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The Effects of Life Values Among Non-Psychedelic Drug Users and Psychedelic Drug Users: A Comparison Study on Life Values

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THE EFFECTS OF LIFE VALUES AMONG NON-PSYCHEDELIC DRUG
USERS AND PSYCHEDELIC DRUG USERS:
A COMPARISON STUDY ON LIFE VALUES

by

LIN PENG

A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in Psychology
in the College of Sciences
and in the Burnett Honors College
at the University of Central Florida
Orlando, Florida

Spring Term, 2014

Thesis Chair: William Saunders, Psy.D.

A Comparison Study on Life Values

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ABSTRACT

The intent of this study was to compare life value differences using the Life Values Inventory. Differences among non-psychedelic users and psychedelic users were examined. Participants, ranging from age 18 to 48 from the University of Central Florida (UCF), a large state university, were recruited on a voluntarily basis. This was primarily done through online message board, the Sona System, and classroom announcements. The study was presented through the Sona System provided by UCF. In addition, all participants were students of the university. Results indicated significant differences among three out of 14 life values measured. The three life values that were shown to be significantly different among the non-psychedelic users and psychedelic users were: 1) *concern for others*, 2) *loyalty to family or group*, and 3) *responsibility*. In addition, the life value of *spirituality* was only found to be marginally significant.

DEDICATION

For the one and all who has brought me here,
to share, to love, & to learn.

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to all of my life's mentors who have enabled and supported me to reach this point in my academic career. First and foremost, I would like to thank my thesis chair, Dr. William Saunders, who has supported me throughout this experience and process with his patience, knowledge, and encouragement. The much freedom and space given by Dr. Saunders allowed me to discover and realize the importance of my undergraduate thesis.

Moreover, I would like to express my sincere gratitude to Dr. Chrysalis Wright for her invaluable assistance and patience in guiding and helping me through the endless statistical analysis and numerous revisions. Additionally, I want to thank Dr. Paula Reynoso for her willingness to further assist me in the statistical analysis. In addition, I would also like to thank

Mr. Michael Loree for accepting to be part of my committee and providing constructive feedback on how I can further improve on my thesis.

Most importantly, I would like to express one of my deepest gratitude to the source, the one who has brought me here and enabled me to reach to the point where I need to be. Without you, my existence would of never flourished.

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INTRODUCTION

The use and function of psychedelic plants vary by individual societies. It has been revealed that the use of psychedelic plants in complex societies are typically reduced and suppressed by governing authorities (Winkelman, 2007). According to Dobkin de Rios and Smith (1997), cultural use of psychedelic plants and substances are typically repressed in such societies because they constitute a potential threat to the religious interpretations of those who hold religious power. Additionally, psychedelics itself are not complex but rather play a straightforward role, yet it is their useful applications that are often misunderstood (Stolaroff, 1999). Psychedelics including psilocybin and ayahuasca have been used in religious and spiritual ceremonies of some indigenous cultures for centuries (Lerner & Lyvers, 2006). Ayahuasca was used as a psychoactive ritual sacrament in ceremonies of the syncretic churches União do Vegetal and Santo Daime (Silveira et al., 2005). Other psychedelic fungi or plants such as psilocybin and peyote have been central to the traditional spiritual and healing ceremonies of some indigenous cultures of the Americas including South America (“Peyote/mescaline”; Griffiths, Richards, Johnson, McCann, & Jesse, 2008).

Nevertheless, in past and present research studies, those who have examined or observed the effects of psychedelic substances such as LSD, psilocybin, mescaline, ayahuasca have claimed that these substances were capable of inducing profound spiritual or mystical experiences (Lerner & Lyvers, 2006). These claims have also been supported in past research. For example, Pahnke’s 1966 research on *The Contribution of the Psychology of Religion to the Therapeutic use of Psychedelic Substances*, Strassman’s 2001 research on N, N-dimethyltryptamine (DMT): *The Spirit Molecule*, and Hofmann’s 1983 research on lysergic acid

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diethylamide (LSD). By 1965, there were more than 1,000 published clinical studies that reported promising therapeutic effects of LSD, psilocybin, and sporadically, ketamine in patients with anxiety and obsessive-compulsive disorders, depression, sexual dysfunction and alcohol addiction, and to relieve pain and anxiety in patients with terminal cancer (Vollenweider & Kometere, 2010). The psychological effects of psilocybin, which are similar to other classical serotonergically, mediated hallucinogens including LSD, mescaline, and DMT, induced significant alterations in perceptual, cognitive, affective, volitional, and somatesthetic functions, including visual and auditory sensory changes, difficulty in thinking, mood fluctuations, and dissociative phenomena (Isbell 1959; Wolbach et al. 1962; Rosenberg et al. 1964). Although, clinical studies have suggested that psychedelics do not cause long-term mental health problems (Krebs & Johansen, 2013), there are reported potential psychological and emotional risks of hallucinogen exposure when used for recreational purposes by unsupervised users. Such risks may exacerbate psychological struggles including panic or fear, precipitation or exacerbation of latent psychiatric or psychological conditions, long-lasting perceptual disturbances, and development of abusive patterns of hallucinogen use (Griffiths, Johnson, Richards, Richards, McCann, Jesse, 2011). However, with supervision and under controlled conditions, some studies have suggested that psychedelic drug use can be taken without major adverse psychological or psychiatric consequences (Griffiths et al., 2008). In a study conducted by Griffiths et al. (2008), 36 study participants who were medically and psychiatrically healthy, without any histories of hallucinogen use, received either two sessions or three sessions of psilocybin or placebo. As a result of induced spiritual or mystical experiences from the use of psychedelics, participants rated such experiences as having substantial and sustained personal meaning and spiritual

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significance (Griffiths et al., 2008). Positive effects on attitudes, mood, and behavior further persisted within the 14 months range (Griffiths et al., 2008). Therefore, when administered under supportive conditions, participants of psychedelics substances use may experience positive life satisfaction as a result of transcendental or mystical experiences. However, according to Stolaroff and McDonald-Smith (1999, 1996) the use of psychedelics alone will not necessarily develop the ability to have transcendental or mystical experiences naturally. Yet, psychedelic drugs may take a considerable toll on the body and mind, depending on the amount of psychic burdens the individual has. Nevertheless, Stolaroff (1999) suggested that psychedelics are way showers that may produce higher wisdom, heightened perception, self-understanding, energy, and freedom based off of his 40 years of research, including observing more than 100 individuals.

Nevertheless, the effects of psychedelic experiences, either as transcendental or mystical have suggested changes in individual values (Lerner & Lyvers, 2006). Values crystallize and prioritize our values system in helping individuals with the formation of personal truth (“Life Values Inventory”). Changes to people’s values to a more egalitarian values and feelings of compassion will give rises in greater pro-social behavior (Piff, Kraus, Côté, Cheng, & Keltner, 2010).

The construct of pro-social behaviors are defined as any voluntary behavior or action intended to benefit others including altruism, sharing, cooperation, acceptance, and sympathy (Wilson, 2008; Kidron & Fleischman, 2006; Schroeder, Fermer, Dovidio, & Piliavin, 1995; Penner, Fermer, Dovidio, Piliavin, & Schroeder, 2005). Yet, values refer to desirable goals that motivate one’s action, and values also guide the selection or evaluation of one’s actions

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(Schwartz, 2010). Therefore, personal life values including transcendence values have the influence over fostering or discouraging pro-social behaviors either directly, or indirectly. Independent values such as values in the Life Values Inventory (Brown & Crace, 1996) were built on the foundation of Brown's Holistic Values-Based Theory of Career and Life Role Choice and Satisfaction (Brown, 1996). The 14 life values that were developed in the Life Values Inventory (Brown & Crace, 1996) are *Achievement, Belonging, Concern for the Environment, Concern for Others, Creativity, Financial Prosperity, Health and Activity, Humility, Independence, Loyalty to Family or Group, Privacy, Responsibility, Scientific Understanding, and Spirituality*. Small number of values can be organized into a dynamic values system such as each category of the 14 life values, in which act as guides to individual's behavior as people make important life decisions ("Life Values Inventory"). Yet, the use of psilocybin signifies mystical experiences that predict long-term changes in behaviors, attitudes, and values (MacLean, Johnson, & Griffiths, 2011). Therefore, if psychedelic drugs have the ability to induce mystical or transcendental experiences, then the values system, such as indicated in the Live Values Inventory, of psychedelic users should differ from those of non-psychedelic users or non-drug users.

In the present study, the proposed study sought to use a questionnaire based format to examine and compare the effects of psychedelic in life values among psychedelic users (LSD, psilocybin, mescaline), and non-psychedelic users or non-drug users (cannabis, cocaine, amphetamines, and N-methylamphetamine). Thus, the prediction is that there will be a significant effect in the 14 life values between users and non-users. Due to the often-claimed effects of psychedelic drugs, all life values of psychedelic users should transcend non-

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psychedelic users and non-drug users.

METHOD

Participants

A sample of 470 participants from a large state university—University of Central Florida, ranging from freshmen to seniors, participated in the present study. All participants were required to be 18 years of age or older to participate. Participants were also required to have a login account with the Sona System provided by UCF. Therefore, only currently enrolled students were able to take part in the present study. The calculated average time was from six minutes to 19 minutes. Due to the calculated average time of answering the questionnaire, the number of participants was reduced down to 413 for further accuracy.

Materials

The experiment was conducted through the Sona System. A series of three different questionnaires were used: Demographic Questionnaire (Wright) Drug and Alcohol Use Questionnaire (Wright), Life Values Inventory (Brown & Crace, 1996). The three questionnaires were set up in the Sona System with a number of 139 questions in total. The number of sections is divided into six individual sections. Each section had an introduction text.

Demographic Questionnaire

The first section is the Demographic Questionnaire with the format of multiple choice and free response. The direction or introduction text instructed participants the following: “Listed below are questions for this section of the survey. Please provide a response for every question. If you are given the option to decline to answer a question, then declining to answer is considered a response.” This section asks basic demographic and background information of participants such as “What is your age?, What year are you in college?, What is your current

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employment (other than school)?, and What is your religion or faith.” The first section consists of only 19 questions.

Drug and Alcohol Use Questionnaire

The second section is the Drug and Alcohol Use Questionnaire with the format of multiple choices. The direction or introduction text instructed the following: “Listed below are questions for this section of the survey. Please provide a response for every question to the best of your ability.” This section asks participants’ present and previous drug and alcohol use such as “Have you used alcohol in the past 30 days?,” “How old were you when you first used LSD (Lysergic acid diethylamide)?,” and “What was the reason for your first non-medical drug use?.” The second section consists of 36 questions.

Life Values Inventory

The third and fourth sections are the Life Values Inventory with the format of multiple choices. The direction or introduction text instructed participants the following: “Please read each one and then choose the number (1-5) or response that most accurately describes how often the belief guides your behavior.” This section asks participants to rate 42 items of 14 different life values on a five-point scale: 1 is “Almost never guides my behavior,” 2 is “Slightly guides my behavior,” 3 is “Moderately guides my behavior,” 4 is “Very much guides my behavior,” and 5 is “Almost always guides my behavior.” It is important to define what values are as opposed to individuals’ needs and interests. According to Milton Rokeach’s definition of values—values are standards that not only guide the behavior of the individuals who hold them, but serve as their basis for judging the behavior of others (Brown & Crace, 1996). Values develop in order for individuals to meet their needs in socially acceptable ways,

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and values provide individuals with a sense of what they would like to attain in the future. Therefore, developed values become the primary basis for goal setting (Brown & Crace, 1996). LVI asks participants to rate following questions such as “having quiet time to think, knowing things about science, working hard to do better, discovering new things or ideas, and being wealthy.”

Procedure

Participants were participated voluntarily through their summer psychology courses. Three mass emails were sent out to the following courses: History and Systems of Psychology, Statistics Methods, and Psychology of Diversity, to recruit more participants. Extra credit was offered depending on the course, itself. Participants were required to log into their account on the Sona System provided by UCF.

Data Analysis

A one-way ANOVA was conducted through SPSS. Dummy variables were created for non-psychedelic drug users and psychedelic users, and as well as for the 14 life values inventory categories. In addition, two different bivariate correlations were performed under SPSS. The first bivariate correlation that was conducted was among the 14 life values between non-psychedelic drug users (n = 395) and psychedelic users (n= 18); The second bivariate correlation that was conducted was among the 14 life values between only psychedelic users (n= 18). The third bivariate correlation that was conducted was among only non-psychedelic users (n = 395).

RESULTS

One-Way ANOVA

An ANOVA was conducted to determine whether or not there were any significance differences in the life values inventory categories between the two groups of psychedelic drug users and non-psychedelic drug users. As a result, the outcome of the study showed three out of 14 life values as significant. Non-psychedelic drug users showed more *concern for others*, *loyalty to family or group*, and *responsibility* than psychedelic users as shown in *Table 1*. The results indicated a significant effect in the life value of *concern for others*, $F(1, 411) = 10.73, p < .001$; *loyalty family or group*, $F(1, 411) = 13.38, p < .000$; and *responsibility*, $F(1, 411) = 5.07, p < .025$. The results also revealed that there was a marginally significant effect in *spirituality*, $F(1, 411) = 3.41, p < .066$. On the other hand, the following life values were not significant as shown in *Table 2*: *achievement*, $F(1, 411) = 0.19, p < .664$; *belonging*, $F(1, 411) = 1.42, p < .234$; *environment*, $F(1, 411) = .01, p < .911$; *creativity*, $F(1, 411) = 0.10, p < .755$; *financial prosperity*, $F(1, 411) = 0.49, p < .4836$; *healthy and activity*, $F(1, 411) = 0.29, p < .593$; *humility*, $F(1, 411) = 0.08, p < .775$; *independence*, $F(1, 411) = 0.06, p < .815$; *privacy*, $F(1, 411) = 1.53, p < .217$; *responsibility*, $F(1, 411) = 5.07, p < .025$; and *scientific understanding*, $F(1, 411) = 0.50, p < .483$.

Correlations

A bivariate correlation was conducted to determine whether or not there is a relationship between life values inventory categories for non-psychedelic users and psychedelic users. Statistically significant correlation coefficients were found among most of the life values inventory categories among non-psychedelic users and psychedelic users as indicated in *Table 2*. Furthermore,

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another bivariate correlation was conducted among psychedelic users only ($n = 18$). The outcome of the results showed negative correlations among many of the life values inventory categories as shown in *Table 3*. Results also indicated statistically significant correlations in the group of psychedelic drug users were found among the following life values inventory categories: 1) *achievement* and *environment* ($r = .57, p < .05$), *health and activity* ($r = .55, p < .05$), *humility* ($r = .53, p < .05$), and *scientific understanding* ($r = .80, p < .01$); 2) *belonging* and *loyalty to family or group* ($r = .65, p < .01$), and *spirituality* ($r = .54, p < .05$); 3) *concern for the environment* and *achievement* ($r = .57, p < .05$), *health and activity* ($r = .62, p < .01$), *humility* ($r = .57, p < .05$), and *scientific understanding* ($r = .63, p < .01$); 4) *concern for others* and *creativity* ($r = .49, p < .05$), *loyalty to family or group* ($r = .49, p < .05$), and *spirituality* ($r = .50, p < .05$); 5) *creativity* and *concern for others* ($r = .49, p < .05$), and *privacy* ($r = .64, p < .01$); 6) *financial prosperity* and *independence* ($r = .78, p < .01$); 7) *health and activity* and *achievement* ($r = .55, p < .05$), *environment* ($r = .62, p < .01$), and *scientific understanding* ($r = .48, p < .05$); 8) *humility* and *achievement* ($r = .53, p < .05$), and *environment* ($r = .56, p < .05$); 9) *independence* and *financial prosperity* ($r = .78, p < .01$), and *responsibility* ($r = .50, p < .05$); 10) *loyalty to family or group* and *belonging* ($r = .65, p < .01$), *concern for others* ($r = .49, p < .05$), *responsibility* ($r = .59, p < .01$); 11) *privacy* and *creativity* ($r = .64, p < .01$), *responsibility* ($r = .49, p < .05$), and *spirituality* ($r = .69, p < .01$); 12) *responsibility* and *independence* ($r = .50, p < .05$), *loyalty to family or group* ($r = .59, p < .01$), and *privacy* ($r = .49, p < .05$); 13) *scientific understanding* and *achievement* ($r = .80, p < .01$), *environment* ($r = .63, p < .01$), and *health and activity* ($r = .48, p < .05$); 14) *spirituality* and *belonging* ($r = .54, p < .05$), *concern for others* ($r = .50, p < .05$), *loyalty to family or group* ($r = .55, p < .05$), and *privacy* ($r = .69, p < .01$). Lastly, a bivariate correlation among only non-psychedelic

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drug users was conducted (n= 395). The results indicated that most life values display statistically significant correlations among only non-users as shown in *Table 4*.

DISCUSSION

The results of this study are slightly consistent with the initial prediction based on the notion that only three out of 14 life values displayed a significant difference or effect among psychedelic users and non-psychedelic users. The three life values were *concern for others*, *loyalty to family or group*, and *responsibility*. Non-psychedelic users endorsed higher mean values under these three life values compared to psychedelic users. The higher score of means indicated that non-psychedelic users showed more *concern for others*, *loyalty to family or group*, and *responsibility*. Therefore, the use of psychedelic drugs causes a change in these three critical life values. The results of the ANOVA analysis failed to be consistent with the results found by Lerner and Lyvers (2006) in which that psychedelic users scored significantly higher on the life values of *spirituality* and *concern for others* than other groups of non-psychedelic users and non-illicit drug-using social drinkers. Moreover, Mangini (2000) reported that many participants indicated their psychedelic experiences contributed to their development as socially responsible, ethical, and humane citizens; Their psychedelic experiences also helped them become more involved in caring for their communities and the natural environment. The inconsistency may be caused by confounding variables related to the two groups of non-psychedelic users and psychedelic users in terms of its settings, and the number of times drugs used by psychedelic users. Due to how the study was carried out, participants did not perform the study in a controlled setting. Therefore, variables such as the time of the day, noise level, or level of knowledge may have caused the inconsistency in the outcome of the results. Quite and noisy conditions of the two variables including time of the day and the noise level were not held at constant. Thereby, the time of the day and the noise level may have distracted the participants

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while performing the study. One of the major confounding variables is the explicit level of knowledge the participants had about the study itself, and the name and description of psychedelic drugs. For instance, the lack of knowledge in the different name or description of psychedelic drugs may have caused non-psychedelic users fall out of its true category of psychedelic users.

Nevertheless, potential limitations of the present study may also include the limited population sample size and limited access to diverse population. The population sample size of the present study encompassed only individuals who were currently enrolled at UCF. Due to the small population sample size, it failed to capture the law of large numbers. Therefore, it did not accurately reflect the approximation of the average comparison on life values of individuals in the population. Another limitation is the limited access to a diverse population. 68.5% of the sample size consisted the race of White/Caucasian, 10.1% Black/African-American, 6.5% Asian/Pacific Islander, 0.4 % American Indian/Native American/Alaska Native, and 13.6% Others. The different ethnic and cultural groups of the participated individuals might have held predisposition beliefs, thereby influencing the results. Since in the present study, the dominant racial group was White/Caucasian, the results might have been skewed due to their ethnic and cultural background.

Numerous research studies have reported that the use of psychedelic drugs can produce profound short-term and long-term effects on the human psyche including individuals' values (Pahnke, 1963; Strassman, 2001; Griffiths et al., 2006; Pahnke & Richards, 1969). Psychedelic experiences are often able to cause mystical or transcendental experience similar to the practice of meditation or other spiritual means (Carrigan, 1997; Kwee, 2002; Stolaroff, 1999).

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Nevertheless, these effects of experiences have the ability to produce a change in individual life values, resulting in motivating and modifying individual behaviors.

Achievement

Under the life value category of *achievement*, results indicated a negative correlation with the life values of *belonging* and *concern for others*. The life value *achievement* indicates that it is important to challenge oneself and work hard to improve, while the life value *belonging* indicates that it is important to be accepted by others and to feel included (Brown & Crace, 1996). According to Sigmund Freud, the human ego employs a range of defense mechanisms in order to deal with psychological and social conflicts and problems (McLeod, 2008). Thereby, as psychedelic drug users score higher on *achievement*, the life value of *belonging* lowers. Psychedelic experiences have the ability to offer a change in individuals' attitude and behavior. "One feels as though personal problems can now be so confronted that they may finally be reduced or eliminated" (Pahnke & Richards, 1969). As a result, those individuals no longer need to be accepted or included by their peers or others, as the human ego always are in search of acceptance by external sources (Tolle, 2004). There was also a negative correlation between the life values of *achievement* and *concern for others*. Little to almost no research has been done directly between these two life values among psychedelic users. However, a research study have reported that students who used marijuana had lower grades, lower classroom participation, worse attendance, more academic dishonesty, and were disciplined more often compared to non-users (Finn, 2012); Thereby, marijuana users exhibited lower achievement rate.

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Due to the results of the correlation among only non-psychedelic users, non-users showed statistically significant in most life values. Therefore, non-users exhibit more positive correlations among the 14 life values.

Belonging

Under the life value category of *belonging*, results indicated a negative correlation with the life values inventory categories of *achievement* (discussed in previous section), *health and activity*, and *scientific understanding*.

Concern for the Environment

Under the life value category of *concern for environment*, results indicated a negative correlation with the life values inventory categories of *concern for others*. As psychedelic users have more concern for the environment, in which it indicated that it is important to protect and preserve the environment (Brown & Crace, 1996), the life value of *concern for others* goes down.

Concern for Others

Under the life value category of *concern for others*, results indicated a negative correlation with the life values inventory categories of *achievement*, *concern for the environment*, *financial prosperity*, *health and activity*, *independence*, and *scientific understanding*. The life value *concern for others* indicates that the well-being of others is important (Brown & Crace, 1996). As users of psychedelic drugs endorse higher rate on the life value of *concern for others*, their *financial prosperity* lowers. This finding is consistent with the research conducted by Mangini (2000). Participants reported themselves as more socially responsible, more caring for their communities and their environment, but less materially

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successfully (Mangini, 2000). However, as indicated the findings of Mangini's study still display a sense of inconsistency with the present study, in which that as psychedelic users engage in psychedelic drug use, their concern for the environment goes down. The findings of this inconsistency may be due to confounding variables discussed earlier in the section.

Financial Prosperity

Under the life value category of *financial prosperity*, results indicated a negative correlation with the life values inventory category of *concern for others*. The life value *financial prosperity* indicates that it is important to be successful at making money or buying property (Brown & Crace, 1996). As the life value of *concern for others* among psychedelic users increases, the life value of *financial prosperity* goes down. According to Lerner & Lyvers (2006), the life value of *financial prosperity* was rated significantly lower by psychedelic users than non-psychedelic users, and non-illicit drug using social drinkers; Thereby, indicating that psychedelic users display a less materialistic orientation than the other groups.

Health and Activity

Under the life value category of *health and activity*, results indicated a negative correlation with the life values inventory categories of *belonging*, *concern for others*, and *spirituality*.

Independence

Under the life value category of *independence*, results indicated a negative correlation with the life values inventory category of *concern for others*. The life value *independence* indicates that it is important to make your own decisions and do things your way (Brown & Crace, 1996).

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Loyalty to Family or Group

Under the life value category of *loyalty to family or group*, results indicated a negative correlation with the life values inventory category of *scientific understanding*. The life value *loyalty to family or group* indicates that it is important to follow the traditions and expectations of your family or group (Brown & Crace, 1996). As psychedelic users score higher on the life value *loyalty to family or group*, their life value of *scientific understanding* lowers. Family traditions may have affected individuals' scientific understanding in a way that family traditions or rituals serve as an anchor to social and personal myths through the behavior of acting out mystical components. As a result, it reinforces individuals' reality on the behavioral level (Feinstein & Krippner, 1997), and abandons the need to seek out scientific understanding or principles.

Scientific Understanding

Under the life value category of *scientific understanding*, results indicated a negative correlation among the life value categories of *belonging*, *concerns for others*, *loyal to family or group*, and *spirituality*. The life value *scientific understanding* indicates that it is important to use scientific principles to understand and solve problems (Brown & Crace, 1996).

Spirituality

Under the life value category of spirituality, results indicated a negative correlation among *health and activity*, and *scientific understanding*. The life value *spirituality* indicates that it is important to have spiritual beliefs and to believe that you are part of something greater than yourself (Brown & Crace, 1996).

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Conclusion

Although, there are many inconsistencies in the hypothesis, and the results of the current study compared to past studies, the present study can be served as a foundation for future studies. Many inconsistencies come from the lack of research in the field of psychedelics, itself. Certainly, further research studies on the effects of psychedelic plants on individuals' life values are further needed. Thereby, a follow-up experiment could be a reassessment of the current study expanding the population access and size. Potential future research should also examine each individual life values of the 14 life values under the Life Values Inventory among psychedelic drug users. The study should further investigate how each life value is affected by the use of psychedelic drugs, and how life values are correlated among each other. Additionally, future studies will incorporate other populations such as post-graduates, professionals, or the same populations with changes in lifestyles. Future studies should also continue on with a longitudinal study on that same population to see the long-term impacts of drug use on life values. As a result, the answer to some of these questions will impact behaviors because has been well documented that life values directly impact individual behaviors (Grant & Rothbard, 2013; Boer & Fischer, 2013; Thomaes, Bushman, de Castro, & Reijnjes, 2012).

Appendix A

Appendix A: Tables

Table 1. Means and Standard Deviations for All Life Values between Non-Psychedelic Users and Psychedelic Users

Life Values	Non-Psychedelic Users		Psychedelic Users	
	M	SD	M	SD
Achievement	12.34	2.22	12.11	1.64
Belonging	9.56	2.74	8.78	2.56
Environment	9.09	2.69	9.17	3.28
Concern for Others	11.46	2.25	9.67	2.72
Creativity	10.30	2.67	10.50	2.79
Financial Prosperity	11.46	2.70	11.00	2.57
Health and Activity	10.86	2.83	10.50	1.82
Humility	8.33	2.44	8.17	2.15
Independence	11.56	2.03	11.67	2.14
Loyalty to Family or Group	11.02	2.59	8.72	2.72
Privacy	11.14	2.59	8.72	2.85
Responsibility	12.75	1.99	11.67	1.97
Scientific Understanding	8.76	3.07	9.28	2.93
Spirituality	9.75	3.81	8.06	4.11

Note: 0 = no drug use and 1 = drug use; * $p < .01$; ** $p < .05$; *** $p < .10$

Table 2. Table of Correlations for All Life Values among Non-Psychedelic Users and Psychedelic Users

Life Values	1	2	3	4	5	6	7
Achievement	—	.127**	.371**	.364**	.396**	.381**	.499**
Belonging	.127**	—	.185**	.254**	.103*	.232**	.193**
Concern for the Environment	.371**	.185**	—	.482**	.441**	.092	.251**
Concern for Others	.364**	.254**	.482**	—	.426**	.039	.174**
Creativity	.396**	.103*	.441*	.426**	—	.170**	.240**
Financial Prosperity	.381**	.232**	.092	.039	.170**	—	.478**
Health and Activity	.499**	.193**	.251**	.174**	.240**	.478**	—
Humility	.169**	.141**	.238**	.204**	.193**	.059	.211**
Independence	.494**	.101*	.241**	.296**	.449**	.454**	.320**
Loyalty to	.407**	.336**	.303**	.429**	.292**	.359**	.396**

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Loyalty to Family or Group	.407**	.336**	.303**	.429**	.292**	.359**	.396**
Privacy	.408**	.074	.263**	.351**	.466**	.225**	.223**
Responsibility	.608**	.124*	.325**	.536**	.311**	.265**	.252**
Scientific Understanding	.331**	.078	.425**	.214**	.461**	.110*	.182**

Note. Correlations for both users and non-users (n = 413) are presented. 1 = Achievement; 2 = Belonging; 3 = Concern for the Environment; 4 = Concern for Others; 5 = Creativity; 6 = Financial Prosperity; 7 = Health and Activity; 8 = Humility; 9 = Independence; 10 = Loyalty to Family or Group; 11 = Privacy; 12 = Responsibility; 13 = Scientific Understanding; 14 = Spirituality. * $p < .01$; ** $p < .05$; *** $p < .10$

Table 2. Continued

Life Values	8	9	10	11	12	13	14
Achievement	.169**	.494**	.407**	.408**	.608**	.331**	.319**
Belonging	.141**	.101*	.336**	.074	.124*	.078	.141**
Concern for the Environment	.238**	.241**	.303**	.263**	.325**	.425**	.175**
Concern for Others	.204**	.296**	.429**	.351**	.536**	.214**	.224**
Creativity	.193**	.449**	.292**	.466**	.311**	.461**	.078
Financial Prosperity	.059	.454**	.359**	.225**	.265**	.110*	.123*
Health and Activity	.211**	.320**	.396**	.223**	.252**	.182**	.245**
Humility	—	.206**	.206**	.247**	.200**	.204**	.200**
Independence	.206**	—	.389**	.549**	.509**	.299**	.080
Loyalty to Family or Group	.206**	.389**	—	.331**	.427**	.161**	.403**
Privacy	.247**	.549**	.331**	—	.446**	.269**	.175**
Responsibility	.200**	.509**	.427**	.446**	—	.198**	.217**
Scientific Understanding	.204**	.299**	.161**	.269**	.198**	—	.003
Spirituality	.200**	.080	.403**	.175**	.217**	.003	—

Note. Correlations for both users and non-users (n = 413) are presented. 1 = Achievement; 2 = Belonging; 3 = Concern for the Environment; 4 = Concern for Others; 5 = Creativity; 6 = Financial Prosperity; 7 = Health and Activity; 8 = Humility; 9 = Independence; 10 = Loyalty to Family or Group; 11 = Privacy; 12 = Responsibility; 13 = Scientific Understanding; 14 = Spirituality. * $p < .01$; ** $p < .05$; *** $p < .10$

Table 3. Table of Correlations for All Life Values among Psychedelic Users

Life Values	1	2	3	4	5	6	7
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Achievement	—	-.036	.565*	-.123	.360	.447	.551*
Belonging	-.036	—	.068	.411	.223	.305	-.189
Concern for the Environment	.565*	.068	—	-.073	.325	.322	.615**
Concern for Others	-.123	.411	-.073	—	.488*	-.286	-.130
Creativity	.360	.223	.325	.488*	—	.059	.087
Financial Prosperity	.447	.305	.322	-.286	.049	—	.264
Health and Activity	.551*	-.189	.615**	-.130	.087	.264	—
Humility	.528*	.178	.556*	.060	.299	.459	.293
Independence	.296	.029	.344	-.131	.236	.781**	.331
Loyalty to Family or Group	.183	.646**	.409	.489*	.381	.346	.357
Privacy	.281	.223	.185	.468	.635**	.084	.059
Responsibility	.412	.405	.264	.307	.438	.454	.393
Scientific Understanding	.802**	-.392	.627**	-.180	.349	.039	.480*
Spirituality	.139	.539*	.253	.496*	.459	.039	-.012

Note. Correlations for both users and non-users (n = 413) are presented. 1 = Achievement; 2 = Belonging; 3 = Concern for the Environment; 4 = Concern for Others; 5 = Creativity; 6 = Financial Prosperity; 7 = Health and Activity; 8 = Humility; 9 = Independence; 10 = Loyalty to Family or Group; 11 = Privacy; 12 = Responsibility; 13 = Scientific Understanding; 14 = Spirituality. * $p < .01$; ** $p < .05$; *** $p < .10$

Table 3. Continued

Life Values	8	9	10	11	12	13	14
Achievement	.528*	.296	.183	.281	.412	.802**	.139
Belonging	.178	.029	.646**	.223	.405	-.392	.539*
Concern for the Environment	.556*	.344	.409	.185	.264	.627**	.253
Concern for Others	.060	-.131	.489*	.468	.307	-.180	.496*
Creativity	.299	.236	.381	.635**	.438	.349	.459
Financial Prosperity	.459	.781**	.346	.084	.454	.039	.039
Health and Activity	.293	.331	.357	.059	.393	.480*	-.012
Humility	—	.332	.431	.463	.431	.385	.452
Independence	.332	—	.206	.192	.502*	.025	.029
Loyalty to Family	.431	.206	—	.294	.591**	-.011	.545*

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or Group							
Privacy	.463	.192	.294	—	.493*	.069	.692**
Responsibility	.431	.502*	.591**	.493*	—	.017	.409
Scientific Understanding	.385	.025	-.011	.069	.017	—	-.011
Spirituality	.452	.029	.545*	.692**	.409	-.011	—

Note. Correlations for both users and non-users (n = 413) are presented. 1 = Achievement; 2 = Belonging; 3 = Concern for the Environment; 4 = Concern for Others; 5 = Creativity; 6 = Financial Prosperity; 7 = Health and Activity; 8 = Humility; 9 = Independence; 10 = Loyalty to Family or Group; 11 = Privacy; 12 = Responsibility; 13 = Scientific Understanding; 14 = Spirituality. * $p < .01$; ** $p < .05$; *** $p < .10$

Table 4. Table of Correlations for All Life Values among Non-Psychedelic Users

Life Values	1	2	3	4	5	6	7
Achievement	—	-.131**	.365**	.386**	.398**	.379**	.498**
Belonging	.131**	—	.192**	.241**	.099*	.228**	.202**
Concern for the Environment	.365**	.192**	—	.524**	.448**	.081	.241**
Concern for Others	.386**	.214**	.524**	—	.432**	.050	.183**
Creativity	.398**	.099*	.448**	.432**	—	.176**	.245**
Financial Prosperity	.379**	.228**	.081	.050	.176**	—	.484**
Health and Activity	.498**	.202**	.241**	.183**	.245**	.484**	—
Humility	.159**	.139**	.224**	.211**	.190**	.044	.208**
Independence	.502**	.105*	.235**	.326**	.459**	.441**	.321**
Loyalty to Family or Group	-.419**	.318**	.303**	.408**	.295**	.360**	.401**
Privacy	-.412**	.065	.269**	.340**	.460**	.229**	.227**
Responsibility	.617**	.108*	.331**	.540**	.310**	.255**	.247**
Scientific Understanding	.318**	.099	.415**	.243**	.466**	.114*	.176**
Spirituality	.326**	.119*	.172**	.197**	.062	.124*	.253**

Note. Correlations for both users and non-users (n = 413) are presented. 1 = Achievement; 2 = Belonging; 3 = Concern for the Environment; 4 = Concern for Others; 5 = Creativity; 6 = Financial Prosperity; 7 = Health and Activity; 8 = Humility; 9 = Independence; 10 = Loyalty to Family or Group; 11 = Privacy; 12 = Responsibility; 13 = Scientific Understanding; 14 = Spirituality. * $p < .01$; ** $p < .05$; *** $p < .10$

Table 4. Continued

Life Values	8	9	10	11	12	13	14
Achievement	.159**	.502**	.419**	.412**	.617**	.318**	.326**
Belonging	.139**	.105*	.318**	.065	.108*	.099	.119*
Concern for the Environment	.224**	.235**	.303**	.269**	.331**	.415**	.172**
Concern for Others	.211**	.326**	.408**	.340**	.540**	.243**	.197**
Creativity	.190**	.459**	.295**	.460**	.310**	.466**	.062
Financial Prosperity	.044	.441**	.360**	.229**	.255**	.114*	.124*
Health and Activity	.208**	.321**	.401**	.227**	.247**	.176**	.253**
Humility	—	.202**	.198**	.239**	.191**	.198**	.190**
Independence	.202**	—	.407**	.568**	.514**	.311**	.084
Loyalty to Family or Group	.198**	.407**	—	.327**	.409**	.178**	.388**
Privacy	.239**	.568**	.327**	—	.441**	.280**	.146**
Responsibility	.191**	.514**	.409**	.441*	—	.211**	.200**
Scientific Understanding	.198**	.311**	.178**	.280**	.211**	—	.007
Spirituality	.190**	.084	.388**	.146**	.200**	.007	—

Note. Correlations for both users and non-users (n = 413) are presented. 1 = Achievement; 2 = Belonging; 3 = Concern for the Environment; 4 = Concern for Others; 5 = Creativity; 6 = Financial Prosperity; 7 = Health and Activity; 8 = Humility; 9 = Independence; 10 = Loyalty to Family or Group; 11 = Privacy; 12 = Responsibility; 13 = Scientific Understanding; 14 = Spirituality. * $p < .01$; ** $p < .05$; *** $p < .10$

Appendix B

Appendix B: IRB Approval Letter

Version 1.0 10-21-2009



EXPLANATION OF RESEARCH

Title of Project: Life values of psychedelic drug users and non-psychedelic drug users: A comparison study

Principal Investigator: William S. Saunders

Other Investigators: Chrysalis Wright, Lin Peng

You are being invited to take part in a research study. Whether you take part is up to you.

- The purpose of this human research is to compare the life values between psychedelic (hallucinogens) drug users, non-psychedelic (stimulants) drug users, non-illicit (depressants) drug users, and non-drug users.
- College students from the University of Central Florida will be asked to participate in an online-survey, using the Life Values Inventory, the Beck Anxiety Inventory, and the Beck Depression Inventory. Since the questionnaire will be carried out online, the location may vary depending on the participants.
- The duration of the questionnaire is from 15- 25 minutes. The maximum amount of time required to complete the questionnaire is 25 minutes. The minimum amount of time required to complete the questionnaire is 15 minutes.

You must be 18 years of age or older to take part in this research study.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints

Dr. Saunders. Faculty Supervisor, Department of Psychology at (352-406-0506) or by email at WStevenSaunders@ucf.edu

IRB contact about your rights in the study or to report a complaint: Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901.

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