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Michael Lerner
Bond University, Michael_Lerner@bond.edu.au

Michael Lyvers
Bond University, michael_lyvers@bond.edu.au

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Michael Lerner, B.A.(Honours), & Michael Lyvers, Ph.D.

Department of Psychology

Bond University

Gold Coast, Queensland 4229 Australia

Address correspondence to:

Associate Professor Michael Lyvers

Phone (61) (75) 595 2565

Fax (61) (75) 595 2672

e-mail: mlyvers@staff.bond.edu.au
Abstract

Psychedelic drugs such as LSD and psilocybin are often claimed to be capable of inducing life-changing experiences described as mystical or transcendental, especially if high doses are taken. The present study examined possible enduring effects of such experiences by comparing users of psychedelic drugs \( n = 88 \), users of non-psychedelic illegal drugs (eg., marijuana, amphetamines) \( n = 29 \) and non-illicit-drug using social drinkers \( n = 66 \) on questionnaire measures of values, beliefs and emotional empathy. Samples were obtained from Israel \( n = 110 \) and Australia \( n = 73 \) in a cross-cultural comparison to see if values associated with psychedelic drug use transcended culture of origin. Psychedelic users scored significantly higher on mystical beliefs (eg., oneness with God and the universe) and life values of spirituality and concern for others than the other groups, and lower on the value of financial prosperity, irrespective of culture of origin. Users of non-psychedelic illegal drugs scored significantly lower on a measure of coping ability than both psychedelic users and non-illicit-drug users. Both groups of illegal drug users scored significantly higher on empathy than non-illicit-drug users. Results are discussed in the context of earlier findings from Pahnke (1966) and Doblin (1991) of the transformative effect of psychedelic experiences, although the possibility remains that present findings reflect pre-drug characteristics of those who chose to take psychedelic drugs rather than effects of the drugs themselves.
Psychedelic drugs are claimed to have the potential to induce profoundly spiritual or mystical experiences (e.g., Bakalar, 1985; Hasler et al., 2004; Hofmann, 1983; Horgan, 2003; Huxley, 1956; Maslow, 1964; Leary, 1965; Pahnke, 1966; Shanon, 2003; Strassman, 2001; Watts, 1965). Presumably because of such effects, plant psychedelics such as _psilocybe_ mushrooms, peyote, and ayahuasca have been central to the traditional spiritual and healing ceremonies of some indigenous cultures of the Americas. Even today, the Native American Church is permitted to use peyote legally for religious purposes in the United States, and the syncretist religious group União Vegetal is allowed legal use of ayahuasca for similar purposes in Brazil (Shanon, 2002). The most potent of all psychedelics, the semisynthetic ergot derivative LSD, was initially regarded as an agent that induces a “model psychosis” but subsequently LSD was utilized sporadically in depth psychotherapy and alcoholism treatment in the 1950s and 1960s (Grinspoon & Bakalar, 1979; Grof, 2001). Before all use of psychedelics was made illegal in most countries, there were two main models of LSD psychotherapy: “Psycholytic” psychotherapy administered frequent low doses of LSD to facilitate the emergence of material from the personal unconscious and was based on a psychoanalytic paradigm, whereas “psychedelic” psychotherapy administered a limited number of high doses with the goal of inducing a transpersonal, mystical experience that would have long-lasting transformative effects on behavior (such as alcohol abstinence in alcoholics). However, clinical research on the efficacy of LSD or other psychedelic agents for psychotherapeutic purposes was generally marred by poor research design (Ludwig, 1970).

In the only published controlled experiment on the spiritual potential of psychedelics in humans, Pahnke (1966) tested claims that psychedelics are capable of inducing religious experiences. In a Boston chapel on Good Friday, drug-naïve divinity students were given either a high dose of psilocybin or an active placebo in double-blind fashion. Most subjects in the psilocybin group reported profound spiritual insights with transformative effects that persisted for decades, according to a follow-up study by Doblin (1991). However, one subject who received psilocybin suffered a psychotic reaction during the experiment, highlighting one of the major risks of psychedelic drug
Psychedelic Drug Users

use. Although psychedelics are not addictive, and frequent use is rare due to the intensity of effects (Grinspoon & Bakalar, 1979), these drugs can be dangerous due to the unpredictable and overwhelming mental changes they may induce. Time slows down or stands still, brilliantly colored visions unfold in the mind’s eye, and emotions may range from terror and panic to spiritual ecstasy and transcendence. Normal reality may be left far behind as the user seems to enter another dimension, and near-death type experiences are not uncommon. Users often claim to encounter God, to merge with the Cosmos and undergo death and rebirth during a high-dose psychedelic experience.

Reports from some users resemble classic Buddhist or Hindu descriptions of self-realization or enlightenment (Grinspoon & Bakalar, 1979; Horgan, 2003; Watts, 1965). This mystical experience is said to have a universal aspect that transcends cultural context and may cause lasting and profound changes in the user (but see Horgan, 2003, for a critical discussion of this claim). If psychedelic drugs can sometimes induce mystical experiences, as often claimed, then the values and beliefs of psychedelic users should differ in crucial respects from those endorsed by users of other illicit drugs such as marijuana, amphetamines or heroin, as well as those endorsed by non-users of illegal drugs. Further, to be truly universal, the values and beliefs of psychedelic users should transcend cultural context. The present exploratory study examined these hypotheses by comparing users of psychedelic drugs with users of non-psychedelic illegal drugs (as a control for correlates of illicit drug use in general) and non-users of illegal drugs on values, beliefs, coping ability and empathy. Samples were drawn from two culturally distinctive countries, Israel and Australia. We predicted that certain characteristics of psychedelic drug users would distinguish them from the other two groups across the two different nationalities. Mystical beliefs such as oneness with God and the universe, empathy (commonly presumed to follow from such beliefs), confidence in one’s ability to handle life stress, and life values such as spirituality, creativity, humility, concern for others, and concern for the environment were all expected to differentiate psychedelic users from the other groups, irrespective of cultural background. Psychedelic users were also expected to be
less concerned with financial prosperity and achievement than the other groups, reflecting a less materialistic value orientation. Two values, belonging and loyalty to group, were expected to be higher in Israelis than in Australians irrespective of drug use, on the basis of the presumed ethnic/religious group identification of Israelis.

Method

Subjects

A total of 183 volunteers participated in this study. There were 41 Israeli and 47 Australian users of psychedelic drugs (LSD, psilocybin, mescaline), 18 Israeli and 11 Australian users of other illegal drugs (10 marijuana only, 17 marijuana + amphetamines, 1 amphetamines only, 1 marijuana + heroin) who had never tried psychedelics, and 51 Israeli and 15 Australian non-illegal-drug-using social drinkers. Mean age was 35 years (range 21-70 years). For purposes of this study, participants were classified as psychedelic users only if they reported having had at least one overwhelming high-dose psychedelic experience. This was because some recreational drug users today take low doses of a psychedelic drug (eg., 50 mcg LSD, 1 gm of *psilocybe* mushrooms) to enhance their appreciation of the music and social scene at dance clubs or “rave” venues. As low dose psychedelic use is unlikely to induce a mystical experience, prospective participants who only reported this type of psychedelic use were excluded from the study. For similar reasons, use of marijuana or “entactogens” such as MDMA (Ecstasy) or MDE, which are sometimes considered mild psychedelics, was not sufficient for classification into the psychedelic user group. Use of dissociatives such as ketamine or PCP likewise did not qualify as psychedelic drug use in the context of the present study, as the “psychedelic” category was conservatively restricted to the “classic” serotonergic agonist hallucinogens – the drugs most widely cited as capable of inducing mystical experiences. This study was approved by the Bond University Research Ethics Committee and was funded by a grant from the Multidisciplinary Association for Psychedelic Studies (MAPS).
Materials

Drug Use Questionnaire (DUQ; Barker & Lyvers, 2002). The DUQ assesses personal history of use of alcohol and illegal drugs such as cannabis/marijuana, MDMA/Ecstasy, cocaine, amphetamines, heroin/opiates, and psychedelics (LSD, psilocybin, mescaline), as well as demographic information. A short qualitative section was added asking if the psychedelic user has ever had a profound or overwhelming high-dose psychedelic experience; an affirmative response was necessary for inclusion in the psychedelic user group (see above).

Life Values Inventory (LVI; Brown & Crace, 1996). The quantitative section of the LVI used in this study measures 14 life values by means of 42 items rated for importance to one’s life on four-point Likert scales. For purposes of the present study, only 9 of the 14 values were analyzed as they were deemed most relevant to the psychedelic experience and/or to cultural differences between Israel and Australia: Spirituality, Concern for Environment, Concern for Others, Financial Prosperity, Creativity, Belonging, Loyalty to Family or Group, Achievement, and Humility.

Emotional Empathic Tendency Scale (EETS) (Mehrabian, 1994). The EETS measures one’s perceived ability to identify and feel the emotions of others, using 33 items rated on a five point Likert scale.

Mystical Beliefs Questionnaire (MBQ). Based on Pahnke’s (1966) Peak Experience Profile, the MBQ is a 21-item scale developed for the present study. Five point Likert scales are used to rate mystical beliefs such as universal soul, the unity of all things, having no fear of death, the illusory nature of physical existence, the existence of a transcendent reality, and oneness with God, nature and the universe. Cronbach’s alpha coefficient in the present study was .94, indicating high internal consistency of this exploratory measure.

Sense of Coherence Scale (SOCS; Antonovsky, 1987). The SOCS measures subjective coping ability in terms of beliefs that stressful events are comprehensible and that one has the resources necessary to cope with them. We expected that psychedelic users would score higher on this than
the other groups, due to the presumed buffering effect of a mystical or spiritual perspective against stress. There are 29 items rated on a seven point Likert scale.

Procedure

Participants were recruited by posters in counterculture areas frequented by members of contracultural groups and drug users and by word of mouth (snowball method) in Israel (Tel Aviv, Haifa, Jerusalem) and Australia (Nimbin, Byron Bay, Melbourne, Gold Coast). Interested persons contacted the researcher, who sent them a questionnaire packet and a self-addressed stamped envelope for return of the completed forms. Of 212 packets initially returned, 14 were discarded as incomplete, and 22 were discarded because although psychedelic use was reported the respondent denied ever having had an overwhelming or high-dose experience.

Results

Initial examination of groups revealed differences in gender and age composition. There was a significant association between drug group and gender, $X^2 (2, N = 183) = 10.15, p = .006$. There were relatively more males in the psychedelic group (51 males, 37 females) compared to the users of other illegal drugs group (9 males, 20 females) and the non-user group (24 males, 42 females). There were also group differences in age, $F(2, 178) = 4.21, p = .016$. Tukey’s HSD post-test ($p < .05$) revealed that the non-psychedelic illegal drug user group was younger on average ($M = 30$ yr) than the psychedelic group ($M = 36$ yr) and the non-user group ($M = 38$ yr). Therefore age and gender were used as covariates in all analyses reported below.

Mystical Beliefs

Two-way (drug group X nationality) analysis of covariance (ANCOVA) indicated a significant effect of drug group on the MBQ, $F(2,171) = 73.33, p = .000$. As predicted, psychedelic drug users scored significantly higher on the MBQ ($M = 64.22$) than non-psychedelic illegal drug users ($M = 34.84$) and non-users ($M = 34.05$), as revealed by pairwise comparisons using the Bonferroni correction. There was no difference between Israelis and Australians on the MBQ, and no interaction.
Life Values

MANCOVA indicated an overall multivariate effect of nationality on the LVI, \( F(9, 164) = 2.51, p = .01 \). Univariate analyses were significant for Belonging, \( F(1, 172) = 6.70, p = .01 \), Humility, \( F(1,172) = 5.72, p = .02 \), and Loyalty to Family or Group, \( F(1,172) = 5.82, p = .02 \). On Belonging, Israelis (\( M = 10.80 \)) scored significantly higher than Australians (\( M = 9.59 \)). Israelis also rated the value of Humility more highly (\( M = 9.59 \)) than Australians did (\( M = 8.71 \)). Further, Israelis scored higher on Loyalty to Family or Group (\( M = 10.80 \)) than Australians did (\( M = 9.74 \)). There was an overall multivariate effect of drug group on the LVI, \( F(18,328) = 4.73, p = .000 \). Univariate analyses revealed significant effects of drug group on Spirituality, \( F(2,172) = 21.29, p = .000 \); Concern for Environment, \( F(2,172) = 7.72, p = .001 \); Concern for Others, \( F(2,172) = 7.04, p = .001 \); Creativity, \( F(2,172) = 3.42, p = .03 \); and Financial Prosperity, \( F(2,172) = 7.35, p = .001 \). Pairwise comparisons using the Bonferroni correction revealed that psychedelic users scored significantly higher on Spirituality and Concern for Others, and lower on the value of Financial Prosperity, than the other groups (see Table 1). Psychedelic users also scored significantly higher than users of other illegal drugs on Concern for Environment and Creativity, but only marginally (\( p < .10 \)) higher than non-users on these values (see Table 1).

Table 1. Life Values of Psychedelic Drug Users Compared to Non-Psychedelic Illegal Drug Users and Non-Users of Illegal Drugs.

<table>
<thead>
<tr>
<th>Life Value</th>
<th>Users of -</th>
<th>Psychedelics</th>
<th>Other Drugs</th>
<th>Non-users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spirituality</td>
<td></td>
<td>12.15</td>
<td>7.59</td>
<td>9.28</td>
</tr>
<tr>
<td>Environment</td>
<td></td>
<td>12.16</td>
<td>10.24</td>
<td>11.40</td>
</tr>
<tr>
<td>Concern for others</td>
<td></td>
<td>12.25</td>
<td>11.38</td>
<td>11.58</td>
</tr>
<tr>
<td>Creativity</td>
<td></td>
<td>11.97</td>
<td>10.59</td>
<td>10.97</td>
</tr>
<tr>
<td>Financial Prosperity</td>
<td></td>
<td>8.68</td>
<td>10.38</td>
<td>10.92</td>
</tr>
</tbody>
</table>
Empathy

ANCOVA indicated significant effects of the covariate gender, $F(1, 172) = 62.12, p = .000$, and drug group, $F(2, 172) = 14.99, p = .000$, on emotional empathy as measured by the EETS. As expected based on past research, females scored higher overall on emotional empathy ($M = 45.87$) than males ($M = 24.96$). According to pairwise comparisons using the Bonferroni correction, psychedelic users scored non-significantly higher ($M = 44.92$) on empathy than users of other illegal drugs ($M = 36.53$), with both groups of drug users scoring significantly higher than non-users ($M = 24.42$). There was no effect of nationality and no interaction.

Coping Ability

SOC total scores were subjected to a two-way (drug group X nationality) ANCOVA. The main effect of drug group was significant, $F(2, 173) = 6.47, p = .002$. Post-test (Bonferroni) showed that users of non-psychedelic illegal drugs scored significantly lower on the SOC ($M = 116.78$) than both users of psychedelics ($M = 133.73$) and non-users ($M = 130.88$). Neither the main effect of nationality nor the interaction were significant.

Discussion

The findings, though tentative due to the self-selected nature of the samples, were largely consistent with predictions based on the notion that many users of psychedelic drugs have undergone a mystical or transcendental experience that led to major changes in orientation. Regardless of culture of origin, users of psychedelic drugs scored significantly higher than users of other illegal drugs and non-users on mystical beliefs, such as oneness with God and the universe, the illusory nature of physical existence, and the presence of a transcendental reality. Psychedelic users also scored higher on emotional empathy than the other groups, although only the comparison with non-users was significant. The higher mean empathy score of psychedelic users was consistent with predictions based on the compassionate qualities attributed to those who have had enlightenment experiences according to the mystical traditions of Buddhism and Hinduism. Nevertheless, such claims should be tempered by the fact that, as Horgan (2003) noted, no obvious
“psychedelic saints” have yet emerged from the counterculture. Life values that are said to naturally follow from mystical experience – spirituality and concern for others – were rated significantly more highly by psychedelic users than both of the other groups, and concern for the environment and creativity were rated significantly more highly by psychedelic users than by users of other illegal drugs. The value of financial prosperity was rated significantly lower by psychedelic users than by the other groups, indicating a less materialistic orientation in the psychedelic users.

However, contrary to predictions, differences were not found on the values of humility or achievement between psychedelic users and the other groups. On the SOC, a measure of belief in one’s ability to cope with life stress, users of non-psychedelic illegal drugs such as marijuana and amphetamines scored significantly lower than both users of psychedelics and non-users of illegal drugs. This suggests that in contrast to psychedelic drug use, non-psychedelic illegal drug use may be in part motivated by escapism or as an attempt to cope with stress. Alternatively, use of such drugs may impair the subjective coping ability of some users.

A question that naturally arises from the present findings is whether the above characteristics of psychedelic drug users preceded psychedelic use or resulted from such use. Those who decide to take a psychedelic drug may in some cases do so as part of a personal spiritual quest, based on the reputation such drugs have for inducing mystical experiences; thus the tendency to endorse more spiritual, less materialistic values may have preceded use of psychedelics. However, present results are generally consistent with the earlier findings of Pahnke (1966) and Doblin (1991) of a profound and enduring spiritual influence of the psychedelic experience. The most likely possibility, in our interpretation, is that both pre-drug factors and psychedelic drug effects may have contributed to the distinctive characteristics of psychedelic drug users observed in the present study. That is, people on a spiritual quest may be more inclined to use psychedelics as part of that quest, but in addition the drugs themselves may on occasion have powerful effects on values and spirituality even in those who did not initially take psychedelics for spiritual purposes. Present findings also suggest that the effects of psychedelic drugs may be more important than the cultural differences between Israel and
Australia in influencing the life values and spirituality of drug users in these two countries, consistent with the claim of a universal aspect to psychedelic mystical experiences. As predicted, Israelis scored higher on Belonging and Group Loyalty than Australians overall, but also on the value of Humility, which was not predicted.

In recent years a “psychedelic renaissance” seems to be underway, both at the societal level and in terms of renewed scientific interest in these remarkable compounds. In the early 1960s, psychedelics were regarded by many as miracle drugs with the potential to positively transform individuals and society. But the ensuing controversies and problems associated with uncontrolled use quickly led to the illegalization of psychedelics and cessation of scientific research on their clinical and spiritual potential. Given the recent resurgence of scientific interest, and government approval of limited human studies of psychedelic effects (e.g., Strassman, 2001), a less hysterical assessment of psychedelics is likely to emerge in the coming years.
References


Albert Mehrabian, 1130 Alta Mesa Road, Monterey, CA 93940.


