectual groups within society. Thus, these ideas are no longer associated with rebellion as they were in the 1960s and early 1970s, but have become an elementary rationale of life.

Despite changing norms, illicit drug use is still practiced and perceived as an expression of an alternative lifestyle, a fact confirmed by high rates of cannabis use among the German population (Simon et al., 1999). The popularity of psychoactive substances that have more predictable effects than those associated with psychedelic drugs has been related to users' needs to function socially in both recreational and work-related situations (Amendt, 1992). In response to varying social demands, people often use drugs for instrumental purposes, either to increase performance (with coffee, cocaine, or amphetamines), or to achieve relaxation (with alcohol, opiates, or tranquilizers). This tendency is also illustrated by the preliminary finding that LSD use in Germany largely occurs independently of the party drug scene and ecstasy subculture. While substance availability is augmented by the party drugs

trend, LSD use generally takes place in different environments. Moreover, LSD is not known as a party drug that is suitable for a predictable enhancement of fun activities. Rather, it may induce much too complex consciousness alteration and unpredictable effects. Consequently this drug does not fulfill the demands of those individuals participating in the party culture. Seen from the user's perspective, one important function of LSD is the achievement of enhanced self-understanding, which in turn can lead to improvements in self-perception and interpersonal relationships. This suggests that the drug, although a culturally unacceptable tool, is being taken to reach a socially legitimate goal, such as successful individuation and cultural adaptation. General life competence can be expressed in terms of definition of personal life goals and values, inventing positive and livable constructions of the self and the world, learning to handle oneself and to cope with problems and difficult situations, the development of suitable perspectives for professional and intellectual work, establishment and maintenance of stable social relationships, and other important parts of personality development which often require consciousness alteration in a more general sense. In this sense, nearly 40 years after the 1960s rebellion, psychedelic drug use, previously a form of deviance, has become a somewhat normal means of individuation.

Whereas culturally integrated drugs are meeting an existing socio-cultural matrix of reality and interpretation of possible subjective effects which offer various explanations and models for comparison, subjective LSD phenomena still meet with an absence of cultural concepts or constructions in post-modern Western European civilization (Scharfetter, 1980). In a context without supportive cognitive and social structures, the effects of LSD are experienced as foreign and exotic or even frightening, featuring a high degree of dissociation from cultural knowledge, and missing language terms with which to properly communicate them. These gaps in popular knowledge, partly compensated for by popular myths, keep many persons from ever trying LSD-like drugs, while offering others more than all other psychoactive substances the occasion to experience something completely different from normalcy. This may be an important element in the appeal of and fascination with LSD and other psychedelics to a self-selected, small population of intellectual-philosophical searchers and psychonaut adventurers.

QUESTIONS TO BRAIN RESEARCH AND NEURO-PSYCHOLOGY TO EXPLAIN LSD INDUCED ALTERED STATES OF CONSCIOUSNESS

Due to the complex interrelationships between pharmacological and extra-pharmacological factors, in the case of LSD it is difficult to recognize and clearly specify "drug effects" per se. Many examples of the substantial interpersonal and intra-personal variability of subjective phenomenology can be identified in the

research literature. Biochemical and neuro-physiological research indicates that LSD affects enhanced input and output in the cognitive system due to its impact on the brain's filtering system for normal information processing. There is reason to believe that this state of heightened activity of the central nervous system serves as the neural basis for experiencing all potential effects, typical not only of LSD but also those induced by psychological triggers. Effects produced by LSD as an unspecific activator or catalyzer (Grof) are similar to those produced by the human organism in response to extraordinary stress or "peak experiences" (Maslow, 1968). Considering that all phenomena can be evoked in the "normal" psychological repertoire under extreme conditions (Dittrich, 1985), these serve as a more universal macroscopic pattern of cognitive functioning. Consequently, LSD can be seen as a magnifier of normal mental processes. This may also be seen as providing proof that "drug effects" as such do not really exist in the case of psychedelic substances. Cognitive functions occurring in drugged and non-drugged altered states of consciousness appear to complement those characterizing the normal one, offering mechanisms of psychological survival or coping under difficult conditions that are very much related to enhanced learning ability, accompanied by a temporary destabilization and deconstruction of established perceptual and ideational concepts. High degrees of fluctuations and phase transitions are observed to characteristically evolve when changes in mental organization are necessary, and considered as the neural base to enable origination of new neural pathways and connections (Stadler & Haken, 1990).

Future neuro-scientific investigations could offer new perspectives into the LSD state as a window for the development of learning processes. Investigators could also explain the frequent initiation of processes of personal development recognized as the "healing potential" of LSD in early research. Its function in (self-) therapy aims to enhance flexibility in perceiving reality, and to generate new subjective constructions of reality. Also, the dangers related to different phases of psychological crisis must be considered holistically, and a new perspective on psychosis as a psychological state resulting from an unsuccessful or incomplete attempt at mental adaptation (e.g. Scharfetter 1990, 1999) could complement existing principles of psychotherapy, in a guided form of consciousness alteration, as proposed e.g. by Watzlawick (1976).

Despite these positive prospects, however, LSD must also be considered in regard to its potential dangers. Future investigations of factors involved in successfully dealing with unresolved psychological crisis will be needed to learn more about implications of dangers associated with LSD-like drugs.

IMPLICATIONS FOR HARM REDUCTION

Although LSD is illegal and known to be potentially dangerous, young people are often attracted to it and to other psychedelic drugs as well. The mystique and mythology that surrounds the drug, as well as the widespread respect young people hold for LSD, prove tempting to those who want to demonstrate their courage. In doing so, some have underestimated the drug's dangers.

These observations suggest that the prevention of LSD-related harms cannot be achieved by repression and punishment. Instead, we must consider the suggestions and coping strategies recommended by experienced LSD users. These may concern the appropriate circumstances of use as well as needed psychological resources and behavioral competencies. General rules for safer use are frequently implied in users' reports and these are often emphasized as being of special importance with regard to a first LSD experience. They have also been reported in the literature for more than 35 years. A compilation of those "rules for safe[r] use" include the following:

- It is necessary to take the drug in a supportive environment where one can control the input and stimulation that is available. This may include careful preparation of the physical environment, and scheduling the time that is set aside for the LSD experience.
- LSD should not be taken alone. Ideally, the drug would be consumed in the presence of a non-drugged, experienced person who can take care of the person who is tripping and protect them from negative external influences. Given the enhanced suggestibility of the drugged individual, supportive approaches can be adapted from the early concepts of the "psychedelic guide" (Masters & Houston, 1967), as well as principles of crisis management that are common in psychotherapy (Grof, 1981).
- The user should be made constantly aware that they are temporarily drugged, in order to avoid their confusing this state with reality.
- The user should be advised of any changes in location or activities and stimuli, and never to resist the drug, but to devote themselves to it and to relax so as to minimize risks.
- Potential users should be advised that those who have inordinate levels of fear or doubt should not take LSD or other psychedelics.
- Information should be readily available that provides insight regarding potential drug effects and implications of altered states of consciousness, as well as possible dangers. Such information should be provided using specific media designed to reach potential target groups. Additionally, the professional help

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system should be ready to offer specific counseling and knowledge related to psychedelic drug use.

- Drug testing measures would be another contribution for safer use and should be offered at locations where LSD availability and/or use is most likely to be encountered, such as at discotheques, raves, concerts and related events.

Finally, in addition to these harm reduction activities, early prevention strategies may be initiated before young people are likely to have experimented with drugs (BzgA, 1994, 1998; McArdle et al., 1998). Those strategies can be helpful in dealing with general stress and crisis management connected to mental and emotional developmental processes. Anti-stress training, including techniques for relaxation, such as autogenic training, the use of active imagination, yoga and meditation could easily be realized and integrated into typical school schedules. Those methods would heighten the competency of potential risk groups to better handle altered states of consciousness, regardless of how they were induced. Regular involvement in non-drug activities that promote similar altered states of consciousness could reduce the demand for drug-induced states among students. It is clear from the available evidence that much more research will have to be done in order to be able to answer the questions we have raised about LSD and other psychedelic substances.

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