AN INVESTIGATION OF PERSONAL TRANSFORMATIONS AND PSYCHOACTIVE PLANT USE IN SYNCRETIC RITUAL CEREMONIES IN A BRAZILIAN CHURCH

by

Michael Cougar

Abstract

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Fifty-two North American and European participants in syncretic Brazilian church religious ceremonies were assessed for indications of personality and clinical disorders, and tendencies towards chemical dependency and addiction. Research participants attended at least 6 syncretic ceremonies and consumed a psychoactive tea, Daime, which is made from 2 Amazon Basin rainforest plants, the rainha and jagube. The research sample completed the Clinical Analysis Questionnaire (CAQ), a standardized assessment designed to reveal tendencies toward clinical and personality disorders and chemical dependence. Subgroups of the research sample (based upon age, gender, length of time associated with the Santo Daime Church, number of Festivals attended, average number of ceremonies per Festival, and preexisting diagnoses for clinical disorders) also were assessed. The norm population scores initially were compared to the research sample scores, and then compared to sample subgroup scores for each subgroup. Statistical analyses of the assessment scales scores were performed using *t* tests and ANOVA. Statistical analyses generally revealed no tendencies toward psychopathology or chemical dependence within the research sample. This study reveals the benefits of ethological analyses of psychoactive substance use.

Dedication

This project is dedicated to the past and present indigenous peoples of the world whose intuitive knowledge made exploration of the benefits of plant medicines possible.

Preface

While on an extended vacation several years ago, traveling on a tributary of Brazil's Purus River, the motorized canoe in which I was riding was hit by a speed boat. Immediately after hitting the canoe the speed boat lifted out of the water, climbed the canoe's side rail and was literally in my face. Looking for an escape I ducked and lost consciousness. Upon regaining consciousness I was kneeling, turned around 180 degrees, with my hands on the bench on which I had just been sitting. The speed boat continued to climb using the canoe and my back as a launching ramp. As it ascended in a steep climb, I quickly realized the boat would crush me if I did not act immediately.

An inner feminine voice urged, "You can live if you want, but you have to make a decision *now*." In the same instant I heard the boat propeller whirring in thin air, coming my way. Shifting weight and arching my back, while turning hips and shoulder in aikido-like fashion, I looked over my right shoulder. There, 8 inches from my right elbow was the propeller, still spinning, but not red with my blood. The speed boat was laying on its side, half on the canoe and half on the rocky shore. The propeller had barely missed my back and spine, at heart level by no more than one fourth of an inch. In addition to the 9 inch gash on my head, I was missing a Texas watermelon-sized patch of skin and muscle tissue from my back. The skin had been literally ripped off my back by the bottom surface of the speed boat. My body went into shock: I became light-headed, disoriented, and lost the sense of having a physical body. For the next 34 days I recuperated in the isolated rainforest village of Ceu do Mapia.

While recovering, I participated in syncretic religious ceremonies with more than 1000 people, during which a psychoactive tea, known as "Santo Daime," or "Daime,"

was consumed. Daime is made from two plants indigenous to the Amazon Basin, the woody pulp of a vine and the leaves of a shrub. During the ceremonies, a familiar feminine voice, the same one I had heard on the river, spoke to me several times. The voice was inside me, clear and sweet, but firm and insistent. She instructed me to write my dissertation about her sacrament: about Daime.

The effects of the sacrament, experienced during the ceremonies, were astounding to my Western intellect. Intense visions, healings and teachings, came to me in a profoundly altered state of consciousness. I directly experienced the Divine Intelligence which imbues Santo Daime, working through my mind and physical body. Despite my consciousness being profoundly altered, I maintained focus, awareness, and my sense of selfhood: the observing "I" persisted. Throughout the ceremonies and my stay in the village, the other ceremonial participants were always well-behaved and treated each other with kindness and respect.

In discussing my overall experience with acquaintances, numerous other people reported experiencing similar psychic occurrences during the ceremonies. None of the participants I observed appeared to have been injured physically, emotionally, or intellectually in spite of having consumed large portions of the sacrament, in ceremonies lasting 12 to 15 or more hours. A recurring theme for many of the participants was that a Divine Intelligence communicated to them, which healed them from deep physical and emotional wounds, instructed them in worldly and spiritual matters, and assisted their spiritual growth. I was intrigued that a controlled substance, considered by Western culture to be without benefit, was instead revealed by personal experience and observation to have substantial benefits to body and psyche. Considering my instruction

to formally research the sacrament and my personal experiences, I wondered how it might be possible to objectively demonstrate the beneficial properties of Daime.

Acknowledgments

My Father and Mother must certainly be acknowledged, for without them and their loving kindness and compassion, I would not exist. Countless are the people who have contributed to this project in one way or another, many of whom will remain unknown even to myself. For those kind and gentle folks, I express my gratitude and appreciation. I am grateful to all the Divine Beings whom I have encountered in one way or another on my Life's path. They have given me Love, showered me with their Purity, exhorted me to Courage, and taught me Compassion for all living beings. To my Teachers, great and small, thank you for all your hard work, focus, and direction. I also express my appreciation to the communities of which I am a part, who have encouraged me throughout the process of this project. Their collective voice urged me to continue on with this project, despite the many doubts I encountered along the way. I also express my appreciation and gratitude to the members of my Dissertation Committee, who supported me in my process, and who also encouraged me not to give up during a long and difficult process, but to persist. Last, but not least, I am grateful to the people who participated in this research. For obvious reasons they shall remain unnamed. Without them and their collective courage to trust, speak up, and participate with their time and energy, research important to all people on the planet could not have been conducted.

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--A call heard Christmas Eve, 1999, in Ceu do Mapia, Brazil--

CHAPTER 1: INTRODUCTION

Research Questions Presented

The religious sacrament Daime contains *N,N-DiMethyl-Tryptamine* (DMT) and is considered to be a dangerous drug in the United States. DMT is listed as a Schedule I controlled substance pursuant to 21 U.S.C. sec. 812(c)(I)(c)(6) and in the Federal Registry (21 C.F.R. Sec. 1308.11(d)(16), April, 2003) and is thought to be without beneficial medicinal properties. A significant number of people participate in South American religious and spiritual ceremonies during which ayahuasca, or Daime, is consumed (Ott, 1996). Therefore, there may be value in researching the effects of the tea on a population who has ingested it.

Of particular interest to the research is whether, after having consumed a potent psychoactive tea, the research sample has healthy, functioning personalities, or has tendencies or indications of Axis I Clinical Disorders or Axis II Personality Disorders under DSM-IV criteria (American Psychiatric Association, 1995). Further, as illicit drug use is a considerable problem in Western culture, any research on the topic of psychoactive substances should examine issues relating to chemical dependence. This study examines whether the research sample may have participated in Santo Daime ceremonies as a result of a predisposition towards addiction or chemical dependence.

Hypotheses

The research hypothesizes:

1. If ingesting Santo Daime is harmful to a human population there will be differences in the mean scores between those ingesting Daime and the norm

population on clinical and personality scales of a standardized psychological assessment.

2. If the research sample consumed a psychoactive compound, Daime, because of addictive cravings, a standardized psychological instrument designed to reveal tendencies towards chemical dependence or addiction will demonstrate those tendencies.

Intended Audience

The potential audience of this research includes the international Santo Daime community, academia, government leaders and researchers, drug abuse counselors, and students of human nature. The results demonstrated whether persons in the research sample have experienced any statistically significant ill effects to their psychological or emotional well-being and to their personality traits, after drinking Daime. The research sample might have suffered psychopathological conditions after they participated at least six times in religious ceremonies and consumed the powerful psychoactive compound, Daime. The research results inform the intended audience of potential benefits and risks involved in participating in religious ceremonies during which consumption of Santo Daime occurs.

Significance of the Research

While the topic may appear unconventional from a Western intellectual perspective, ingesting psychoactive substances and experiencing altered states of consciousness for spiritual and religious purposes is not a new concept. From prehistoric

times, shamanism has honored alternative ways to perceive and function in the world (Lamb, 1985). As Dobkin de Rios (1995) noted, the invocation of altered states of consciousness through psychoactive plants has been utilized in many indigenous cultures throughout history. However, there has been extremely limited scientific research examining ayahuasca, or Daime, and its effects on humans. In her qualitative dissertation that studied the healing effects of Daime, Quinlan (2001) focused on narrative case studies of five rural Brazilian individuals experiencing chronic or terminal illness. In 1993, Grob et al. (1996) conducted a quantitative study regarding the effects of ayahuasca, with 15 members of a syncretic Brazilian church. To date, there has been no research regarding the effects of Daime on a North American research sample. The results of the two studies noted above did not find the use of ayahuasca or Daime was harmful to those research participants. However, this research considered the possibility that cultural differences between North and South Americans are significant enough that a North American sample might experience harm from ingesting ayahuasca.

There are a number of benefits which have been reportedly experienced by many participants in Santo Daime ceremonies. When these anecdotal reports are juxtaposed with the alleged harmful qualities of Daime's active ingredient DMT, it is important to demonstrate that a substantial research sample ingested Daime without any ill effects. In addition, objectively demonstrating psychospiritual benefits from drinking Daime reaffirms age-old shamanic ways of living in and experiencing the world. Further significance lies in demonstrating that the use of psychoactive plants is safe in managed, ritual settings, and that participants in psychoactive ceremonies remain psychologically and emotionally healthy.

The study assessed a research sample of 52 men and women who participated in at least six Santo Daime Church ceremonies in Brazil or Holland. During the ceremonies, the population drank Daime, a tea containing two psychoactive ingredients: DMT and an MAO inhibitor. Daime is a compound illegal to use or possess in many countries due to fears that DMT is capable of causing intellectual, emotional, or psychological harm. The research results reveal the research sample did not suffer any deleterious effects after ingesting Daime and participating in organized religious ceremonies. Current participants in Santo Daime Church ceremonies will now have a more knowledgeable basis upon which to evaluate continued participation in Church activities. This research supplements a growing body of data regarding the effects, risks, and potential benefits of psychoactive compounds.

Gaps in Previous Research

There is one extant study objectively assessing the effects of ayahuasca pre- and postceremony on participants in a ritual context (Grob et al., 1996). The Grob et al. (1996) research examined long-term participants of one syncretic Brazilian church: the Uniao do Vegetal (UDV). The international group of multidisciplinary medical personnel concluded that even after drinking ayahuasca (DMT) for ten years and more, the UDV participants exhibited healthy personality characteristics. A number of the research subjects reported experiencing remission from previous addictions or emotional disorders and being productive members of their communities.

Other than Quinlan's (2001) research with chronic and terminally ill individuals, Santo Daime and the effects of its rituals, music, and ideology, which differ from the

UDV, has not been studied on large samples of North Americans or Europeans. Because the Grob et al. (1996) study involved Brazilians exclusively, the results of that study do not necessarily translate to a North American or European cultural perspective. The Brazilian UDV study utilized the Tridimensional Personality Questionnaire (TPQ), a personality assessment which lacks a chemical dependency scale (Cloninger, Svrakic, & Przybec, 1993).

I chose instead to utilize the Clinical Assessment Questionnaire (CAQ) (Institute for Personality and Ability Testing, Inc., [IPAT] 1978), which contains scales measuring Axis I Clinical Disorders and Axis II Personality Disorders, and trait scales measuring tendencies towards chemical dependency. The CAQ was chosen to more fully evaluate the psychological and emotional well-being of the research sample. It was also chosen to assess whether the population participated in the Santo Daime ceremonies out of a desire to quench an addictive thirst for chemical stimulation. Another strength of the CAQ is that, unlike the Minnesota Multiphasic Personality Inventory (MMPI), it provides information on normal personality characteristics as well as pathology, and the CAQ is therefore more sensitive to effects on normal populations.

Transformation and Altered States Are Transpersonal Topics

This study examined the effects of a plant medicine, or psychoactive tea, on the research sample. Ingestion of the tea has been noted to result in powerful psychodynamic changes: an intentional alteration of consciousness. By definition, a research topic focusing on intentional invocation of altered states of consciousness and examining relationships to those states is transpersonal. The research topic brings participant and

reader together, providing opportunities to assess alternative ways to safely induce altered states of consciousness.

Modern Western culture is awakening to the potential for human transformation assisted by psychoactive plants, which have been known and used by indigenous peoples for millennia. Psychoactive plants are, according to Schultes and Hoffman (1992),

> Complex chemical factories . . . [whose] full potential as aids to human needs . . . [are] not yet fully recognized. . . .they have long played an important role in the religious rites of early civilizations . . . [and] are still held in veneration . . . as sacred elements by certain peoples [living] in cultures . . . bound to ancient traditions and ways of life. (p. 9)

The intelligence innate in Santo Daime offers multiple layers of healing and teaching through which the ordinary self may be transformed, wholeness discovered, and interconnections with all life, seen and unseen, realized. The actual significance of this study was found in the assessment results.

Research Method

A blended research design, utilizing both quantitative and qualitative methods, was initially proposed. During the research process the method was modified, as explained in Chapter 3: Method. Ultimately, the research incorporated a standardized psychological assessment: the CAQ. The research sample was comprised of 52 North Americans and Western Europeans, combined into one research group, who participated in Santo Daime Festivals in Brazil and Holland, where the sacrament is legal. The research sample completed the standardized assessment.

The CAQ trait scale scores were statistically analyzed by a computer software program: the SPSS Graduate Pack 13.0 for Windows (SPSS, 2004). The research

sample's Personality Trait and Clinical Factor trait scales mean scores on the CAQ were initially compared and contrasted with the norm population to assess for variances between the groups. Then, the research sample was subdivided into groups based on criteria determined by gender, age, and duration of experience with the Santo Daime Church and its ceremonies. Finally, the research sample subgroups' scale scores were compared, contrasted, and assessed, for any statistically significant variances between the subgroups, and for deviations from the mean of a healthy personality.

Definitions

The term *entheogen* denotes a class of inebriants known to incite ecstatic states and traditionally used in shamanic or religious rites and celebrations (Ott, 1996). Entheogens cause neither hallucinations nor psychosis. The term encompasses natural plant and animal chemical compound sources, as well as their synthesized derivatives. Entheogens are not intended to be used recreationally; rather their purpose is to convey knowledge about deeper levels of human consciousness and other realms, or dimensions, of existence.

O'Neil (as cited in O'Neil, 1987) defined *syncretic* as utilizing familiar Christian practices for purposes unapproved by the Church.

Lamb (1985) defined *shamanism* as a way of life, with its roots in prehistory, that uses ritually controlled access to ecstatic states of consciousness in order to gain knowledge in ways unlimited by the physical senses.

Hutchins (2002) notes the term *transpersonal* connotes a spiritual recognition of humanity's drives towards sex, aggression, transformation, and wholeness; toward

connection with and experience of the divine, including the study of altered states of consciousness.

Hoffer and Osmond (1967) referred to plants that contain chemical compounds, with the ability to induce changes in how we perceive the world around us, how the brain processes information, and how we express and experience ourselves emotionally, as *psychoactive*. Katz, Waskow, and Olsson (1968) noted psychoactive compounds produce profound alterations in human consciousness, while facilitating emotional and intellectual experiences of considerable magnitude and duration. Psilocybin mushrooms, peyote cactus, morning-glory seeds, cohoba snuff, ayahuasca, and iboga are just a few of the many botanical substances available from natural plant sources, all of which are psychoactive (Schultes & Hofmann, 1992).

The term *ayahuasca* roughly translates to "vine of the soul," which is also a name of one of the two main plant constituents of the tea: the *Bansteriopsis caapi*, or jagube vine or liana (Schultes & Raffauf, 1992). Schultes and Raffauf (1992) noted ayahuasca is a generic term encompassing various sacramental beverages depending on the shamanic tradition and indigenous tribe in which it is used. Pharmacologically, the class of entheogens known generally as ayahuasca are plant admixtures containing the B-carboline alkaloids harmine, harmaline, and tetrahydroharmine, all harmala alkaloids, first isolated in 1841 (Callaway et al., 1999), and DMT, *N,N-Dimethyl-tryptamine*, initially isolated in 1847 (Ott, 1996).

Neufeldt and Guralnik (1984) defined *synesthesia* as a process whereby one objective stimulus produces a secondary subjective sensation. Thus, a person may experience a sound as color, or an object as emanating a feeling or vibration.

CHAPTER 2: LITERATURE REVIEW

Primary and Secondary Sources of Review

This Chapter discusses extant knowledge concerning prehistoric and modern day indigenous and urban religious and spiritual practices involving psychoactive plants. Previous scientific research concerning psychoactive compounds, and in particular research about *vegetal*, a beverage very similar to Santo Daime, is introduced. The literature reviewed for this dissertation comprise peer-reviewed journals, popular books with peer-reviewed references, magazines, and personal communications. The literature review covers discussions of a small but well-known group of psychoactive plants and drugs known to profoundly alter consciousness, and descriptions of how humans structure experience internally (Reidlinger & Reidlinger, 1994).

Dobkin de Rios and Grob (1994) argued that illicit drug abuse in contemporary Western culture is a symptom, rather than a cause, of destabilized family structures, alienation, and nihilism. Drug abuse has resulted in increased violence, sexual assaults, and suicide rates. They further argued, together with Baker (Dobkin de Rios, Grob, and Baker, 2002), that psychoactive plants, when utilized in ceremonial context, have supported socialization, orientation, and enculturation of indigenous youth. Typically, psychoactive materials are used haphazardly in Western culture without the benefits of a metaphysical belief system to explain or contain the phenomena experienced (McKenna, Luna, & Powers, 1986). In contrast, in shamanic-based cultures usage always occurs within a ritual and therapeutic context because medicine plants are respected and revered for their power and perceived intelligence. Thus, while in one context drug abuse reflects

a dysfunctional cultural experience, in other contexts people are socialized and learn values, tribal identity, and religious beliefs (Dobkin de Rios, Grob, & Baker, 2002).

One of the shortcomings of studying plant-induced altered states, and ayahuasca in particular, is the paucity of previous research addressing the actual experiences of individuals who participate in entheogen-based religious ceremonies. Yet, psychotropic plant compounds are responsible for a unique symptomology in humans, with profound changes in perceptual and cognitive abilities and perspective (Callaway et al., 1996). Psychoactive compounds from plants open the door to the subconscious mind and alternate realities (Ott, 1996).

This literature review is intended to provide a context for the reader by discussing the neurological aspects of psychoactive compounds and their effects on humans and various cultures which have incorporated their use. Context assists the reader to understand indigenous uses of medicine plants in ceremonial and collective life. Context allows the reader to consider the possibilities of wider applications for psychoactive compounds. As Bullis (1990) reported, psychoactive plants have a place in the spiritual expressions of humanity, and can be used safely within a managed ritual setting. Research with the psychoactive cacti, *peyote* (Grinspoon & Baklar, 1986), and the African plant, *iboga* (De Rienzo & Beal, 1997), has demonstrated that plant medicines produce dynamic effects by modifying entrenched addictive habit-patterns.

Psychoactive Plant Compounds

Hoffer and Osmond (1967) reported psychoactive compounds from natural sources originate from a wide range of plants, fungi, and animals. Plant compounds

produce a unique but specific assortment of anomalous subjective states in human subjects. Hoffer and Osmond (1967) also noted psychoactive plants have unique abilities to influence our perceptions, how we process information, and how we experience emotions. In particular, plant compounds evoke marked alterations in self-awareness. Rarely do psychoactive plants cause mental confusion, loss of memory or disorientation. Many plants, and some animals, including amphibians, have been the subject of research for their medical or psychoactive properties (Ott, 1996). While all psychoactive plants are potentially toxic, actual toxicity and overall effect of any particular plant compound depends on the dosage.

The psychoactive compounds discussed in this research are nonaddictive and vary in which sense organ(s) they affect (Schultes & Hofmann, 1992). The active alkaloid in peyote cactus, mescaline, as well as psilocybin mushrooms and morning glory seeds, are reported to alter several sense organs simultaneously. Psychoactive compounds are classed as alkaloids and have similar molecular structures. They are all related to norepinephrine, a brain hormone, and affect the same areas of the human brain. Norepinephrine is a neurotransmitter, and its function is to convey nerve impulses between nerve cells of the brain.

Cultural Milieu

The urge to transcend ordinary reality and existence is as old as humanity itself (Boire, 1994). For uncountable millennia shamanism has been the most widely held spiritual practice of all religious systems which attempt to explain world phenomena and appearance (Dobkin de Rios, 1995). Indigenous religious and shamanic practices

involving psychoactive plants and their admixtures began prehistorically and continue in modern times, in cultures across the globe (Callaway, Airaksinen, McKenna, Brito, & Grob, 1994). Over time, the use of psychoactive plants became generally associated with certain individuals: the shaman or medicine man, who utilized visions induced by the plants for many purposes (Trupp, 1981). Indigenous tribes in the Amazon Basin utilize psychoactive plants to contact alternate realities, learn about the forest and life's journeys, and diagnose and heal disease (Lamb, 1974). In North America, the Native American Church (NAC) utilizes the sacramental peyote cacti in tepee ceremonies to communicate with the plant's spirit, Grandfather Peyote, and with Jesus (Bullis, 1990).

The very survival of early humans depended on knowing which plants provided food and shelter, which plant medicines created health and made life more tolerable, and which plants could provide a source of contact with the spirit world. Ott (1999) reported that psychoactive substances, containing tryptamines and DMT in snuffs and beverages, are widely used in spiritual and religious ceremonies in many South American tribes for divination. Grob (1998) argued that historically, psychoactive plants have played a major role by creating the web of community and cohesion among tribal peoples. However, technologically advanced and stratified cultures generally view psychoactive plant use as dangerous.

Peyote cactus, psilocybin mushrooms, morning glory seeds, cohoba snuff, and ayahuasca have been used for spiritual-religious purposes in North, Central, and South America for centuries (Pahnke, 1972). Spanish conquistadors recorded the Aztec's use of psychoactive plants during religious celebrations and recounted the visions reported by the participants (Schultes & Hofmann, 1992). But Grob (1998) argued much of the

ancient wisdom concerning healing and psychoactive properties of plants was lost, as fear of psychoactive plants deeply embedded itself in Western consciousness between the 14th and 17th centuries.

During the Inquisition, church leaders felt threatened by herbal healers and plant-induced ecstatic experiences that allowed independent access to spiritual realms (O'Neil, 1987). The seeming supernatural powers of certain plants were believed to be tools of the Devil sent to undermine the Church, the political power of the conquerors, and the spread of Christianity. Perceiving and fearing the loss of its secular power, the Catholic Church outlawed use of psychoactive plants on pain of excommunication and death. However, indigenous peoples in North and Central America continued to use psychoactive compounds from plants and fungus, including mescaline and psilocybin (Ott, 1996). In modern times, Siberian shamans continue to ingest psychoactive plants in religious ceremonies (Huxley, 1977) as do the indigenous inhabitants of the South American rainforest (Schultes & Raffauf, 1992). In West Africa the Bwiti tribe uses *iboga*, another psychoactive plant (De Rienzo & Beal, 1997). Iboga is currently under study by Western medical researchers for possible applications in treating addiction behaviors (De Rienzo & Beal, 1997).

Unique Aspects of Psychoactive Research

In research, psychoactive compounds have been useful in determining the etiology of mental disorders by chemically inducing altered behavioral states (Cole & Katz, 1964). By observing total functioning ability and considering the experiences of research participants, scientists better understand the biochemical origins of Axis I

clinical disorders. Although ultimately disproved, Callaway (1996) noted that early researchers believed psychoactive compounds mirrored psychotic states such as schizophrenia.

Early studies with adrenalin lead researchers to believe the experience of emotions required the presence of physical and cognitive components. Researchers assumed the emotional and physiological characteristics of an emotional state could not be induced chemically. Schachter and Singer (1962) posited that cognitive components were the major determinants of emotional states. However, subsequent LSD research revealed alternate conclusions: an emotional state, such as anger or joy, can occur independently of and be artificially divorced from any cognitive activity (Katz, Waskow, & Olsson, 1968). Another benefit to psychoactive research is the opportunity to investigate particular aspects of human behavior and psychology (Schachter & Singer, 1962). The research process has helped to objectively balance the harmful and beneficial effects of psychoactive compounds and has provided balanced and informed conclusions regarding their utility to society.

Significant numbers of promising psychoactive research projects were conducted between the early 1950s and 1965 (Walsh, 1982). However, psychoactive research all but stopped when the U.S. government made psychoactive compounds nearly impossible to obtain, even for legitimate scientific purposes (Reidlinger & Reidlinger, 1994). Recently, new research efforts are beginning to show measurable results with addiction treatment as Western medicine recognizes the potential benefits available to humans from psychoactive plants (De Rienzo & Beal, 1997).

Therapeutic and Human Potential Aspects of Psychoactive Research

Eisner (1997) and others conducted psychoactive research over a 22 year period, during which specific protocols were developed. Both set (i.e., the environment from which the client comes) and setting (i.e., the immediate environment in which the session takes place) were found to be important to overall success of a psychoactive therapeutic session. United Nations researchers also noted the uniqueness of psychoactive compounds (World Health Organization, 1958). Those researchers reported users had dissimilar experiences and the sole variable seemed to be dissimilar environmental surroundings.

Schultes and Hofmann (1992) noted the brain's filtering mechanism allows in only a fraction of the available impressions from the environment and the unfiltered impressions are acted upon by the organism. Without the filtering process humans would be overwhelmed by the environment. When psychoactive compounds are ingested the filtering process is diminished and more unconscious material is available to consciousness for consideration. Reidlinger and Reidlinger (1994) revealed that psychoactive compounds are nonspecific amplifiers that bring unconscious fears and other psychological material to conscious awareness.

Prior to prohibitions against psychoactive research, reported results were generally favorable (Grinspoon & Baklar, 1986). Grinspoon and Baklar (1986) reported psychoactive compounds provided relief from neurotic, somatic, and other complaints such as obsessional neurosis, sociopathy, anxiety, and depression. Alcoholics who were treated with psychoactive compounds experienced lower recidivism rates. Terminal patients experienced enhanced levels of self-acceptance and reduced fear of death.

Through psychoactive therapy, self-exploration and spiritual growth are encouraged and the psychotherapeutic process is accelerated. The client more easily explores and understands common ego defenses, such as projection, denial, and displacement.

Psychoactive therapy treats the cause of emotional and psychological suffering, while chemotherapy simply relieves symptomology (Grinspoon & Baklar, 1986). Psychoactive compounds are catalysts, and in the proper circumstances provide opportunities for significant personal insight and development. Reidlinger and Reidlinger (1994) noted in their meta-analysis of psychoactive research reports, that healing occurred as unconscious issues were highlighted and projected into present awareness. The therapeutic process allowed those research participants to develop deeper insights into behaviors and the insights were then integrated into the participants' daily lives.

While Harvard psychologists and professors Richard Alpert and Timothy Leary extolled the virtues of spiritual and human potential through indiscriminate use of psychoactive plants and compounds, such claims evoked hostility and disbelief in government and medical circles (Grinspoon & Baklar, 1986). In reaction to increasing illicit drug abuse, the U.S. government took steps to reduce or eliminate altogether the availability of psychoactive compounds, even for serious research. Consequently, professional interest in psychoactive research declined. Grinspoon and Baklar (1986) responded that psychoactive compounds are neither to be considered a panacea for all ills, nor are they entirely worthless and extraordinarily dangerous substances to be avoided at all costs. However, Walsh (1982) reported at least one prominent psychiatric journal was unwilling to accept any positive research results from him due to

sensationalistic misinformation of the popular media and bias towards reporting only negative research results.

After 9 years of psychoactive research Walsh (1982) reported general principals emerged from his work. Psychoactive compounds are authentic tools for personal growth but overall effectiveness is dependent on user sophistication. He noted appropriate settings and the presence of a trained guide are necessary during the session and the client should be able to intellectually reference the experience through involvement in a psychological or consciousness discipline. Walsh (1982) also noted there were potential shortcomings to psychoactive work. These included an assumption that the experience itself would transform consciousness without any need for personal effort. Another drawback was potential attachment to the psychoactive-induced experience and failure of the participant to appreciate other possibilities. Without the necessary ability or training to allow actual integration of the psychoactive experience, benefits from a particular session may be short-lived.

Lysergic Acid Diethylamide-LSD

Lysergic acid diethylamide (LSD) was initially synthesized from rye ergot in 1938 (Cuomo, Dyment, & Gammino, 1994). It is reputed to be the most powerful hallucinogen, affecting perception, mood, and thought. LSD is not addictive (Cohen, 1960). It is colorless and tasteless and may be absorbed through the skin, ingested orally, or injected (Pahnke & Richards, 1969). The chemical structure of LSD is identical to a compound made from seeds of the herb oboliuqui, *rivera corymbosa,* or morning glory; a plant utilized preconquest by the Aztecs in religious ceremonies (Hoffer & Osmond,

1967). Schultes and Hofmann (1992) noted consumption of oboliuqui continues presently throughout Central and South America among indigenous people.

Cohen (1960) reviewed research totaling more than 25,000 administrations of either LSD or mescaline to individuals and concluded that laboratory-pure LSD is safe when precautions are taken and it is administered to healthy individuals in medical settings. Masters and Houston (2000) reported on research involving over 200 individuals working with LSD under therapeutic supervision. There were no reports of postsession psychotic breaks or suicide attempts. In contrast, early U.S. Army and CIA experiments on uninformed and ill-prepared subjects did result in some suicides (Lamb, 1985). Using strict research criteria Masters and Houston (2000) reported 5% of their research participants had undergone radical self-transformation and experienced fundamental and positive changes through psychological integration of their work. Schmiege (as cited in Unger, 1963) reported therapeutic uses of LSD included increased memory and abreactions to traumatic events, increased transference reactions, activation of the unconscious and increased affectivity. In the same report, Harman (as cited in Unger, 1963) concurred that LSD is medically safe but urged that it be handled with the same care and responsibility as one would with electricity or an automobile.

Pahnke, Kurland, Unger, Savage, and Grof (1970) took note of a number of scientific and media reports of chromosomal damage to human lymphocytes occurring in LSD users. However, they were unable to support findings of chromosomal damage in their research sample and concluded that previous reports were both conflicting and inconclusive. Similar results were reported by Tijo, Pahnke, and Kurland (1969), who criticized inconclusive and unduplicated results in numerous studies. Commenting on the

reported psychological dangers of LSD usage, Pahnke et al. (1970) noted in over 300 patients they studied, none had suffered from any long-term harm. Several factors contribute to successful psychotherapy with LSD, including the patient's physiology and psychology, their preadministration expectations, and the environment where the session takes place (Cole & Katz, 1964). Research volunteers reported intense and unusual psychic effects ranging from visual distortions, rapid cycling of emotional states, depersonalization, and bizarre changes in body image, to sensations of death and rebirth. Feelings of happiness, relaxation and perceptual sharpness were contrasted with affectations of giddiness, weakness, sobriety, and seriousness.

Psilocybin Mushrooms

Psilocybin mushrooms have been used ceremonially for at least 6,000 years, and were considered to be the flesh of God by the Aztecs (Boire, 1994). In Aztec ceremonies, psilocybin mushrooms were eaten with chocolate and honey (Allen, Merlin, & Jansen, 1991). Archeological pottery findings date the usage of psychoactive mushrooms in Mexico to at least 3,000 years (Schultes & Hofmann, 1992). Presently, Mazatec and other indigenous peoples in Mexico consume psychoactive mushrooms and regard the fungi as a holy key to communion with the Deity (Wasson, 1959). The fungi are also reported to be utilized for divinatory purposes (Allen et al., 1991). In all-night healing rituals, the shaman chants and prays, uses rattles and other magical tools, and blows tobacco smoke over the bodies of the participants as they experience fantastically colored and kaleidoscopic visions and teachings.

The psychoactive alkaloids, psilocine and psilocybine, were initially isolated in 1938 and synthesized in 1942 by the same Swiss chemist who discovered LSD, Albert Hoffman (Ott, 1996). Synthesized samples were provided to Mazatec medicine woman Maria Sabina, who reported no difference between the natural and synthesized compounds. Ludwig and Levine (1966) reported the neurological effects of psilocybine were practically indistinguishable from LSD and mescaline. Abramson, Rolo, Sklarofsky, and Stache (1960) reported psilocine and psilocybine are cross-tolerant with LSD and they determined identical neurotransmitter sites are involved with all three compounds. Psilocybin mushrooms contain tryptamine-based alkaloids (Allen et al., 1991) and MAO inhibitors (Ott, 1996). The psychoactive fungus is found world-wide in more than 89 species, in varied potencies, and is consumed either fresh or dried (Allen et al., 1991). Psychoactive effects usually begin to manifest within 30 minutes (DeKorne, 1994), and range from divine euphoria and uncontrollable laughter to hallucinations (Wasson, 1959).

Boire (1994) reported on the first double-blind experiment in 1962 in which 10 doses of psilocybin and 10 doses of nicotinic acid were administered to 20 undergraduate theology students. A significant number of the experimental group reported that profound and lasting life-affirming effects on their religious perspectives resulted from the experience. Medicinal properties in certain species of psychoactive mushrooms include compounds usable for treatment of gout and malaria (Ott, 1996).

Peyote Cactus

Peyote has been used by Mexico's Huichol Indians, their Toltec predecessors, and even earlier Tarahumara populations for at least 3,000 years (Schultes & Hofmann,

1992). Prior to Spanish conquest, the Aztec Indians of Mexico used peyote in religious rites (Ott, 1996). Fearing it was a product of the devil, the Catholic Church prohibited usage of the cactus in 1620. However, the native populace continued to practice their religion in extreme secrecy.

In the United States, peyote use among the tribes was virtually unknown prior to 1885 (Schultes & Hofmann, 1992). As the United States Government proceeded with pacification efforts, the indigenous tribes introduced the peyote religion to preserve the native peoples' heritage through ceremony. The Native American Church (NAC) now numbers at least 250,000 members. All-night Peyote Meetings are held to heal the afflicted, to commemorate important events such as the death of friends and relatives, express gratitude for recovered health, birthdays, journeys, or for general thanksgiving. Participants strive to reduce the visual, hallucinatory effects of peyote by focusing instead on what Grandfather Peyote teaches. Bullis (1990) reported that peyote use is neither addictive nor harmful to humans; there have been no reports of overdoses, and further, the NAC believes no overdose is possible.

While the possession, cultivation, and manufacture of many psychoactive plants is generally illegal in the United States, Bullis (1990) reported that a significant number of American legal jurisdictions have exempted the use of peyote by native people from criminal sanctions. In many state and federal courts, peyote has been recognized as a legitimate ritual sacrament. The NAC has legitimately established its belief that peyote is a sacrament and a tangible sign of divine healing mandated by God. The NAC asserts the divine presence of Creator is in the flesh of the peyote cactus.

Peyote cactus is slow growing and has a tapering root approximately 30 cm long (Anderson, 1969). Frequently more than one body grows from the root stock. The body is blue- or reddish-green with singular, usually pink flowers. Peyote's psychoactive alkaloid, mescaline, was initially isolated in 1896 and initial scientific reports about it were published in 1888 (Ott, 1996). It was the first entheogen to be isolated in pure form and was initially synthesized in 1919. Mescaline is a stable compound, having been detected in samples 1,000 years old (Bruhn, Lindgren, & Holmstedt, 1978). The psychoactive alkaloid appears to bind to the same neurotransmitter sites as LSD and psilocybin (Ludwig & Levine, 1966).

The psychoactive effects of peyote usually begin within one hour, and last between 8—12 hours (Ott, 1996). Occasionally nausea and abdominal cramping are reported, with a slight increase in body temperature. Visual and auditory alterations are frequently reported, along with loosening of ego boundaries and synesthesia (e.g., musical notes may be experienced as colors), similar to the effects of LSD (Schultes & Hofmann, 1992). An acute loss of ego boundaries may even result in feelings of harmony and unity with the entire Universe or the Divine Creative Principal (God). The juice of the peyote cactus has reputed medical benefits, including antibiotic qualities, pain relief, and easing of labor difficulties. Peyote has also been effective in treating alcohol addiction (Grinspoon & Baklar, 1986).

Ayahuasca

The jagubi liana, *Banisteriopsis caapi*, has been the subject of scientific study, both for its psychoactive and medicinal properties, for at least 50 years (Ott, 1996). It is a

fast growing, double helix DNA-shaped vine and contains the second principal ingredient of ayahuasca (Rheingold, 1989). With time, the vine can easily grow several hundred feet up into the forest canopy. Ayahuasca is bitter to the taste, although the bad taste may be mitigated depending on age, extent of fermentation, and other factors (Lamb, 1985). Ayahuasca is also called spirit vine, ladder to the Milky Way, vine of the soul, and vine of death (Schultes & Raffauf, 1992).

Ayahuasca is not for recreational use. The reputed effects can include nausea and diarrhea, enhanced awareness of the physical senses, external objects may change shape, sound may be experienced through the eyes or color may be experienced with the ears (i.e., synesthesia) (Luna & White, 2000). Deep levels of consciousness are more easily accessed in ayahuasca ceremonies. Participants in the ceremonies have even reported encountering an intelligent presence identified with the sacrament (Luna & White, 2000). Schultes and Raffauf (1992) reported ayahuasca does not interfere with muscular coordination. However, other researchers have indicated walking and other physical movements can be difficult at times (McKenna, 2000). Participants in ayahuasca and Santo Daime rituals have reported powerful visions of alternate spiritual realities. One participant described his experience as follows:

> I realized, at a certain point during the [Santo Daime] ceremony, that some people dancing around the Star of David were condensing and expanding an energy and that it could be "seen." Similar to the preparation of bread dough, it was being stretched, kneaded and prepared until it was "ready." Those moments of working with the energy (when the music and the sound of the maracas [wooden-handled rattles, made by placing shotgun pellets in a small tin can] played such an important role) occasionally reached an apex, a moment of very intense harmony from within the current. We could feel the force of the current itself as a whole, syntonize and feel telepathically the role of each individual in the creation of that incredible field of energetic force which was the sum of all those minds directed toward a similar spiritual goal.

> It was at those moments of harmony that the visions occurred with more force. And there was a clear sensation that everyone was enjoying the same extraordinary moment. That was the secret. And the silent complicity enclosed in the ritual, pontificated by the Daime, divided people into two groups: those who were on the inside and those who were outside the revelation of that certain secret. (Polari de Alverga, 2000, p. 150)

In 1991, Dennis McKenna (McKenna, 2000) attended an ayahuasca symposium in Brazil sponsored by the Uniao do Vegetal, a syncretic Brazilian church. At the conclusion of the conference, a ceremony was held during which ayahuasca was served. After the second serving, the effects of the tea became pronounced.

> At the instant I had that thought; I heard a voice, seeming to come from behind my left shoulder. It said something like, "you wanna see force? I'll show you force!" The question was clearly rhetorical, and I understood that I was about to experience something whether I wanted to or not. The next instant, I found myself changed into a disembodied point of view, suspended in space, thousands of miles over the Amazon basin. I could see the curvature of the earth, the stars beyond shown steadily against an inky backdrop, and far below I could see swirls and eddies of clouds over the basin, and the nerve-like tracery of vast river systems. From the center of the basin arose the World Tree, in the form of an enormous *Banisteriopsis vine.* It was twisted into a helical form and its flowering tops were just below my disembodied viewpoint, its base was anchored to the earth far below, lost to vision in the depths of mist and clouds and distance that stretched beneath me. As I gazed, awestruck, at this vision, the voice explained that the Amazon was the Omphalos of the planet, and that the twisted, rope-like Yggdrasil/Mariri World Tree was the linchpin that tied the three realms—the underworld, the earth and the sky—together. Somehow I understood—although no words were involved—that the . . . vine was the embodiment of the plant intelligence that embraced and covered the earth, that together the community of plant species that existed on the earth provided the nurturing energy that made life on earth possible. (pp. 155-156)

Schultes and Hofmann (1992) noted during indigenous ayahuasca rituals:

> Frequently, the Indian sees overpowering attacks of huge snakes or jaguars. These animals often humiliate him because he is a mere man. The repetitiveness with which snakes and jaguars occur in Ayahuasca visions has intrigued psychologists. It is understandable that these animals play such a role, since they are the only beings respected and feared by the Indians of the tropical forest; because of their

> power and stealth, they have assumed a place of primacy in aboriginal religious beliefs. (pp. 121-122)

Constituents and Psychoactive Effects of Ayahuasca

Ayahuasca is a tea, created by combining harmala alkaloids (Callaway et al., 1999) with tryptamines, a DMT precursor (Ott, 1996). Harmala alkaloids are found in many plants and animals, including Syrian rue (used for dying fabric), grasses, cacti, trees, vines, and even some mushrooms, comprising over 100 species, in 27 families and 60 genera. While DMT has been found in human cerebrospinal fluid, the human body also produces DMT from the amino acid tryptophan. McKenna and Towers (1984) also reported DMT is found in human blood, brain, liver, and lung tissue. Tryptophan is an essential amino acid and precursor of several psychoactive compounds including ibogaine, psilocybin, and bufotenine (Hoffer & Osmond, 1967). Likely neurotransmitter receptor sites for DMT are found in mammalian brain tissue and it is thought to be endogenous (naturally occurring) in humans (Christian, Harrison, Quayle, Pagel, & Monti, 1977). For ethical reasons, Callaway (1996) reported DMT had not been sought in healthy human brain tissue because such a determination would require collection of brain tissue from living subjects. Shulgin (1976) reported DMT has been isolated in human urine, blood samples of normal and schizophrenic subjects, and is neither physically nor psychologically addictive.

DMT was first synthesized in 1931 (Manske, 1931) and initially was considered to have no pharmacological value (Ott, 1996). Subsequently, controlled experiments revealed DMT to be a fast-acting but short-lived entheogen when injected intramuscularly (Holmstedt et al., 1967). The psychoactive effects commence within 5

minutes, peak in 15 minutes, and taper off after 45 minutes (Ott, 1996). If DMT is vaporized and inhaled, the effects begin immediately and increase dramatically, but the duration of the effects are also shortened. Synthesized DMT primarily affects vision, with fast moving, colorful geometrical patterns that occasionally have deep emotional subject matter and meaning (Holmstedt et al., 1967).

Since tryptophan naturally occurs in foods consumed by humans, and circulates in the bloodstream, a blood-brain barrier necessarily functions to control levels of tryptophan, serotonin, and molecularly similar compounds including DMT (Ott, 1996). The blood-brain barrier renders DMT inactive orally and prevents the body's normal serotonin metabolism from malfunctioning, which can be fatal. Serotonin performs important neurological functions by transmitting impulses from one neuron to another across nerve gaps, known as synapses (Ott, 1996).

Udenfriend, Witkop, Redfield, and Weissbach (1958) noted that harmala and harmaline interact in the mammalian brain to inhibit an enzymatic process known as monoamine oxidase inhibition (MAOI). The MAOI process regulates normal dopamine and serotonin neurotransmitter activity in brain tissue (Ott, 1996). Taken orally, DMT is rapidly oxidized in the stomach by the MAOI processes, resulting in an inactive metabolite (Barker, Monti, & Christian, 1980). Harmala alkaloids reversibly inhibit MAOI processes in the body, while tetrahydroharmine inhibits serotonin uptake at presynaptic neurotransmitter sites. So, while the blood-brain barrier normally prevents DMT from orally activating (Shulgin, 1976), when combined with an MAOI, DMT activates, with dramatic psychoactive effects (Ott, 1996).

Ott (1996) attributes the difference in reported potencies of ayahuasca to the admixture of plants used to make the beverage. The stronger, more effective, ayahuasca potions appear to be the result of combining MAOI (harmala alkaloid extracts) from the jagubi vine, with leaves from the rainha, which contains tryptamines and the chemical compound DMT. In the Amazon Basin, the jagubi vine is pounded into a pulp and added to leaves of the rainha; the mixture is then boiled for several hours (Callaway et al., 1999). Schultes and Hofmann (as cited in Flores & Lewis, 1978) reported the ayahuasaquero, or traditional shamanic healer may add other ingredients including plants from the tobacco or datura family (known to trigger an awareness of flying), or various ferns, mints, sedges and cacti.

Historical Indigenous Uses

The Amazon Basin encompasses portions of six South American countries, an area as large as the 48 United States (Schultes & Raffauf, 1992). It is impossible to know exactly how long ayahuasca has been used by the hundreds of indigenous tribes of the Amazon Basin. However, humans are known to have utilized psychoactive plants, and ayahuasca teas in particular, from pre-Columbian times, which Ott (1994) reported occured throughout the Amazon and other river basins of South America. Both Rouse (1949) and Trupp (1981) reported prehistoric petroglyphs of religious or totemic importance were found throughout the Amazon Basin depicting animals such as jaguars and snakes; often seen under the influence of ayahuasca. Dobkin de Rios (1972) reported ayahuasca was used for religious and spiritual purposes throughout the Amazon Basin prior to conquest by Europeans. Despite savage repression of the use of ayahuasca by

early conquerors, shamanic spiritual and healing ceremonies among indigenous peoples in the region continued into the 20th Century (Taussig, 1986). Currently, ayahuasca is used in the Amazon Basin and known by several names, including ayahuasca, caapi, yage, vegetal, and Daime (Callaway & Grob, 1998).

The Amazon Basin's indigenous medicine people are believed to be intermediaries between the Sun God and ordinary humans, charged with overseeing the welfare of the tribe (Schultes & Raffauf, 1992). The shaman is believed to be able to transform his or her physical form into a jaguar or anaconda, animals with potent reputations as cunning and powerful hunters. Each animal plays important roles in rainforest mythology and figures prominently in many shamanic rituals. While Allen (1947) did not report on what he called "vulgar pharmacopoeia," (p. 579), he did note the rainforest shaman, or paye', uses a psychoactive snuff, crystals, rattles, feathers, and other paraphernalia in rituals and practices. Powers of the paye' reputedly include the ability to control lightning and the weather, cure the sick, identify evildoers, transform into jaguars, and shoot magical stones to kill or injure enemies.

Schultes and Hoffman (1992) noted indigenous people have traditionally considered ayahuasca an aid in diagnosing and treating a wide variety of illnesses. Participants in ancient ayahuasca ceremonies reported experiencing freedom of the soul from the physical body, accessing alternate realms of reality, and communicating with their ancestors. The shared experiences of ceremonial participants helped to further community cohesiveness and security within the tribe (Dobkin de Rios & Grob, 1994). Harner (1973) cited anacondas and poisonous reptiles, jaguars and other predators were frequently encountered in visionary experiences during ayahuasca ceremonies. He also

noted participants reported experiencing events in distant cities, contacting distant persons, and communicating with the supernatural.

Depending on the shaman's training and the task to be performed, various plants are added to the admixture that becomes ayahuasca (McKenna et al., 1986). One supplement, leaves of the chagropanga, *dipolterys caberana*, significantly enhances the effects of ayahuasca due to the concentration of tryptamines in the leaves. Another plant supplement containing significant amounts of tryptamines is rainha, or *psychtria virdis*, of the coffee tree family (one of the plant constituents of Daime). One method by which ayahuasca is made is to mash the jagubi vine with a stone, layer the mashed vine with chacuna or rainha leaves in a large cooking pot, add water and boil the mixture until one-half of the water has evaporated (Lamb, 1985). The effects of ayahuasca differs depending on the location of the ceremony, the specific ceremony involved, which plants are used to make the tea, the quantity of tea ingested, and expectations of the participants. In some traditions a restricted diet, cold baths, and abstinence from sexual and other activities are recommended for fifteen days before the ceremony.

Santo Daime

Within the last 100 years, ayahuasca has emerged from its rainforest home and spread into rural and urban populated areas of South and Central America where the beverage is consumed biweekly in syncretic church rituals (Ott, 1996). Practitioners follow strict guidelines in ayahuasca divinatory and healing rituals (Dobkin de Rios, 1972). In Brazil, ayahuasca ceremonies were introduced to urban residents by rubber

tappers, who, during journeys far into the interior of the Amazon rainforest, were introduced to ritual usage of ayahuasca by indigenous populations.

Several Brazilian-based syncretic churches, with influences from Africa, Judeo-Christianity, and Old World spiritual doctrines, currently work with ayahuasca, including the Santo Daime, Uniao do Vegetal, and Barquinha churches. Luna (as cited in Callaway et al., 1999) reported there are approximately 15,000 urban church members in Brazil who regularly attend and consume the sacrament on a biweekly or monthly basis. The Brazilian government, through two of its agencies, the Divisao de Medicamentos do Minesterio da Saude (DIMED) and the Conselho Federal de Entorpecentes (COFEN) investigated psychospiritual and religious usage of Daime in 1987 (Callaway & Grob, 1998). Ayahuasca was legally sanctioned in Brazil for religious purposes as a result of the investigation (Polari de Alverga, 1999).

Historical Perspective of Brazilian Syncretic Churches

Ayahuasca churches have existed in Brazil since early in the 20th century (Ott, 1996). During the 1930s, Brazil supplied a significant portion of the world's rubber needs (Polari de Alverga, 1999). Rubber tappers, such as Raimundo Serra Irineau, searched deep in the Brazilian rainforests for this valuable natural resource. While searching for rubber trees he was introduced to ayahuasca. Irineau had a series of visions in the forest in which a feminine presence he associated with the Virgin Mary appeared and instructed him. The visions instructed him how to organize a church and provided a catechism. Irineau ultimately received a body of 130 hymns, called an *hinario*.

From Irineau's visions the Santo Diame religion has grown to enjoy a substantial, world-wide body of practitioners (Ott, 1996). Initially, Irineau associated with a local religious organization, but after internal political differences arose, he founded his own church: Alto Santo. The Alto Santo Church incorporated Christian principals into its doctrine to avoid persecution by federal authorities for practicing medicine without a license. Irineau began to call the sacrament Santo Daime. The Santo Daime Church has members throughout the South, Central, and North Americas, as well as Europe and Asia, who travel to Brazil or Holland to practice their religion. "Daime" is the name of the psychoactive sacrament, a tea utilized in the religious ceremonies of the Brazilian church by the same name. In Brazil, Daime is consumed in ceremonies during religious holidays, such as Christmas, New Years, and All Saints Day.

1993 Brazilian Ayahuasca Research

Ayahuasca is consumed in shamanic and religious ceremonies because it powerfully alters human consciousness and is believed to provide significant physical, emotional, and spiritual health benefits (Flores & Lewis, 1978). While studies have been conducted with ayahuasca by ethnobotanists, sociologists, and other respected disciplines, relatively few studies have rigorously examined the pharmacological effects of ayahuasca on large population samples (Callaway et al., 1999).

In the early 1950s, Gabriel de Costa returned from ayahuasca ceremonies in Bolivia to found the Brazilian UDV Church (Grob et al., 1996). The church patterned its organizational structure similar to a Christian parish. Membership in the UDV now exceeds 5,000 and includes professionals from the health-care industry. Callaway et al.

(1994) noted the UDV Church wanted to assure long-term legal sanctions for the practice of their religion. Consequently, a team of biomedical researchers from the United States, Europe, and Brazil was invited to study members of the UDV's Manaus church (Grob et al., (1996).

In their 1993 Brazilian research study Grob et al. (1996) reported on 15 long-term users (minimum 10 years duration), members of the syncretic Uniao do Vegetal Church (UDV), who were examined to determine the effects of an ayahuasca sacrament known as *vegetal* when administered in the ceremonial context of that church. Vegetal was administered in measured amounts, blood plasma was drawn at intervals, and correlations were made between psychic effects the participants reported and alkaloid blood plasma levels (Callaway et al., 1999). Psychic peak experiences occurred 60—120 minutes after ingestion of the tea, and corresponded to high concentrations of harmala alkaloids and DMT.

The Callaway et al. (1999) experimental volunteers were matched with a control group of volunteers who had no experience with vegetal. Several standardized and cross-cultural assessments were used to ascertain levels of psychological functioning, pre and post ayahuasca session. The Composite International Diagnostic Interview (CIDI) (Grob et al., 1996) was used to assess possible mental disorders, the Tridimensional Personality Questionnaire (TPQ) (Cloninger, 1987) was used to assess personality, and the WHO-UCLA Auditory Learning Verbal Memory Test (Satz, Chervinsky, & D'Elia, 1993) was utilized to assess neuropsychological functioning. In addition, the experimental volunteers participated in semistructured life story interviews (Grob et al., 1996).

The experimental group reported intricate and colored imagery with closed eyes, heightened awareness, and complex, but clear thought processes (Callaway et al., 1996). Physiologically, blood plasma, growth hormone, prolactin, cortisol, and neuroendocrine levels all increased. Postconsumption, subjects were noted to have dilated pupils and increased respiration, heart rate, blood pressure, and oral temperature levels, all of which returned to normal base levels within 6 hours. Because no signs of physical or psychological deterioration were noted among the research sample, researchers concluded that regular use of the tea is not harmful.

Grob et al. (1996) revealed that some participants in the UDV research had previously been diagnosed with personality disorders and substance abuse. A portion of the experimental group reported behavioral problems prior to drinking ayahuasca. However, none of the experimental sample reported then-current diagnoses of major depressive, phobic, or substance abuse disorders, or any problems with law enforcement.

Personality testing across the control and experimental groups failed to find any significant difference between the two groups (Grob et al., 1996). Neurologically, the experimental group performed somewhat better than the controls in word-recall although the results were not statistically significant. In interviews, many of the experimental sample reported that previous to their initial vegetal experience they had had serious drug, nicotine, or alcohol abuse issues, including violent behaviors associated with binge drinking. Interviewees also reported previous dysfunctional behaviors such as aggression, impulsiveness, compulsiveness, anger, alienation, and opposition to authority. All experimental interviewees attributed the combination of ayahuasca consumption and

participation in UDV rituals as the catalyst for radical impacts to, and profound changes in, their lives and relationships, giving them a deeper sense of meaning.

While Grob et al. (1996) cautioned that the study results were tentative, it was noted that 11 of the experimental subjects with prior chemical dependency and alcohol abuse issues had maintained abstinence from alcohol after entry into the church. Similarly, all preexisting personality disorders were in remission after commencing participation in the UDV. The experimental sample further described significant and positive changes in personal outlook, behaviors and attitudes, and relationships. One limitation to the study's results was the inability to establish a causal connection between reportedly enhanced intellectual performance and ceremonial ayahuasca use, since there was no pre-UDV administration of assessments. However, the study was able to establish that neuropsychological functioning of the research sample was not harmed by long-term consumption of vegetal.

Grob et al. (1996) concluded that regularly drinking ayahuasca in a religious context actually augmented psychological abilities to cope with life processes. Additionally, the experimental sample typically lost the desire for addictive substances such as alcohol, nicotine, and cocaine. While vegetal was proven to be neither physically nor psychologically addictive, Callaway et al. (1994) indicated that temporary physical tolerance to DMT, related to periodic surges in neurotransmitter levels, may develop.

Neurotransmitter Response to Ayahuasca

One purpose of the 1993 UDV study was to determine whether long-term use of the tea resulted in measurable changes in the 5-hydroxytryptamine (5-HT) neuronal

transporter (Callaway et al., 1994). Callaway and Grob (1998) indicated harmala alkaloids block MAOI enzymatic action for several hours and while metabolic degradation of neurotransmitters is inhibited, 5-HT neurotransmitter production continues unabated, which is usually not a problem. However, serious complications including severe tremors and headaches, convulsions, loss of consciousness, and even fatalities have been reported when harmala alkaloids are combined with serotonin reuptake inhibitors (SSRIs) (Neuvonen, Pohjola-Sintonen, Tacke, & Vuori, 1993).

Peterson (1991) also noted that MAOIs and SSRIs are known to interact adversely, which may result in serious complications. SSRIs cause serotonin levels to increase while MAOIs inhibit metabolism of that neurotransmitter, resulting in neurological system overloads and a condition known as “serotonin syndrome.” Symptoms include initial euphoria, followed by nausea, confusion, tremors, and loss of consciousness (Blackwell, 1963). Other symptoms include lack of coordination, restlessness, and hyperactivity (Sternbach, 1991). In some cases fatalities have occurred when medical practitioners prescribed both MAOIs and SSRIs without sufficient attention to serotonin syndrome. As the physical body can take up to 5 weeks to metabolize SSRIs, there may be unintended consequences to people who discontinue using the drugs, but fail to wait long enough for the body to completely metabolize SSRIs before working with ayahuasca (Copland & Gorman, 1993). According to Blackwell (1963), certain foods, such as aged cheddar cheese, which contains yeast, are contraindicated prior to drinking MAOI-containing ayahuasca. He reported that patients complained of hypertensive attacks, headaches, and vomiting when they ate aged cheddar cheese while taking MAO inhibiting drugs.

Callaway et al. (1994) found that 5-HT levels increased to statistically significant levels in the 1993 UDV experimental sample. Ordinarily, 5-HT uptake levels increase in aging humans, resulting in decreased neurotransmitter levels and a consequent decline in brain neuronal activity (Marazziti, Falcone, Rotondo, & Castrogiovanni, 1989). However, the Callaway et al. (1994) Brazilian study revealed no decline in brain functioning, nor any other undesirable neurological or psychiatric condition, even after 10 years of drinking ayahuasca, despite increased 5-HT uptake levels.

CHAPTER 3: METHOD

Introduction

This chapter presents the methods, designs, and instruments used in this study of North American and European male and female participants in syncretic religious ceremonies of the Santo Daime Church. The purpose of this study was to determine whether, after participating in Church rituals, the group exhibited characteristics of DSM-IV Axis I Clinical Disorders, Axis II Personality Disorders, or tendencies toward chemical dependence. The initial research proposal is first discussed, followed by the modified study design, and then a discussion of the research sample participation in Santo Daime ceremonies. Next, the criteria for participation in the study and participant recruitment are discussed. The instruments used in the study to quantify participant characteristics are noted, followed by the data collection protocols and procedures. Finally the data analysis plan is presented along with a summary of the chapter.

Study Design

Initial Blended Research Design

MacDonald, Tsargarakis, and Holland (1994) noted there is considerable debate within the psychological community concerning the validity and value of transpersonal psychology and its modalities. Confirming validity and reliability of transpersonal methods is elusive when comparing transpersonal constructs to conventional scientific methods. To empirically validate transpersonal states of consciousness, MacDonald et al. (1994) recommend both qualitative and quantitative avenues of investigation. Attempting to address those concerns, a “blended” or mixed method research study was initially

designed that incorporated quantitative assessments with qualitative semistructured interviews and thematic content analysis.

Initial Research Proposal Parameters

Under the initial research proposal, two standardized assessments, as well as the Demographic Questionnaires, were sent to the research sample with a request that they be completed and returned to the researcher. The first assessment, the Clinical Analysis Questionnaire (CAQ) (IPAT, 1978), is a personality and clinical instrument. The second assessment, the Expressions of Spirituality Index (ESI) (MacDonald, 2000), is an instrument measuring spiritual traits.

The CAQ was used to determine whether the research sample had statistically significant levels of Axis I or Axis II disorders, or traits indicating chemical dependency, when compared to population norms. The ESI (MacDonald, 2000), was administered to measure the attitudes and tendencies of the research participants towards spirituality in their lives. From the two groups of North Americans and Western Europeans, six members of each group were to be invited to participate in semistructured interviews. Transcripts of the audio-taped interviews would then have been analyzed utilizing thematic-content analysis research methods. Qualitative analysis of the interviews were to have focused on intellectual, emotional, community, physical, and spiritual issues encountered by the coresearchers during and after their participation in Church ceremonies.

Time Limitations Involved in Design Modifications

Once 39 rather than 50 completed assessment packets were returned, a group of 13 participants were randomly selected and invited to participate in semistructured interviews. Interview questions are located in Appendix A. Postinterview, the audio-cassette tapes of the interviews were transcribed by an outside typist who had signed a confidentiality agreement. A blank copy of the Confidentiality and Nondisclosure Agreement is included in Appendix B. The transcripts were reviewed against the interview tapes and corrected. Corrected copies of the interview transcripts were provided to the interviewees, some corrections were noted, and the corrected transcripts returned to the researcher. Corrections were then made to the original transcripts.

However, once all the data was reviewed, another issue arose. Because there was insufficient time to complete the research project as originally envisioned, a decision was made to modify the original research design. Consequently, the focus of the research centered on analysis of the results from the standardized psychological assessment, the CAQ. The results of the ESI are not discussed in this dissertation report. In the event it was necessary to explain anomalies or deviations in the research sample from the norm population, reference was made to other portions of collected data for explanation.

Summary of the Revised Research Design

Statistical data from the CAQ instrument was examined for statistically significant levels of mental or clinical disorders or tendencies towards chemical dependency. The CAQ assessment results were analyzed by comparing the study sample with the norm population. Next, subgroups were created to determine whether gender,

age, frequency of Festival attendance, or average number of ceremonies attended would produce any statistically significant deviations between the research sample subgroups and the measurement of clinical and personality disorders or tendencies toward chemical dependency. Since a significant portion of the sample (19%) reported preexisting clinical diagnoses ranging from depression and anxiety to psychosis, statistical analysis of that subgroup was also performed. Where necessary to explain results, data from the Demographic Questionnaires was used to examine a possible basis for statistically significant scale scores which deviate from the norm population.

Treatment

Description of Festivals and Santo Daime Church

Santo Daime Church membership is internationally based and open to men and women. The Church calendars a series of ceremonies called Festivals twice a year, during the June and December Solstices, for discrete periods of approximately 3 and one-half weeks each. During the Festivals, ceremonies usually occur every second or third day, although ceremonies can also occur without a day's break. The Santo Daime Church also holds ceremonies year-round, to wit; at least twice a month and on specific holy days, some of which coincide with recognized Roman Catholic Church holy days.

Sample Design Criteria

I initially proposed to include two subgroups: 50 North Americans, and 50 Western Europeans. Each sample group would have completed both sets of assessments and both demographic questionnaires. At least 6 members from each sample group were

to be randomly selected and invited to participate in the semistructured interviews. The research was open to men and women, whereas previous research involving the Brazilian Uniao do Vegetal Church (UDV), in 1993 (Grob et al., 1996) was limited to an all-male Brazilian study sample. The UDV is another syncretic church that uses a similar sacrament, called vegetal, in its ceremonies. Each participant of the present research was required to be English-literate, at least 18 years old, and to have participated in syncretic church ceremonies utilizing Santo Daime. Daime is a psychoactive sacrament of the Brazilian church by the same name.

Due to legal and ethical considerations, participants had to have attended Santo Daime ceremonies in locales where possession and use of the sacrament was legal. There are two main venues where such use is legally sanctioned: Brazil and Holland. Each participant was required to have participated in a series of at least six ceremonies, called a "Festival."

Had the research been conducted according to the initial proposal, the two research samples would have been statistically evaluated and compared against each other. The research samples would also have been statistically compared to the norm population. The interview transcripts of the two samples would have been analyzed for thematic content and the transcripts from each sample group compared.

Unfortunately, problems arose rendering the initial research proposal unworkable. Immediately after the research proposal was approved the researcher began to solicit participants. Multiple attempts to contact the Santo Daime Church in Amsterdam, Holland by telephone and email went unanswered. Attempted contacts with the Amsterdam Church through the Santo Daime Church in Brazil were also unsuccessful.

Consequently, the decision was made to limit the size and scope of the research sample to at least 50 participants, mainly from North America.

Research Population

Purpose for Choice of Study Participants

Restriction of the population samples to English-literate North Americans and Western Europeans was chosen for several reasons: a) ease of communication with coparticipants; b) a common cultural background within the research sample would provide more reliable assessment results, allowing me to better determine whether there are statistically significant and measurable outcomes; c) the chosen cultural sample was more likely to discuss their experiences in the interviews; and d) the results of this study may be utilized in current legalization efforts in North America and various countries in Western Europe.

Cultural Bias for Selection of a Western Sample

Assessments developed in North America and Europe are likely relevant only to the measurement of individuals who are acculturated to the Western cultural milieu (Juni, 1995). In his critical analysis of the NEO-PI-R personality assessment, standardized with a middle-class North American population, the author noted that cross-cultural application of even a professionally translated instrument was inappropriate due to the colloquial, culture-bound language of the instrument. Thus, an instrument developed from a North American or Western European cultural perspective lacks the necessary theoretical and cultural contextual understanding to accurately assess individuals with a

nonwestern cultural perspective. Additionally, the personality model on which a Westernized instrument is based may not even apply to a different culture, that is, Brazil or Asia. Velez-Diaz and Gonzalez-Reigosa (1987) reported that the CAQ, when translated into Spanish, had serious grammatical and syntactical errors limiting its usefulness with Spanish-speaking clients. Thus, non-English-literate participants were not seen as likely to have sufficient cultural background to comprehend the syntax and culturally based connotations of the psychological assessment chosen for use in this research study.

Cultural perspective was another factor limiting the population base from which the study sample could be drawn. Quinlan (2001) noted that Amazonian respondents in her research held an interesting cultural perspective. To those respondents, openly discussing spiritual aspects of one's life was inappropriate because it focuses immoderate attention on oneself. From personal experience, I noted North Americans and Western Europeans are more approachable and willing to discuss aspects of their spirituality. In addition, the research was focused on North Americans and Western Europeans, because it is those individuals who must return to live, cope, and survive the daily stresses and demands of Western culture. Unfortunately, other than through the literature review, the voices of native cultures out of which the sacrament was revealed, will not be heard in this research.

Creation of Subgroups

While the original intention was to have two sample groups of 50 participants each (Western European and North American), there were insufficient numbers to have

the intended two groups for comparison and only one group of 52 participants was included in this study. Fifty of the study participants (96%), were residents of North America and 2 of the study participants (4%) resided in Europe. While 6 participants (11%) reported having participated in Festivals in both venues, 46 participants (88%) reported having participated in Festivals exclusively in Brazil. A very small minority of study participants' (n = 2) Santo Daime experience was based in urban settings, such as Rio de Janiero or Manaus, Brazil, rather than the Amazon Rainforest. For purposes of this research, a Festival was defined as a set of at least six ceremonies, within a discrete period of time. Two of the study participants did not attend a "Festival" per se, but did attend the minimum number of Santo Daime ceremonies, over a discrete 3—4 week period of time, to qualify for participation in the research.

Sample Subgroups

After the initial statistical analysis and comparison of the research sample with the norm population, six subgroups were created for analysis of the data. The subgroups were first organized by gender as men were compared with women. Additional subgroups were organized by participant age, number of years of participation in Santo Daime Church ceremonies, number of Festivals attended, and average number of ceremonies attended per Festival. The sixth subgroup was populated by participants with preexisting clinical diagnoses. None of the subgroups were exactly equal in number. Creation-criteria for each of the subgroups were slightly different to allow for numerically consistent subgroup sizing and statistical equivalence. ANOVA was used to assess statistically significant trends or tendencies between the subgroups using analysis of variance and a

probability level of ($p \leq .05$). All computerized statistical analysis was conducted using the SPSS software program (SPSS, 2004).

Solicitation of Participants

Potential participants were solicited in a variety of ways. Two Santo Daime churches in Brazil, Centro Eclectico de Fluente Luz Universal (translates as "Central Eclectic Flowing Universal Light") and Igreja do Culto Eclectico da Fluente Luz Universal (translates as "Church of Eclectic Flowing Light Universal of Raimundo Irineau Serra) agreed to review the study proposal for ethical and participant safety purposes. Both Churches, through their respective Boards of Directors, approved the study (see Appendix B for correspondence to and from the Churches seeking cooperation). With consent of the churches, names and contact information of potential study members were provided by the Churches to the researcher. A few candidates were solicited through personal contact or were referred by other participants. As information about candidates was received, invitations were extended. When the candidate indicated willingness to participate in the research, invitation letters were sent to them and later upon agreement to participate, assessment packets were sent out. Copies of correspondence with candidates and participants are included in Appendix D.

Selection of Participants by Random Sampling

Expecting many responses to the call for participation in the research, the initial research proposal planned to select participants by random sampling. Poplin (1979) indicated that interviews of a representative sample of the community chosen randomly

results in findings that speak for the entire population, because the sample essentially mirrors the community at large. With probability sampling, each person in the population has an equal chance at being selected into the sample (Fowler, 1993). A sampling interval is created by noting the total population size, and a fraction is determined in relation to the total number required for the sample. While this method ensures that each member of the population has an equal chance of being selected, there must be enough candidates to choose from. That was not the situation encountered during the creation of the present research sample, although random selection methods were utilized in the selection of the 13 interviewees.

Once 39 completed assessment packets were received, random selection of the interviewees was conducted. Thirty-nine equal-sized squares of paper were cut and numbered, each piece of paper representing a participant, and the pieces were placed in a bowl and mixed together. Without looking at the squares of paper, 13 of the numbered squares were drawn and the participants whose numbered squares were drawn were interviewed.

Instrument

Friedman and MacDonald (1997) observed that mainstream clinical psychology regularly utilizes standardized assessments in practice. Assessments assist in selecting treatment modalities, establishing prognosis, demonstrating treatment effectiveness, and avoiding malpractice lawsuits. Importantly, standardized assessments can establish the validity and effectiveness of transpersonal therapies because accepted measurements have been shown to validly measure what they purport to measure and they do so with

measures of reliability. Standardized assessments provide accountability in arriving at accurate and unbiased conclusions concerning psychological states and issues. This study sought to measure statistically significant tendencies of the research sample towards Axis I and Axis II clinical and personality disorders or indications of chemical dependence, by comparison against the raw and sten score means of the norm population. For the present research, a standardized assessment, the CAQ, was the most practical and the only objective way to determine possible existence of such traits.

Clinical Analysis Questionnaire

Validity. Criterion-related validity of the CAQ was based on studies of depression, psychosis, and neurotic disorders (Himelstein, 1984). Zaza and Barke (1986) reported the CAQ's scales were factorially validated because factor loadings clustered well independently of each other. The assessment was demonstrated to be true to its hypothesized factor structure (Krug, Cattell, & IPAT, 1997) and moderate concurrent correlations were shown with the MMPI (Zaza & Barke, 1986).

Reliability. Reliability of the CAQ validity scale cannot determine whether the individual is being either consciously or unconsciously evasive, whether the individual understands the questions, or whether the individual is paying attention to the question sufficiently to record an accurate response. The CAQ evaluates responses to several questions and analyzes whether the responses to the assessment questions are consistent. Inconsistent responses do not invalidate the entire assessment; rather the scales' sten scores are adjusted to assure the results are reliable and valid.

Adjustments for reliability and validity are only made to the personality trait scales. Because Second-Order scales are calculated by combining personality and clinical trait scales the results on those scales are reliable without adjustment for reliability or validity (Krug et al., 1997). Reliability was determined with a one-day test-retest interval on 100 undergraduates with coefficients ranging from .51 to .74 on Part I of the assessment and from .67 to .86 on Part II (Himelstein, 1984). The clinical factor scales were found by Zaza and Barke (1986) to have a median coefficient of .80, with an internal consistency of .71, while the personality trait scales had a median alpha coefficient of .60. The median correlation coefficient for all 28 of the measured scales was .73 (Himelstein, 1984). Consequently, the CAQ sten scores, across all scales, are believed to be a reliable calculation within one sten score point of the computation. Second-Order Factor scale sten scores are a reliable assessment of the personality, within one point, 92% of the time.

However, Anastasi (as cited in Himmelstein, 1984) argued that regardless of robust homogeneity and factorial clarity, there have been insufficient empirical studies validating the measurement. Zaza and Barke (1986) also cautioned that despite the CAQ's holistic approach to personality assessment, validity based on inconsistent consensual validation with other assessments tends to defeat the author's intent. They also question the reliability of the validity scale where nearly 20% of the profile is misclassified and possible response formats may allow too much flexibility in responses. Himelstein's review of the CAQ suggested additional empirical studies would assist standardization and recommended the assessment be used for research rather than in clinical practice. Despite its critics, the CAQ was chosen for the present research because

reliability and validity have been demonstrated and the instrument is capable of evaluating the instrument scores for tendencies towards Axis 1 and Axis II disorders and chemical dependency tendencies.

Validity protocols. Krug et al. (1997) noted all psychological instruments are subject to being consciously or unconsciously distorted. The CAQ was constructed with a self-contained validity scale similar to the MMPI to account for distortion by the test-taker. The validity scale consists of questions embedded within the Personality Trait scales of the instrument that are not usually answered in the alternative. When either a faking good or faking bad raw score is of a sufficient magnitude, one or more primary Personality Trait scale sten scores are adjusted up or down. Clinical Factor scale scores are not adjusted.

CAQ format. The Standard Form of the CAQ contains 187 questions on Part A, measuring Personality Traits, and 144 questions on Part B, measuring Clinical Factors (Krug et al., 1997). The Standard Form of the CAQ was used in the present research, as recommended by Krug et al. (1997), for analysis of traits towards chemical dependence. According to Zaza and Barke (1986) the CAQ is a standardized objective assessment inventory designed to provide a comprehensive portrayal of individual personality traits that extends beyond diagnosis to include information about a client's strengths and deficiencies, by contrasting functional and dysfunctional traits.

The CAQ measures normal personality traits previously evaluated by the Sixteen Personality Factor Questionnaire (Himelstein, 1984) and includes normal and

pathological personality scales (Krug et al., 1997). Himelstein (1984) reported the CAQ is a single instrument measuring pathological traits, including seven expressions of depression, plus paranoia, schizophrenia, psychopathic deviation, and a self-contained validity scale. Krug et al. (1997) noted that chemical dependence scales for alcohol, narcotic abuse, and narcotic addiction are also included in the instrument. Assessment norms are provided for men and women in several categories, including college students, normal adults, and clinical clients, while prison convicts have a norm table for men only. The CAQ has both a short and long form, is intended for people ages 16 and up who have achieved a 6.7 grade reading level. Krug et al. recommended the long (standard) form be used for ease of machine scoring and generation of reports.

Data Collection Procedures

Selection of Participants

Once a potential candidate for participation in the research was known, the candidate was contacted either in person, by telephone or email. During the initial contact the research was explained in summary form. If further interest was expressed, the research candidate was informed he or she would receive an explanatory letter with more detail. Three-hundred-sixty-three research candidates were contacted. From the initial 363 contacts, 128 interested research candidates, or 35%, agreed to consider participation in the research. The interested research candidates received a consent form (Appendix E) as part of the introductory letter (Appendix D), and copies of approval correspondence to and from the respective Board of Directors of the Brazilian Santo Daime Churches

(Appendix C). Nearly 63% or 80 people of the interested research candidates returned signed consent forms (Appendix E).

As soon as each research candidate returned a signed consent form (Appendix E), assessment packets were sent out. The assessment packets contained additional correspondence thanking the research candidate for being willing to participate in the study (Appendix D). The assessment packets also contained a Demographic Questionnaire (Appendix F), later augmented with a Supplemental Demographic Questionnaire (Appendix G). As information in the returned Demographic Questionnaires began to be collated a variety of noncharacteristic responses were noted. I recognized a portion of the Demographic Questionnaire needed to be modified to better evaluate the research participants' true experience. As a result, the troublesome portion of the Demographic Questionnaire was modified and sent out to the participants who had not previously responded (Appendix H). Five participants were subsequently contacted by telephone to clarify their noncharacteristic responses.

In addition to the Demographic Questionnaires (Appendixes F and G), the assessment packets also contained two standardized assessments: the CAQ and ESI (MacDonald, 2000). Of the 80 assessment packets sent out, 51 complete assessment packets were returned, for a response rate of 64%. One participant's packet was returned without the Supplemental Demographic Questionnaire (Appendix G), but the balance of the assessment packet was completed. That participant's CAQ assessment scores were used in the study. Two additional, partially completed packets were returned, but none of the information in the incomplete packets was used in statistical analysis of the research

sample. The response rate for usable assessment packets was 65% and the response rate for complete and partially complete packets together was 68%.

Pilot Study

During the data collection process, a pilot study was conducted involving five nonrecorded interviews with nonparticipants. The interview questions were constructed through review of the existing literature, and with careful consideration of the research topic. The interview questions were redesigned several times during the pilot interviews. Feedback on interview style, questions, and technique was solicited from all pilot study participants. It also was recognized throughout the proposal and pilot study phase that the initial research design could evolve, which ultimately occurred.

How Data Was Collected

Data was collected through a variety of sources: the Demographic Questionnaire Appendix F), the Supplemental Demographic Questionnaire (Appendix G), the assessment scores, and participant interviews. During the research process I kept a journal that allowed me to track personal issues, provided greater personal clarity and insight into the research topic, and helped me maintain focus on the research topic. Journal entries include poignant recollections and reflections on the dissertation process, the research issues, and personal experiences in the Amazon Basin. Limited material from the journal is included in this dissertation.

Efforts to Reduce Nonresponse Rates

Fowler (1993) suggested higher response rates are accomplished when the respondent's task is clear and responding is easy. To that end, questions and concerns voiced by the research candidates were timely addressed in person or by telephone. Follow-up telephone calls and correspondence were sent when assessment packets were not returned. To encourage return of the materials, outgoing correspondence included postage-paid return envelopes with identifying numbers on the return address area, so confidentiality of the respondents was maintained. Using numbers assisted in keeping track of which participants had responded. Respondents were informed, in advance, of the purpose for the number on the return envelopes and information-seeking documents, as the return address did not have their name or return address on it. Respondents were also discouraged from placing personally identifying information either on the return materials or envelopes, in order to assure the highest degree of confidentiality.

How Unused Data Will Be Treated

While an over-abundance of data was collected, not all of the data was used to complete this study because of time and size limitations. The additional data collected but not used will not be destroyed. I intend to continue analysis of the additional, unused data at a later time. Data not used in the modified project will be stored in a locked storage facility and access will be unavailable to any third parties. Any reference to participant identity or specific individuals in the United States has already been deleted from the collected data. Prior to publication of this dissertation any electronic and hard copy documents that might identify specific individual participants were destroyed. Upon my

death, all remaining data will be destroyed or donated to the Multidisciplinary Association for Psychedelic Studies, Inc., Sarasota, Florida.

Data Analysis

Analysis of Collected Qualitative Data

Qualitative data from the interview transcripts and responses to the Demographic and Supplemental Demographic Questionnaires (Appendixes F & G) was not analyzed in this study. However, in some instances, qualitative data was utilized to explain specific results, discuss the population, or draw conclusions from statistical analysis of the assessment scores. Limited uses of qualitative data were made in discussions concerning deviations from norm population mean scores.

Scoring of the CAQ Assessment

The CAQ assessments were administered one time only. Upon return of the answer sheet, the answer sheets were inspected to assure the participant's responses were accurately scored. In instances of multiple responses to the same assessment question and where one of the responses had been crossed out, the crossed out response was erased or covered up to eliminate the possibility of using a crossed out response in scoring. Corrections to the assessment sheets assured that no incorrect answer would be recorded. Corrections were made to 17 answer sheets. The assessment answer sheets were then hand-scored by the researcher.

To perform hand-scoring, the Key for Answer Sheet (IPAT, 1970) was used to score Part 1 and the CAQ Scoring Key Part 2 (IPAT, 1972) was used to score Part 2 of

the CAQ. Instructions for hand-scoring the assessment were provided on the scoring templates. The initial raw scores were reviewed for validity, using the IPAT Key for Validity Scales (IPAT, 1979). Eighteen of the research sample's assessments scores were adjusted for validity. Raw scores from each answer sheet were entered onto page two of a CAQ Standard Form Individual Record Folder (IPAT, 1980) in the raw score column. One Folder was used for each test-taker. Using Table 2.1 (pg. 8) for the sample women and Table 2.2 (pg. 9) for the sample men, the raw scores were converted to sten scores (Krug et al., 1997). Sten (*s*tandard-*ten)* scores are a normative scoring process the CAQ uses to standardize evaluation of trait scores. The mean of sten scores is 5.5 in the reference population, the standard deviation is 2, and the range is between 1 and 10. The sten scores were then adjusted for validity, following the instructions on the scoring templates. Adjusted sten scores were entered into the sten score column, also on page two, of the scoring Folder (Appendix I). Written consent from IPAT for the use of the Folder is attached in Appendix J.

The trait and factor sten scores were next placed in boxes on the appropriate column on either page three or four of the Folder (IPAT, 1980). The use of either page three or four is based on gender; page three for men and page four for women. Each page is divided into columns, one for the sten scores and two columns for each Second-Order Factor. Following the instructions on the Folder (IPAT, 1980), the sten scores were multiplied by circled numbers in the various columns. The numerical values were entered into boxes in the Second-Order columns. Finally, the numerical values in the boxes of the Second-Order columns from each pair of columns were then formula-adjusted at the bottom of the page and converted into sten scores for each of the Second-Order Factors.

Second-Order Factor scores were then calculated by factor analysis of the primary clinical factor and personality trait scale scores. Krug et al. (1997) noted the Second-Order Factor scores do not provide new information about the test-taker; rather the primary scores are organized into patterns to allow for enhanced interpretation of the primary trait and factor scales data. The entire hand-scoring process, from initial scoring of each assessment through computation of the Second-Order Factor sten scores, took approximately 50 minutes for each assessment scored. This was far in excess of the publisher's estimate for hand-scoring: 10 minutes.

Use of Computer Software Programs

Two computer programs were used in the statistical analysis of the assessment scores: Excel (Microsoft, 2001) and SPSS Graduate Pack 13.0 for Windows (SPSS, 2004), a statistical analysis program. Using the Excel computer program, a spreadsheet was created using the study participant's demographic information, in order to create the sample subgroups. Additional spreadsheets were created for the Personality Traits, Clinical Factors and Second-Order Factor scale scores. Raw and sten mean scores for each of the trait and factor scales were entered into rows and columns of those spreadsheets. The raw and sten mean scores for each participant were placed into separate columns and boxes in rows. A row of each spreadsheet was used for one test-taker only. Data was then imported from the Excel spreadsheets into the SPSS program.

Statistical Analysis of the Assessments

Participants reported in the Demographic Questionnaire (Appendix F) their gender, age, number of years of involvement in the Santo Daime Church, number of Festivals attended, and average number of ceremonies per Festival they had attended. Initially, the research sample was statistically compared against the norm population on the Personality Trait and Clinical Factor scales. Combined-gender analysis and comparison of the sample to the norm population utilized Table A.1 (pg. 68) for the Clinical Factors and Table A.16 (pg. 82) for the Personality Traits (S. Bedwell, personal communication, July 18, 2005) of Norms For General Population, Males + Females (Krug et al., 1997). Same-gender analysis and sample comparison to the norm population utilized Table 2.1 (pg. 8) Norms For Normal Adult Females and Table 2.2 (pg. 9) Norms For Normal Adult Males (S. Bedwell, personal communication, July 4, 2005) (Krug et al., 1997). There are no norm population tables for the Second-Order Factor scales in the Manual (Krug et al., 1997). However, the Manual contains intercorrelations and validity coefficients, with sufficient information to allow interpretation of the Second-Order Factor scale sten scores. In order to analyze tendencies of the research sample toward chemical dependence, several Personality Trait and Clinical Factor scales mean raw and sten scores of the research sample and norm populations were compared. Subgroups were organized for men and women and their assessment scores were separately analyzed on three CAQ scales to evaluate tendencies towards chemical dependence. Since only research sample women had previous prescriptions for psychotropic medications, that subset was statistically compared using Table 2.1 (pg. 8) of the Manual.

Statistical analysis of the CAQ assessment initially compared the Personality Trait and Clinical Factor scales score means of the norm population against the research sample's scales score means using a one sample *t* test with a ($p \leq .05$) level of significance. Any deviations or significant trends between the groups or subgroups and any statistically significant differences between the means of either the raw or sten scores of the norm population and research sample on the Personality Traits, Clinical Factors, and chemical dependence scales were evaluated and are discussed in Chapter 4: Results. Comments were made when the research sample's mean scores deviated in a statistically significant manner from the scale's mean scores of the norm population.

Subgroups of research sample men and women were compared in gender-based analysis. Other subgroups also were created for statistical analysis. Age-based comparisons were made by combining scores of men who were 49 and younger with scores of women who were 50 and younger and then comparing that group with scores of men who were 50 or older and scores of women who were 52 and older. Participation-based comparison was made by combining scores of men who had been involved in the Church 5 or fewer years with scores of women who had been involved in the Church 6 or fewer years and then comparing scores of that group with scores of men who had been involved in the Church 6 or more years and scores of women who had been involved in the Church 7 or more years. An additional comparison was made with subgroups created based on the number of Festivals attended. Scores of men and women participants who had attended two or less Festivals were compared with scores of men and women participants who had attended three or more Festivals. The fourth subgroup comparison was made by combining scores of men who had attended an average of ten or more

ceremonies and scores of women who had an average of eight or more ceremonies per Festival and comparing that group with scores of men who had attended an average of nine or fewer ceremonies and scores of women who had an average of seven or fewer ceremonies per Festival.

Limitations and Delimitations of the Research

Delimitations

Delimitations to this study involve the use of only those participants willing to complete the CAQ assessment after having participated in Santo Daime Festivals in Brazil or Holland. An additional delimitation is the requirement all study participants be native English speakers. Festival participants from other countries might have quite different perceptions and attitudes based on cultural perspective. Those individuals might well have answered the instrument differently, or refused altogether to participate in the research.

Limitations

Sample size may be a limitation, as there were only a small number of candidates willing to participate in the project. There also could be a tendency for participants to present themselves in the most favorable light, and this human characteristic may have affected how respondents completed the assessment used in this study. The time needed to complete the assessments and questionnaires for this study also may have affected how participants completed each of the assessments. The assessments took 1.5—2.5 hours to

complete. The time required to complete the questionnaires was dependent on several factors, including the completeness of response by the coresearchers.

There also may be measurement limitations regarding how respondents read and understood the content of each individual item and responded to each item. A significant portion of the sample had preexisting conditions that may have affected the results. There was no Santo Daime control or comparison group used in this study. However, the norm population served as the control group. Being unable to randomly select participants may limit the results of the study. The major limitation with this research is determining whether the results, obtained by statistical analysis, were actually based upon participation in religious ceremonies of the Santo Daime Church in Brazil or Holland. Potential participants may have had concerns regarding the legal status of Daime in the United States and fearing legal prosecution, decided not to participate out of fear.

Summary

This Chapter presents the research as initially intended and the modifications to the original proposal. The Santo Daime Church and Festivals, together with selection criteria and procedures utilized in selection of the research sample are also discussed. The data collection and analysis process is examined, as well as the standardized psychological assessment used to evaluate the research sample. Chapter 4: Results, discusses the obtained outcome.

CHAPTER 4: RESULTS

Introduction

This chapter presents the findings of this study on the effects of participating in religious ceremonies involving the use of Daime, a tea with psychoactive properties. The participants in the study are presented along with the response rate. Each research question is addressed comparing the research sample to a norm population, and comparisons within the study sample are made and discussed. The sample and norm mean raw and sten scores are rounded to the nearest .10 and standard deviations are rounded to the nearest .001. Finally, a summary of the chapter is presented.

Study Participants

Age Demographics

Fifty-two participants, 27 men (52 %) and 25 women (48 %), comprise the research sample. Participant ages ranged from 25 to 65 years of age. The mean age for men was 50 years and for study women, the mean age was 51 years. The mode for men was 50 with 5 participants at that age and for the women the mode was also 50 years of age. Table 1 presents age demographics for sample men and women.

Relationship Demographics

Twenty-six men, (96%) reported being heterosexual and one man (3%) reported being gay. Of the 25 women, 24 (96%) reported being heterosexual while one woman reported being a lesbian. While 13 of the men (48%) were single, only 5 of the women (20%) reported they were single. Of the total research sample, 23 participants (45%)

reported they were either cohabitating or married, although not necessarily to other research participants. Ten participants (19%) were either separated or single. Table 2 presents relationship data for men and women.

Educational Demographics

The majority of men in the study held either a Bachelors or Masters Degree (63%). Twenty women (80%) held a Bachelors or Masters degree. Three members (6%) of the research sample held doctorates and two were professionally licensed. Table 3 presents employment data for men and women.

Employment Demographics

The majority of men participating in this study reported being employed full or part-time (56%) or self employed (30%). Slightly more of the women reported being self-employed (36%) and slightly less (52%) were employed either full or part time. Of the 52 participants in this study, only three reported being unemployed at the time of the study. Table 4 presents employment data for men and women.

Occupational Demographics

Thirteen women (52%) were involved in the health care profession, identified as massage therapists, nurses, or doctors, while only six (22%) of the study men were employed in those professions. White-collar workers comprised 29% of the study sample (n = 15). Artists and teachers made up the next largest population percentage (n = 12, 23%). Table 5 presents employment data for men and women.

Table 1

Age Demographics by Gender

Demographic	Men	Women	Total
Sample Size	*n* = 27	*n* = 25	*N* = 52
M Age	50.48	50.96	50.71
SD	.51	1.02	.82
Mode	50	50	50
Mdn	49	50	50
Age Range	27—64	25—65	25—65

Table 2

Relationship Demographics by Gender

Relationship	Men	Women	Total
Single	13	5	18
Cohabiting	3	1	4
Married	8	11	19
Separated	1	0	1
Divorced	2	7	9
Widowed	0	1	1

Table 3

Education Demographics by Gender

Highest Achieved	Men	Women	Total
High School	1	0	1
Some College	8	3	11
BA/BS	9	15	24
MA/MS	8	5	13
Doctoral Degree	1	2	3
Professional License	1	1	2

Table 4

Employment Demographics by Gender

Employment	Men	Women	Total
Full Time	11	8	19
Part Time	5	5	10
Self-employed	8	9	17
Unemployed	2	1	3
Homemaker	1	1	2
Retired	0	1	1

Table 5

Occupational Demographics by Gender

Occupation	Men	Women	Total
Blue Collar	3	0	3
Health Care	6	13	19
Teaching	4	2	6
Art	2	4	6
White Collar	10	5	15
I/T	1	1	2
No Response	1	0	1

Clinical Analysis Questionnaire Assessment Results

Trait Scale Scoring

The CAQ measures 16 personality traits and 12 clinical factors (Krug et al., 1997). The primary trait scales measure normal to pathological levels of personality structure, and present a multidimensional portrait of the individual. Second-Order Factors are obtained by factor analysis of the primary traits. Second-Order Factors organize assessment information and provide a more complete picture of health or pathology. High sten scores, in the range of 8—10, place the individual in the upper 18% with respect to the norm population. Low sten scores, in the range of 1—3, also represent departures from the norm, and place the research group in the lower 18% in reference to the norm

population. Appendix K1 describes the raw score *t* test statistical analysis, and Appendix K2 describes the sten score *t* test statistical analysis for the primary Personality Trait and Clinical Factor scales. Those Tables compare the norm population scale scores to the research sample.

Normative, or sten scores, are utilized to standardize the CAQ raw trait and factor scale scores (Krug et al., 1997). Sten scores are less sensitive to differences in and between groups than raw scores because they tend to "wash out" the extreme raw scores. Sten scores only range from 1—10 but fully represent the raw data. In the norm population sten scores have a mean of 5.5 on all scales, and have a *SD* of 2. The personality trait scales raw scores range from 1—16 and the clinical factor scale raw scores range from 1—24, whereas sten scores have a range of only 1—10. Because sten scores have a consistent range of 1—10 they allow for dependable comparison and analysis of the trait and factor scales and calculation of Second-Order Factor scores. As individual trait, factor, and Second-Order scale scores increase or decrease incrementally from the mean, the trait described by the individual scale would be expected to become more pronounced.

Eighteen assessments were adjusted for validity during hand-scoring. Six assessments were adjusted for faking bad and twelve assessments were adjusted for faking good. One scale was adjusted on each of the six faking bad assessments. For faking good assessments, two scales were adjusted on seven assessments, seven scales were adjusted on one assessment, eight scales were adjusted on three assessments and nine scales were adjusted on one assessment. Sten scores were adjusted for validity where necessary before they were converted by factor analysis into Second-Order Factor trait

scale scores. Since the CAQ has internal controls for reliability and validity, the results discussed in this research are not likely to be skewed in any particular direction.

The CAQ Manual provides conversion tables, converting raw scores of the norm population into whole sten score values. Using the Manual's tables, the individual raw scores of the sample were converted to sten scores. If necessary, adjustment was made for validity. The raw scores and sten scores of the norm population and study sample were statistically analyzed and compared. The research group sten scores means were rounded to the nearest .1 and the sten score to the nearest .01. In this research, raw scale scores means were found to have statistically significant variances between the norm population and research sample on two Personality Trait scales and one Clinical Factor scale. Deviations in the raw scores means were in addition to variances revealed solely by sten score analysis. Since sten scores tend to filter differences otherwise revealed by raw scores, this research also examined the raw scores for statistical significance.

On ten Personality Trait scales the calculated raw score means of the study sample demonstrated statistically significant variances from the norm population. There was no statistically significant variance between the sample and norm on six Personality Trait scales: these included Emotional Stability (C), Impulsivity (F), Boldness (H), Suspiciousness (L), Insecurity (O), and Radicalism (Q1). The study sample also had statistically significant variances on the calculated raw score means from the norm population on seven of the Clinical Factor scales. There was no statistically significant variance on five Clinical Factor scales; these included Hypochondrias (D1), Agitation (D3), Paranoia (Pa), Psychopathic Deviation (Pp), and Schizophrenia (Sc) (Appendix K1).

On 12 Personality Trait scales the calculated sten score means of the study sample demonstrated statistically significant variances from the norm population. There was no statistically significant variance on only four Personality Trait scales: these included Boldness (H), Suspiciousness (L), Insecurity (O), and Tension (Q4). The study sample also had statistically significant variances on the calculated sten scores means from the norm population on six of the Clinical Factor scales. There was no statistically significant variance on six Clinical Factor scales: these included Agitation (D3), Anxious Depression (D4), Boredom and Withdrawal (D7), Paranoia (Pa), Psychopathic Deviation (Pp), and Schizophrenia (Sc) (Appendix K2).

The study means and norm standard deviations are shown in Appendix K2. The norm population means for raw and sten scores are 5.5. Raw scores, in addition to sten scores, were utilized to contrast, compare, and discuss the norm and study samples. Raw score means and sten score means and standard deviations of the raw and sten scores were analyzed for comparison of the norm population with the study sample. Use of raw scores allowed for more sensitivity when the results were examined and comparisons made between norm and study samples.

A one sample *t* test (two-tailed) was used for initial comparisons of the research sample to the norm population on the primary Personality Traits and Clinical Factor trait scales. The same statistical analysis was used to examine nine of the twelve Clinical Factor scales of the CAQ for tendencies towards chemical dependency. Finally, ANOVA statistical testing was used to analyze the assessment scores of subgroups of the research sample, to determine whether there was a significant deviation between the research

sample subgroups, based on age, years of involvement in the Church, average number of ceremonies attended, and number of Festivals attended.

Personality Traits

Warmth (A). A person scoring high on this scale is usually personable and out-going (Krug et al., 1997). High scorers usually succeed in occupations requiring interpersonal contact such as counselors, salespersons and teachers (McClain, 1968). Individuals with higher scores in this trait indicate willingness to adapt their schedules to others and are more likely to share their feeling with others (Krug et al., 1997). The lowest scoring individuals on this scale were a group of Antarctic explorers (Taylor, 1969). Low scores on this scale would indicate individuals with a history of unsatisfying interpersonal relationships (Karson & O'Dell, 1976). An extremely low score may indicate a pathological dislike of others while an extremely high score can sometimes suggest an unhealthy need for the approval of others (Krug et al., 1997). The raw score mean for the norm population was 10.8 (SD = 3.25) and the study sample raw score mean was 7.4 (SD = 2.37). The difference between the raw score mean of the norm population and that of the research sample, -3.4, was statistically significant (t (51) = -10.242, p = .001). The sten score for the norm group was 5.5 and the sten score for the research sample was 3.4 (SD = 1.37) (Krug et al., 1997). The difference between the sten score mean of the norm group and that of the research sample also was statistically significant (t (51) = -11.216, p = .001)**,** indicating a reserved, detached, and aloof study sample (IPAT, 1980).

Intelligence (B). While the CAQ is not an intelligence test per se, this particular scale is intended to be a measure of general ability (Krug et al., 1997). Low sten scores of 1—3 on this scale would tend to indicate an individual with less than average general ability, while a sten score of 8 or more would indicate individuals with higher than average general ability. When a capable individual's score is unexpectedly low in this scale, it may indicate a lack of attention to the assessment questions. Clinically, among depressed patients or those experiencing severe anxiety, a low score may indicate a deficiency in the ability to focus or pay attention to present tasks. The raw score mean for the norm population was 7.0 (*SD* = 2.17) and the study sample mean score was 9.7 (*SD* = 1.75), for a net difference of 2.7. The highest raw score value on this scale from the norm population is 8 (Krug et al., 1997). The mean sten score mean for the norm is 5.5 and the sten score mean for the research sample is 7.6 (*SD* = 1.72). The difference between the raw score mean of the norm group and the raw score mean of the research sample was statistically significant (t (51) = 10.898, p =.001). The difference between the sten score mean of the norm group and sten score mean of the research sample also was statistically significant (t (51) = 8.799, p = .001). The research group is well above average in general abilities, and has a well-developed ability to utilize abstract concepts (IPAT, 1980).

Emotional Stability (C). This scale is an indication of the ability to tolerate stress and to remain undistracted while working to reach personal goals. It also indicates the level of personal satisfaction a person experiences with life as lived (Krug et al., 1997). Lower scores indicate higher levels of individual anxiety. Administrators score above

average while airline pilots are one of the highest scoring groups on this scale, reflecting little or no anxiety. Several groups: the chronically unemployed, accident-prone individuals, and individuals with medical conditions such as coronary problems, generally score low on this scale (Sherman & Krug, 1977). Sherman and Krug (1977) reported this trait is the highest medical risk element of the personality traits. Low scores on this scale indicate an individual who is overwhelmed by life's challenges (Krug et al., 1997).

The raw score mean for the norm population was 16.1 (*SD* = 4.07) while the research sample mean score was 15.4 (*SD* = 3.80), for a net difference of -.7. The difference between the raw score mean of the norm group and that of the research sample is not statistically significant (t (51) = -1.227, p = .225). The highest raw score value on this scale for the norm population is 16 (Krug et al., 1997). The sten score for the norm group is 5.5 and the sten score for the research sample is 5.3 (*SD* = 1.65) and a statistically significant variance is present (t (51) = 0.906, p = .001) (Krug et al., 1997). The research sample's scale score indicates the sample population is less anxious than the norm and *more able to tolerate stress, remain focused on life goals, and likely to experience more satisfaction with life* (IPAT, 1980).

Dominance (E). High scores on this scale indicate more self-assertive, aggressive and competitive behaviors (Krug et al., 1997). Athletes and judges tend to score above average, whereas janitors and cooks tend to score lower on this scale. In marital relationships, when both partners score high on this scale, discord in the relationship is more frequently reported. Karson and O'Dell (1976), reported the scale score is related to

the ability to externalize hostile feelings. Individuals with higher scores on the Dominance (E) scales are better able to vent anger, while low scoring persons may closet their feelings, only to explode violently, with the smallest of provocations: a typical indication of the passive-aggressive pattern.

The mean of the raw scores for the norm population was 12.1 (*SD* = 4.03), while participants in this study had a mean raw score of 13.4 (*SD* = 4.35), for a net difference of 1.3. The difference between the raw score mean of the norm group and that of the research sample was statistically significant (t (51) = 2.132, p = .038). The sten score for the norm group is 5.5 and the sten score for the research sample is 6.1 (*SD* = 1.94): a statistically significant variance in sten scores as well (t (51) = 2.358, p = .022) (Krug et al., 1997). The research sample sten and raw scores indicate they are more dominant, assertive, and competitive than the norm (IPAT, 1980).

Impulsivity (F). This scale is an indication of extraversion (Krug et al., 1997). High scoring individuals are lively, gregarious, and enthusiastic. Both flight attendants and sales people score significantly above average, while research physicists score significantly below average on this scale (Cattell, Eber, & Tatsouka, 1970). Positive relationships are reported with scale scores and the frequency of residence changes and leaving home early, as well as needs for exhibition and change. Karson and O'Dell (1976), indicated an above average score on this scale points to an individual who "acts out" internal conflicts, while a below average score reveals an individual who internalizes conflict.

The raw score mean for the norm population was 13.9 (*SD* = 4.25) while the research sample raw score mean was 14.4 (*SD* = 3.19), for a net difference of .5. The highest raw score the assessment measures on this scale is 16 (Krug et al., 1997). The difference between the raw score means of the norm group compared to that of the research sample was not statistically significant (*t* (51) = 1.100, *p* =.276). The sten score for the research sample is 6.1 (*SD* = 1.58), presenting a statistically significant divergence from the norm (*t* (51) = 2.550, *p* = .014) (Krug et al., 1997). The research sample sten score points toward a population slightly more pleased with how they have lived their lives, and more lively and gregarious than the norm (IPAT, 1980).

Conformity (G). This scale measures persistence, respect for authority, and conformity to group standards, although not necessarily conformity with general societal standards (Krug et al., 1997). High scoring individuals reported preferring tidiness, following rules, and being able to anticipate problem issues. Suhr (1953) reported a negative correlation between accident proneness and scoring on this trait. Occupationally, university professors score lower while air traffic controllers and military cadets tend to score significantly above average on this trait (Karson & O'Dell, 1976). Low scores may indicate sociopathic tendencies whereas high scores may point to individuals with tendencies to set unrealistic expectations that are somewhat inflexible, and to experience a reduced ability to cope with stress (Krug et al., 1997).

The raw score mean for the norm population on this scale was 13.1 (*SD* = 3.39) while the research sample raw score mean was 11.1 (*SD* = 3.54), for a net difference of 2. The difference between the raw score mean of the norm group and that of the research

sample was statistically significant (t (51) = 4.003, p = .001). The sten score mean for the research sample of 4.4 (SD = 1.86) presents a statistically significant variance from the norm (t (51) = -4.172, p = .001) (Krug et al., 1997). Not surprisingly, the research sample's raw and sten score means reveal a group tending to disregard set rules and traditions, more so than the norm (IPAT, 1980).

Boldness (H). Individuals who score high on the Boldness (H) Personality Trait scale tend to be bold, energetic, insightful, and adventurous (Karson & O'Dell, 1976). Sales people who are successful score above average on this scale, while competitive athletes score significantly above average on the Boldness (H) scale. Self-reports of high scoring individuals indicate enjoyment of the game is more important than winning. An individual with a low score could be expected to suffer from a physical condition such as ulcers (Sherman & Krug, 1977). There also appears to be a connection between scores on this scale and autonomic nervous system activity (Meeland, 1953). Meeland (1953) study found high scores indicated parasympathetic dominance and low scores indicated sympathetic dominance. A high-scoring individual would be expected to easily withstand external pressures (Krug et al., 1997). Conversely, a low-scoring individual would tend to expend considerably more energy handling stressful situations. The low scoring individual could also be expected to become psychologically fatigued with constant exposure to stress and threats.

The raw score mean for the Boldness (H) scale within the norm population was 13.9 (SD = 5.50), whereas the research sample mean score was 13.9 (SD = 5.26). The difference between the raw score mean of the norm group and that of the research sample

was not statistically significant (t (51) = .100, p = .921). The norm population sten score is 5.5 and the research sample's sten score also is 5.5 (SD = 1.94) (Krug et al., 1997). The difference between the sten score mean of the norm group and that of the research sample are not statistically significant (t (51) = .072, p = .943).

Sensitivity (I). Self-reports by individuals scoring high on this personality scale trait indicate they prefer reason over force in accomplishing their objectives (Krug et al., 1997). An educational preference for English over Math also was noted. Some trait descriptions for high-scorers include tender-mindedness, insecurity, dependence, and overprotected. Positive correlations have also been noted between high scores on this trait and automobile accidents, hypertension, coronary heart disease, and chronic illness. While employment counselors tend to score above the mean, engineering groups generally score below average on this trait.

The raw score mean for the norm population was 11.2 (SD = 4.05) while the research sample raw score mean was 14.5 (SD = 2.68), for a net difference of 3.3. The high raw score range for this personality trait is 16 (Krug et al., 1997). The norm population sten score is 5.5 while the research sample sten score mean is 7.5 (SD = 1.69) (Krug et al., 1997). The difference between the raw score mean of the norm group and the raw score mean of the research sample is statistically significant (t (51) = 8.977, p = .001). The sten score means variances between the norm and sample are statistically significant (t (51) = 8.636, p = .001). The statistical significance highlights a sensitive and perceptive sample (IPAT, 1980).

Suspiciousness (L). Suspiciousness (L) is a normal personality trait within limits, however, in high score ranges this trait scale indicates individuals who are jealous, critical, irritable, and dogmatic (Krug et al., 1997). A high scoring individual could be anticipated to have experienced demanding, strict parenting as children and to find it difficult to forget mistakes. Low scoring individuals would likely have better people-skills, such as school counselors, while an accountant would tend to score significantly above the mean on this trait. High scores on this scale are also consistent with higher illness rates, and coronary heart disease in particular (Sherman & Krug, 1977). In one study of patients with functional low-back pain, there was a positive correlation between scores on this trait and visits to medical clinics (Calsyn, 1979). Karson and O'Dell (1976) insist low scores are an indicator of a healthy personality.

The 6.7 (*SD* = 3.13) raw score mean of the research sample, contrasts with the norm population raw score mean of 6.8 (*SD* = 3.42), for a net difference of -.1. The research sample's sten score mean is 5.6 (*SD* = 2.01) and the norm mean sten score is 5.5 (Krug et al., 1997). The difference between the raw score mean of the norm group and that of the research sample was not statistically significant (t (51) = -.292, p =.771) nor was there a statistically significant sten score mean variance between that of the research sample and that of the norm group (t (51) = 0.276, p = .784).

Imagination (M). Individuals who score higher than the mean on this trait are often found to be unconventional, express a lack of concern about common, everyday matters, and forget things that are insignificant (Krug et al., 1997). Mechanics usually score significantly below the mean whereas artists and research groups tend to score

significantly above the mean, on this trait. High scoring individuals have been found to receive fewer job promotions, while changing jobs more frequently (Barton & Cattell, 1972). Higher levels of creativity and increased rates of automobile accidents have been associated with higher than average scores on this scale trait (Krug et al., 1997).

The norm population's raw score mean was 13.1 (*SD* = 3.79). A raw score mean of 14.7 (*SD* = 2.80) was indicated with the research sample. The difference between the raw score mean of the norm group and that of the research sample was statistically significant between the two groups (t (51) = 4.146, p = .001). The highest raw score for this trait is 16 (Krug et al., 1997). The sten score for the research sample is an above average 6.6 (*SD* = 1.42), demonstrating a statistically significant difference between the norm group and research sample sten score mean (t (51) = 5.473, p = .001). The statistical variances reveal a more imaginative sample than the norm (IPAT, 1980).

Shrewdness (N). This personality scale trait is an indicator of the level of behavior control and socialization the individual experiences (Krug & Laughlin, 1977). High scoring individuals do not easily reveal problems to others, and self-report that they prefer to be around sophisticated people (Krug et al., 1997). An extremely high score may also reveal a person incapable of responding to the emotional needs of important persons in their lives. Low scoring persons appear to be less constrained by standards, and more straightforward in how they conduct their lives.

The raw score mean of the norm population was 9.8 (*SD* = 2.94), while the research sample had a lower raw score mean of 7.6 (*SD* = 2.75) for a net difference of

-2.20. The difference between the raw score mean of the norm group and that of the research sample was statistically significant (t (51) = -5.768, p = .001). The sten score mean of 4.0 (SD = 1.74) for the research sample is a statistically significant variance difference from the norm (t (51) = -6.225, p = .001). The statistical variances indicate a sample with less complicated lives and who are, as might be expected, less constrained by societal convention (IPAT, 1980).

Insecurity (O). Scores which are higher than the mean in this trait scale may indicate a variety of clinical disorders (Krug et al., 1997). High scoring individuals are inclined to depression, worry, guilt, and moodiness. A high score also indicates individuals who are anxious, fearful, easily brought to tears, apprehensive, and experience loneliness. On the other hand, an extremely low score on the Insecurity (O) trait scale could be an indicator of limited superego controls: an individual unbound by societal conventions and standards (Karson & O'Dell, 1976).

The mean raw scores deviation in the Insecurity (O) trait scales between norm and research samples was .1. The norm population raw score mean is 10.2 (SD = 4.12) and research sample raw score mean is 10.2 (SD = 3.76). The difference between the raw score mean of the norm group and that of the research sample is not statistically significant (t (51) = .122, p = .904). The sten score mean of 5.8 (SD = 1.84) for the research sample also is not statistically significant (t (51) = 1.208, p = .223).

Radicalism (Q1). Individuals who score high on this trait scale tend to have a critical nature (Karson & O'Dell, 1976). They also tend to be very effective group

problem-solvers, although they may not be popular within the group (Cattell & Stice, 1960). High scores generally reveal personalities that prefer to diverge from societal traditions (Krug et al., 1997). Above-the-mean scores also indicate liberal individuals who are innovative, trusting logic over feelings. Low scores reveal conservative, more traditional individuals (IPAT, 1978).

The raw score mean of the research sample was 9.3 (*SD* = 2.65), while the norm population mean raw score was 8.6 (*SD* = 3.16). The difference between the raw score mean of the norm group and that of the research sample was .7, less than a one point difference between the groups and not a statistically significant variance (t (51) = 1.899, p = .063). However, the research sample's sten score mean of 6.2 (*SD* = 1.77) was a statistically significant variance from the norm (t (51) = 2.962, p = .004). The sample's sten score mean was within the range characteristic of an average personality exhibiting traits of Radicalism (Q1) as measured by the CAQ instrument. The divergence in scores between the norm sten scores and sample sten scores indicates the sample is more innovative and creative, is less traditional, and has a tendency to deviate from established societal norms.

Self-Sufficiency (Q2). Introversion and orientation towards inner-direction are indicated with individuals who score higher than the mean in this scale trait (Krug et al., 1997). Such individuals prefer to problem-solve and work alone, rather than in groups. While high scores correlate with academic success, they negatively correlate to frequency of job promotions (Barton & Cattell, 1972). Professionally, a social worker would be expected to score below the mean on this trait. Other occupations, such as actuaries, score

significantly above the mean (Taylor, 1969). Sherman and Krug (1977) have noted some positive correlations with high scores and medical consequences such as hypertension, coronary heart disease, tuberculosis and peptic ulcers. Additionally, when there are high scores on this trait scale in conjunction with low scores on both the Warmth (A) and Impulsivity (F) trait scales, or with high scores on both Insecurity (O) and Tension (Q4) trait scales, there are indications of pathological withdrawal from other people (Krug et al., 1997).

The Self-Sufficiency (Q2) trait raw score mean for the norm population was 10.2 (*SD* = 3.55) and the research sample mean score was 12.5 (*SD* = 3.03), for a net difference of 2.3. The difference between the raw score mean of the norm group and the raw score mean of the research sample was statistically significant (t (51) = 5.318, p = .001). The norm sten score is 5.5 while the sample sten score mean is 6.9 (*SD* = 1.60). The difference between the sten score mean of the norm group and that of the research sample was statistically significant (t (51) = 6.328, p = .001). The research sample's sten score acknowledges a group more resourceful and self-sufficient than average (IPAT, 1980).

Several combined trait scales means scores also were evaluated for possible pathological indications. The research sample's Self-Sufficiency (Q2) score was compared to their lower than mean score on Warmth (A). Those scores, combined with an above-the-mean score on Impulsivity (F) are not indicators of pathological withdrawal within the research sample. The research sample's 5.8 sten score mean on Insecurity (O) was next compared with the sten score mean of 5.9 on Tension (Q4). Those scores,

combined with an elevated 6.9 sten score mean on the Self-Sufficiency (Q2) scale, do not appear to indicate withdrawal from others that is pathological.

Self-Discipline (Q3). High-scoring individuals on this personality scale trait are found to have strong control over their behaviors and emotional life (Karson & O'Dell, 1976). With extremely high scores, individuals may also exhibit compulsive behaviors (Krug et al., 1997). Airline pilots generally score high on the Self-Discipline (Q3) scale, as do persons who self-report being tidy, organized, and not leaving matters of importance to chance. Medically, there is slight evidence of positive correlations with higher scores and coronary heart disease. Low scores on this trait scale would indicate individuals with an inability to keep their emotions in order. Extremely high scores on the Self-Discipline (Q3) scale, in union with high scale scores on the Insecurity (O) and Tension (Q4) trait scales, point to tendencies of compulsivity and obsessional behaviors.

The raw score mean of the research sample was 11.6 (SD = 3.12), while the norm population mean raw score was 12.9 (SD = 3.35). The difference between the raw score mean of the norm group and the raw score mean of the research sample of -1.3 was statistically significant (t (51) = -2.946, p = .005). The sten score mean of the norm 5.5 is (Krug et al., 1997) while the sten score mean for the sample is 4.9 (SD = 1.73). The difference between the sten score mean of the norm group and that of the research sample was statistically significant (t (51) = -2.559, p = .013). The variances indicate the research sample has *more self-discipline and self-control* than the norm (IPAT, 1980). There are neither indications of anxiety within the research sample, nor indications of

obsessional or compulsive behavior disorders based on comparison of this trait scale with the Insecurity (O) and Tension (Q4) trait scales.

Tension (Q4). This trait scale is a major contributor to anxiety in the Clinical Factor scales, discussed below (Krug et al., 1997). Self-reports of high-scorers reveal persons who are easily irritated, slow to relax, have trouble sleeping, and who easily express anger at others. Higher scores has some association with frustrated motivation. Karson and O'Dell (1976) argue high scores on this trait scale are a clear indication the individual is making a "cry for help." Therapeutic interventions with a focus towards raising Emotional Stability (C) traits or reducing Insecurity (O) traits, have been shown to reduce the Tension (Q4) trait scale scores (Skidmore, 1977).

The Tension (Q4) trait scale norm population raw score mean was 11.8 (SD = 4.85) while the raw score mean of the research sample was 12.3 (SD = 4.23), a difference of .5. The sten score for the research sample is 5.9 (SD = 1.63) (Krug et al., 1997). The difference between the raw score mean of the norm group and that of the research sample was not statistically significant (t (51) = .799, p = .428). The difference between the sten score mean of the norm group and that of the research sample also was not statistically significant (t (51) = 1.962, p = .055).

Clinical Factors

Hypochondriasis (D1). Depression and preoccupation with bodily dysfunctions are the hallmarks of high-scoring individuals on this scale (Krug et al., 1997). Krug and Laughlin (1977) noted this scale is a chief component in Depression (D), a Second-Order

factor examined by the CAQ; more so for women than men, however. Schizophrenics and women neurotics generally score higher than men on this scale. Low sten scores would suggest individuals with few somatic complaints, whereas high sten scores of 7 or more indicate a person obsessed with ill health (IPAT, 1980).

The norm population's mean raw score was 4.6 (*SD* = 4.82), while the raw score mean of the research sample was 3.4 (*SD* = 4.43). This is a net difference in raw mean scores between the norm and sample groups of -1.2. The difference between the raw score mean of the norm group and the raw score mean of the research sample was not statistically significant (t (51) = -1.960, p = .06). The norm sten score mean was 5.5 (Krug et al., 1997) while the sten score for the study participants was 4.9 (*SD* = 1.82). The difference between the sten score mean of the norm group and that of the research sample was statistically significant (t (51) = -2.281, p = .027), based on the sten score variance. The study sample would be expected to have *fewer somatic complaints and no indications of schizophrenia* (IPAT, 1980).

Suicidal Depression (D2). Questions on the CAQ regarding the Suicidal Depression (D2) Clinical Factor revolve around thoughts of suicide (Krug et al., 1997). This Factor is also a chief contributor to the Second-Order Depression Factor in the CAQ. Individuals with high scores on the Suicidal Depression (D2) scale believe they are in hopeless situations and think death is a realistic alternative. High-scorers report life lacks meaning or purpose for them. Extremely high scores on this factor are found where individuals have been with diagnosed with depression and schizophrenia, as well as individuals with antisocial or passive-aggressive personalities. Contented people have

sten scores of 4 or lower on this scale, while despondent and self-destructive individuals usually have higher sten scores of 7 or more (IPAT, 1980).

The raw score mean in this factor scale for the norm population was 3.7 (*SD* = 4.71). The raw score mean for the research sample was 1.5 (*SD* = 2.48) a net difference -2.2. The difference between the raw score mean of the norm group and that of the research sample was statistically significant (t (51) = -6.331, p = .001). The norm sten score mean was 5.5 while the sten score mean for the sample was lower at 5.0 (*SD* = 1.23). The difference between the sten score mean of the norm group and the sten score mean of the research sample was statistically significant (t (51) = -2.822, p = .007). Based on raw and sten score mean comparisons between the groups the differences indicate *the sample is more contented with life than the norm and there are no indications of behavior disorders or psychopathology* (IPAT, 1980).

Agitation (D3). The Agitation (D3) scale is a descriptor for hypomanic syndrome. On the high-scoring end this scale indicates individuals who crave excitement and have an edgy love of adventure, with a degree of risk-taking that may not be altogether life-affirming (Krug et al., 1997). There appears to be some correlation between suicide attempts and high scores. Krug and Laughlin (1977) note that either high or low scores on this Clinical Factor scale would be cause for concern. Individuals diagnosed as neurotic, alcoholic or schizophrenic have abnormally low scores on this factor scale. When Agitation (D3) scale scores are significantly high, there are indications of antisocial personalities and narcotic abusers. While a sten score of 4 or less suggests an individual

capable of self-restraint, sten scores of 7 or greater reveal individuals who are impulsive and crave excitement, and who may be hypomanic (IPAT, 1980).

The Agitation (D3) factor scale raw score mean for the norm population was 11.7 (*SD* = 3.31). The raw score mean for the research group was slightly lower at 11.1 (*SD* = 3.11). The net difference between the groups was -.6. The difference between the raw score mean of the norm group and that of the research sample was not statistically significant (t (51) = -1.401, p =.167). The sten score mean for the sample was 5.0 (*SD* = 2.09). The difference between the sten score mean of the norm group and that of the research sample was not statistically significant (t (51) = -1.595, p =.117). The sample is within the normal range and has *no indications of behavior disorders or psychopathology* based on these scale scores (IPAT, 1980).

Anxious Depression (D4). Krug and Laughlin (1977) indicate the Anxious Depression (D4) Clinical Factor scale is a relatively minor contributor to depression patterns revealed by the CAQ. High-scoring people self-report as shaky and clumsy, have frightening dreams, lack self-confidence, and have difficulties with self-expression (Krug et al., 1997). Individuals with high scores are often confused and lack sufficient resources to cope with life's abrupt demands. Scores are high in alcoholics, neurotics and individuals with nonparanoid schizophrenia. A sten score of less than 5 signifies a composed individual, and sten scores greater than 6 suggest an individual who is shaky, frightened and clumsy (IPAT, 1980).

The mean of the raw scores for the Anxious Depression (D4) scale within the norm population was 7.1 (*SD* = 4.00). The mean of the raw scores within the research

sample was nearly a point lower, at 6.2 (*SD* = 2.75). The net difference between the groups was -.9. The difference between the raw score mean of the norm group and that of the research sample was statistically significant (*t* (51) = -2.431, p = .019). The norm sten score mean was 5.5 and the research sample sten score mean was 5.2 (*SD* = 1.49). The difference between the sten score mean of the norm group and that of the research sample was not statistically significant (*t* (51) = -1.595, *p* = .117). However, the lower research sample raw score mean indicates a *more composed and less depressed sample group who has no indications of psychopathology* (IPAT, 1980).

Low Energy Depression (D5). The Low Energy Depression (D5) Factor scale is a key contributor to the Second-Order Depression (D) scale (Krug et al., 1997). Feelings of gloom and sadness are frequent complaints from individuals who score high on this scale. Self-reports indicate furtive, restless sleep patterns and a lack of energy. There is little enthusiasm for life. Men alcoholics and women narcotic abusers, as well as women schizophrenics and neurotically depressed people generally score high on this factor scale. Low sten scores of 4 or less indicate an energetic person, whereas a sten score of 7 or greater indicates feelings of gloom, sadness and being "worn out" (IPAT, 1980). When scores are high in this scale and Hypochondriasis (D1) together, a complete medical evaluation is indicated.

The mean of the raw scores for Low Energy Depression (D5) within the norm population was 7.7 (*SD* = 6.27). The mean of the raw score within the research sample was 4.8 (*SD* = 4.64) a net difference in the raw scores of 2.9. The difference between the raw score mean of the norm group and that of the research sample was nearly three points

and statistically significant (t (51) = -4.446, p = .001). The sten score mean for the research sample was 4.6 (SD = 1.70). The difference between the sten score mean of the norm group and that of the research sample was statistically significant (t (51) = -4.005, p = .001). The lower mean sten score for the research sample indicates the group is more energetic and has more energy for life than the norm population (IPAT, 1980). There also are *no indications of schizophrenia or neurotic depression* in the sample.

Guilt and Resentment (D6). Depression on the Guilt and Resentment (D6) scale is connected to feelings of having committed reprehensible acts, which are unforgivable (Krug et al., 1997). Individuals who score high on this factor scale self-report troubling feelings of guilt. They experience difficulty falling asleep at night, while ruminating over the day's mistakes; further, they are inclined towards self-criticism and self-blame. Nightmares with themes of desertion are frequent. Alcoholics, narcotic abusers and persons with passive-aggressive and other behavior disorders score highest in this factor scale. High scores on the Guilt and Resentment (D6) Factor scale are indications of a breakdown in ego defenses and correlate the highest, with Insecurity (O) on the Personality Trait scales. Low-range sten scores of 4 or less, reveal untroubled individuals while sten scores of 7 or greater point to a person who feels guilty, is self-critical and resentful (IPAT, 1980).

The mean of the raw scores for the Guilt and Resentment (D6) Factor scale within the norm population was 6.6 (SD = 5.20). The mean of the raw score within the sample was 4.1 (SD = 2.92), for a net difference in the raw scores between the groups of -2.5. The difference between the raw score mean of the norm group and the raw score mean of

the research sample was statistically significant (t (51) = -6.155, p = .001). The sten score mean of the research sample was 4.7 (SD = 1.34). The difference between the sten score mean of the norm group and that of the research sample was statistically significant (t (51) = -4.358, p = .001). The variance indicates *an untroubled research sample with no indications of personality disorders* (IPAT, 1980).

Boredom and Withdrawal (D7). There are two key features to the Boredom and Withdrawal (D7) scale: that life is ridiculous and lacks meaning, and that other people are to be avoided, (withdrawal from people or interpersonal isolation) (Krug et al., 1997). Feelings of personal uselessness and depression limit the desire to associate with others. While schizophrenics score the highest on this scale, narcotic abusers also have highly elevated scores. This scale negatively correlates with the Second-Order Extraversion (Ex) scale. A sten score below 5 would indicate the individual seeks relationships with others, while a sten score above 6 indicates the person seeks seclusion and feels useless (IPAT, 1980).

The norm population's raw scores mean for this factor scale was 4.7 (SD = 3.78). The research sample's raw scores mean was 3.7 (SD = 2.69) for a net difference in the raw scores between the groups of -1.0. The difference between the raw scores means of the norm group and that of the research sample was statistically significant (t (51) = -2.514, p = .015). The sten score mean for the research sample was 5.4 (SD = 1.32). The difference between the sten score mean of the norm group and that of the research sample was not statistically significant (t (51) = -0.421, p = .676). While the Boredom & Withdrawal (D7) scale sten score mean, for the norm and sample are within

average range, the more sensitive raw sten scores variance indicates the research sample seeks relationship with others more than the norm and there are *no indications of tendencies toward either depression or schizophrenia within the sample* (IPAT, 1980).

Paranoia (Pa). The Paranoia (Pa) Clinical Factor scale measures the individual's experience of persecution, suspicion, the sense of injustice, and cynicism concerning human nature (Krug et al., 1997). Elevated scores on this scale indicate pathology. This scale and Suspiciousness (L), in the Personality Trait scales together may show elevated or depressed levels, although the Suspiciousness (L) trait scale is a normal extension of the personality. Factor scale scores on Paranoia (Pa) are extremely high in individuals with behavior disorders. Whereas scores are high in diagnosed schizophrenics and paranoid schizophrenics, narcotic users usually score only slightly above the mean, while neurotics and alcoholics score at the mean on the Paranoia (Pa) trait scale. Sten scores of 4 or less reveal individuals who are reasonable, while sten scores of 7 and above point to individuals who are unreasonable and feel persecuted (IPAT, 1980).

The norm population's raw scores mean for the Paranoia (Pa) scale was 5.2 (SD = 3.66). The research sample's raw scores mean was 5.1 (SD = 2.71), for a minimal net difference in the raw scores between the groups of -.2. The difference between the raw score mean of the norm group and raw score mean of the research sample was not statistically significant (t (51) = -0.434, p = .666). The sten scores of the sample also disclose an insignificant .03 sten score point difference between the groups. The research sample's sten scores mean was 5.5 (SD = 1.39). The difference between the sten score mean of the norm group and that of the research sample was not statistically significant

(t (51) = .100, p = .921). There are no indications the sample is within the pathological criteria for paranoia, schizophrenia, neurosis, or behavior disorders (Krug et al., 1997).

Psychopathic Deviation (Pp). Reduced inhibition to pain or physical danger and societal criticism is one characteristic of the high-scoring individual on this pathological Clinical Factor scale (Krug et al., 1997). High scoring individuals revel in quarrels, are sensation seekers, and can spend long hours awake, without fatigue setting in. Men who use narcotics and people with antisocial personalities generally score high, contrasted by neurotics, alcoholics, and schizophrenics, who usually have low scores on this scale. Krug and Laughlin (1977) noted some indications high scorers may either have a reduced ability to concentrate or lower intelligence.

There may be multiple interpretations for the Psychopathic Deviation (Pp) scale. Scores are commonly elevated in professional and highly educated populations. Krug et al. (1997) theorize high scores among those populations may indicate alexithymia, more commonly known as being emotionally anesthetized. Sifneos (as cited in Kooiman, Bolk, Brand, Trijsburg, & Rooijmans, 2000) noted “alexithymia” is a personality trait characterized by difficulties in differentiating and describing feelings. This condition is characterized by a thought process focusing on the factual facets of external reality, as opposed to the psychological and affective experience of life events. Clinically, Moore and Fine (1990) defined alexithymia as a cognitive and affective disturbance noted in patients with posttraumatic, psychosomatic, or addictive diagnoses. Such individuals generally lack intuition, imagination, and empathy.

The Psychopathic Deviation (Pp) scale also tends to positively correlate with the Agitation (D3) Clinical Factor scale. Sten scores which are 4 and below on Psychopathic Deviation (Pp), lead to increasing levels of inhibited behaviors. As sten scores reach 7 or greater, increasing levels of uninhibited and antisocial conduct would be expected (IPAT, 1980).

The mean of the raw scores for the norm population on this scale was 14.2 (*SD* = 3.61). The sample's raw scores mean was 14.3 (*SD* = 3.17), for a minimal net difference in the raw scores between the groups of .1. The difference between the raw score mean of the norm group and that of the research sample was not statistically significant (t (51) = .315, p = .754). The difference between the sten score mean of the norm group and that of the research sample, 5.7 (*SD* = 1.94), was not significant statistical (t (51) = .644, p = .552) (IPAT, 1980). Psychopathology is neither indicated with the sample nor does the research sample's score mean reveal any specific indications of schizophrenia, antisocial personalities, or pathological neurosis (Krug et al, 1997).

Schizophrenia (Sc). The Schizophrenia (Sc) Factor scale relates to an individual's extreme withdrawal from reality (Krug et al., 1997). Individuals who score high on this scale report feeling rejected by others, see the world around them as indifferent, have peculiar impulses, and experience memory lapses. This scale measures for extreme pathology. High-scorers report hallucinatory experiences, feel they are unimportant to others, and experience the world as unreal. As the title suggests, schizophrenics score the highest, while neurotics and narcotic abusers score only moderately high on this scale.

Lower sten scores indicate a more reality-oriented individual, while scores of 7 or above indicate the individual is withdrawn and in retreat from reality (IPAT, 1980).

The norm population raw score mean on the Schizophrenia (Sc) Clinical Factor scale was 4.6 (*SD* = 3.87). The research sample's raw scores mean was 4.1 (*SD* = 3.13). The difference between the sten score mean of the norm group and that of the research sample is not statistically significant (t (51) = -1.209, p = .230). The sten score mean of the research sample was 5.4 (*SD* = 1.75). The difference between the sten score mean of the norm group and the sten score mean of the research sample was not statistically significant (t (51) = -0.316, p = .759). There are *no indications of psychopathology in the sample* on this pathological factor trait scale (Krug et al., 1997).

Psychasthenia (As). The Psychasthenia (As) scale reveals personality characteristics commonly associated with obsessive and compulsive behavior patterns, and connotes possible tendencies toward anxiety and general psychosis (Krug et al., 1997). High scores reveal individuals with behavior patterns over which there is little self-control. Uncontrolled and repetitive thoughts and phrases, repeating for many days, are a common experience, as well as constant worry over matters which are known to be unimportant. Phobic patterns are also suggested on this Clinical Factor scale. Elevated scores are commonly found with obsessive-compulsive neurotics and substance abusers as well. A sten score of 4 or less indicates noncompulsive behavior patterns, while scores of 7 and above indicate obsessive compulsive behaviors (IPAT, 1980).

The Psychasthenia (As) Clinical Factor scale norm population mean of raw scores on this scale was 6.8 (*SD* = 4.10), with a sten score of 5.5 (Krug et al., 1997). The

research sample raw score mean was 4.3 (*SD* = 2.83) and the sten score mean was 4.4 (SD = 1.38). The raw score net difference between the groups was 2.5 and the net sten score difference was 1.1. The difference between the raw score mean of the norm group and that of the research sample is statistically significant (t (51) = -6.513, p = .001). The difference between the sten score mean of the norm group and the sten score mean of the research sample is also statistically significant (t (51) = -6.009, p = .001). The lower raw and sten score means for the research sample indicates they are *less compulsive in their behaviors* than the norm and have no indications of psychopathology on this factor trait scale (IPAT, 1980).

Psychological Inadequacy (Ps). High scores on the Psychological Inadequacy (Ps) scale are indicative of neurotic as well as psychotic individuals (Krug et al., 1997). An individual scoring high on this scale likely self-describes being predestined to failure, damned, or good for nothing or to anyone. This scale contributes to the Depression (D) scale of the Second-Order Factors, as well. Lower range sten scores of 4 and below, indicate well-adjusted individuals, while sten scores of 7 and greater point to unstable and neurotic personalities (IPAT, 1980).

The norm population raw score mean on this scale was 5.5 (*SD* = 4.98), with a sten score of 5.5 (Krug et al., 1997). The research sample's raw score mean was 3.4 (*SD* = 3.13), with a sten score of 4.8 (*SD* = 1.40). The variance between the raw scores means of the norm population and that of the research sample, 2.1, was statistically significant (t (51) = -4.743, p = .001). The difference between the sten score mean of the norm group, 5.5, and that of the research sample, 4.8 (*SD* = 1.40), was statistically

significant (t (51) = -3.475, p = .001). The lower raw and sten score means for the research sample indicates a more well-adjusted sample, and *no indications of psychosis, reality distortions, neurosis, or learned helplessness* among them (IPAT, 1980).

Tendencies Toward Addictive Behaviors

Group Tendencies Toward Narcotic Abuse

In addition to primary personality trait and clinical factor measurements, the CAQ identifies and analyzes tendencies towards chemical dependency across nine of the twelve Clinical Factor scales. Only eight of the CAQ trait scales are evaluated for combined gender analysis. The study sample and norm raw score means and standard deviations are shown in Appendix K3. The research sample sten score means and standard deviations are shown in Appendix K4. The norm mean is 5.5 (Krug et al., 1997).

Extremely high mean scores on the Agitation (D3), Guilt and Resentment (D6), Boredom & Withdrawal (D7), and Clinical Factor trait scales are indicators of tendencies towards narcotic abuse or addiction (Krug et al., 1997). The research sample's sten score means were within the average range on the Agitation (D3) scale, below average on the Guilt and Resentment (D6) scale score, and near the mean on Boredom & Withdrawal (D7). These sten score means indicate the research group does not have tendencies towards either narcotic abuse or addiction.

Examination of several other Clinical Factor scales also indicated the study sample had no tendencies towards narcotic abuse or addiction. On Schizophrenia (Sc), narcotic abusers generally score moderately high, on Psychasthenia (As) mean scores may be only slightly elevated for indications of narcotic abuse, while scores higher than

the mean on the Paranoia (Pa) scale could indicate tendencies towards chemical dependency among the sample (Krug et al., 1997). The research sample mean sten scores on the Schizophrenia (Sc) scale, 5.4, in conjunction with a low sten score mean on Psychasthenia (As), 4.4, and an average sten score mean on the Paranoia (Pa) scale, 5.5, are clear indications the research sample does not have tendencies towards chemical dependence.

Group Tendencies Toward Alcoholism

As a group, alcoholics have abnormally low mean scores on the Agitation (D3) scale, high mean scores on the Anxious Depression (D4), and low or below normal scores on the Psychopathic Deviation (Pp) scale. Alcoholics also score extremely high on the Guilt and Resentment (D6) scale, but have only average scores on the Paranoia (Pa) scale (Krug et al., 1997). The research sample had a sten score mean of 5.0, slightly lower than the norm on Agitation (D3), a sten score mean of 5.7 on Psychopathic Deviation (Pp), a sten score mean of 5.2 on Anxious Depression (D4), a sten score mean of 4.7 on Guilt and Resentment (D6), and a sten score mean of 5.5 on Paranoia (Pa) Clinical Factor trait scales. This combination of sten score means indicates the research sample does not gravitate towards alcoholism. The foregoing comparisons of sten score means on all the relevant Clinical Factor trait scales between the norm and research sample are patent signs the *research sample does not have tendencies towards chemical dependence, including alcoholism.*

Chemical Dependence Tendencies Within Genders

Men. To evaluate gender-based tendencies towards chemical dependence only among men, two of the CAQ Clinical Factor scales are indicators of chemical dependence. A *t* test was used to evaluate those two primary Clinical Factor scales: Low Energy Depression (D5) and Psychopathic Deviation (Pp) in comparing the research sample men with the norm population men (Krug et al., 1997). Mean scores are especially high (9—10) with men alcoholics on the Low Energy Depression (D5) scale, while on the Psychopathic Deviation (Pp) scale high scores (8 or above) are common for men narcotic users and below normal (4.5 or lower) for alcoholics. The research sample men and norm population raw score means and standard deviations are shown in Appendix K5 and the respective sten score means and standard deviations are shown in Appendix K6.

The raw score mean on the Low Energy Depression (D5) scale for men in the norm population was 6.3 (*SD* = 5.82) (Krug et al., 1997). The research sample men's raw score mean was 5.3 (*SD* = 4.71), for a net difference in the raw score means between the groups of -1.0. The difference between the raw score mean of the norm group and the raw score mean of the research sample was not statistically significant (t (26) = -1.076, p = .291). The sten score mean of the research sample was 4.8 (*SD* = 1.65). The difference between the sten score mean of the norm group and the sten score mean of the research sample was statistically significant (t (26) = -3.647, p = .001).

The raw score mean on the Psychopathic Deviation (Pp) Clinical Factor scale for men in the norm population was 15.3 (*SD* = 3.56) (Krug et al., 1997). The research sample's raw score mean was 14.9 (*SD* = 3.42), for a net difference in the raw scores

between the groups of -.4. The difference between the raw score mean of the norm group and the raw score mean of the research sample was not statistically significant (t (26) = -.538, p = .595). While the research sample has a minimally lower raw scores mean, the sten scores mean of the sample, 6.0 (SD = 2.02), reveals only a 0.5 point variance between the norm and sample group. The difference between the sten score mean of the norm group and that of the research sample was not statistically significant (t (26) = 1.267, p = .210).

For the research sample, the Low Energy Depression (D5) scale was below the mean and Psychopathic Deviation (Pp) scale score mean was 0.5 above the norm (5.5). For the subgroup of men in the research sample, the Low Energy Depression (D5) scale scores mean is far too low and the Psychopathic Deviation (Pp) scale scores mean is not sufficiently above the mean to demonstrate tendencies toward chemical dependence. Because neither of the scale score means for the research sample men on these Clinical Factor scales deviates in a statistically significant direction from the men in the norm population, the indication is that the *research population of men does not have tendencies toward narcotic addiction or chemical dependence.*

Women. To further examine gender-based tendencies towards chemical dependence among women, only one scale on the CAQ is an indication of women-specific chemical dependence. A *t* test was used to evaluate the Low Energy Depression (D5) primary Clinical Factor scale for statistical significance between the research sample women and the norm population women. Mean scores are especially high with women narcotic users (and women schizophrenics) on the Low Energy Depression (D5)

scale. The raw score mean and standard deviation of women in the sample and corresponding scores of women in the norm population are shown in Appendix K7. The respective sten score means and standard deviations are shown in Appendix K8.

The raw score mean on the Low Energy Depression (D5) Clinical Factor scale for the norm population of women was 9.0 (*SD* = 6.43) (Krug et al., 1997). The research sample's raw score mean was significantly lower at 4.2 (*SD* = 4.59), for a net difference in the raw score means between the groups of -4.8. The difference between the raw score mean score of the norm population and that of the research sample was statistically significant (t (24) = -5.227, p = <.001). The sten score of the norm was 5.5, while the research sample norm was 4.3 (*SD* = 1.75). The difference between the sten score mean of the norm group and the sten score mean of the research sample was statistically significant (t (24) = -3.373, p = .003). The inference that can be drawn from the foregoing comparison is that *the norm population would have significantly higher tendencies towards chemical dependence than the research sample and no indications of schizophrenia among the women sample.*

Second-Order Scores

Sten scores for the Second-Order Factors are in a range of 1 to 10. One to four-and-one-half are low-range scores, 4.5 to 6.5 are midrange or average, 5.5 is the mean, and 6.5 to 10 are high-range scores (IPAT, 1980). The closer to the extreme, in either direction, the more pronounced the factor in the individual. Unlike the Personality Trait and Clinical Factor scales, the Second-Order Factor scales do not have comparisons to a norm population in the Manual and do not use raw score means (Krug et al., 1997).

Rather, the sten scores for the Second-Order Factors are calculated through factor analysis of the correlations among the primary scale scores. Consequently, the group comparisons discussed below do not utilize raw scores of the primary scales in the discussion. The sten score mean of the norm is 5.5 on the Second-Order Factor scales, the same mean as the personality traits and clinical factors. The sten score *t* test statistical analysis for the research sample in the Second-Order Factors scales is included in Table 6.

Krug et al. (1997) noted the Second-Order Factor scores are calculated by factor analysis on linear composites, by combining sten scores of the primary Personality Traits and Clinical Factors. This method of calculation contributes to the reliability of the Second-Order Factors, as a more competent and holistic assessment tool of the individual than the primary personality traits and clinical factors alone. The Second-Order Factor scores assist in interpreting assessment results by focusing attention more closely on patterns within the primary scales. Reliability of the Second-Order Factors is approximately .80, while the standard error of measurement of the sten scale is .89 (Krug et al., 1997). Accordingly, scores ranging between 1—3 and 8—10 are more important than the midrange scores because the extreme scores tend to be more representative of the individual.

The median of the measurement error is .57 in sten score units, meaning that measurement error is less with the Second-Order Factors than the primary scales. Reduced error results in an approximately 92% probability the Second-Order Factor scale score is closer to a true representation of the clinical factors and personality traits of the test-taker. The research sample for all Second-Order scores was $N = 52$, degree of

freedom (*df*) = 51, and test value = 5.50. Table 6 sets forth the descriptive data for the Second-Order Factor scales.

Table 6

Second-Order One-Sample t Test[a]

Scale	*t*	*M*[b]	*SD*	*p*
Extraversion (Ex)	-3.993	4.8	1.20	<.001
Anxiety (Ax)	1.240	5.8	1.58	.121
Tough Poise (Ct)	-5.745	4.2	1.60	<.001
Independence (In)	7.079	7.0	1.50	<.001
Superego Strength (Se)	-4.206	4.4	1.86	<.001
Socialization (So)	-3.319	4.8	1.56	.002
Depression (D)	-3.806	4.7	1.55	<.001
Psychoticism (P)	-.319	5.4	1.52	.744
Neuroticism (Ne)	2.415	6.0	1.42	.014

[a] two-tailed, $N = 52$, $df = 51$. [b] Normative sample $M = 5.50$.

Extraversion (Ex)

Extraversion is the first Second-Order Factor scale. This scale represents extraversion as understood in personality theory (Krug et al., 1997). The primary scales which contribute the most to Extraversion (Ex) are Impulsivity (F) and Boldness (H) (IPAT, 1980). Low-range scores indicate persons who are inner-directed towards their thoughts and feelings. Conversely, high-range scores indicate persons who are oriented

outside themselves and to others. The research sample mean of 4.8 (*SD* = 1.20) was below the norm of 5.5. The difference between the sten score mean of the norm and research sample was statistically significant on the Extraversion (Ex) Second Order Factor scale (t (51) = -3.983, p = <.001). The research sample is oriented toward their thoughts, feelings, and internal experience, more so than the norm.

Anxiety (Ax)

The Anxiety (Ax) Second-Order Factor scale represents anxiety as understood in personality theory (Krug et al., 1997). Primary scales with major contributions to this Factor include Insecurity (O), Tension (Q4), and Guilt & Resentment (D6) (IPAT, 1980). Low-range scores on this scale indicate a person who is calm and tension free. High-range scores point to persons who are uneasy, apprehensive, and panicky. The research sample sten score mean of 5.8 (*SD* = 1.58) was very near the mean of 5.5 (Krug et al., 1997). There is no statistically significant variance between the norm mean of 5.5 and the research sample mean (t (51) = 1.240, p = .121).

Tough Poise (Ct)

High-scoring individuals are usually able to solve life's issues coolly and dispassionately (Krug et al., 1997). The major primary Personality Trait scale contributor to this Factor scale is Conformity (G) (IPAT, 1980). High-range scores indicate persons who are realistic and dispassionate. However, in the extreme high-range, the individual's dispassion can reach extremes resulting in poor interpersonal communications and relationships. While low scores indicate a person who is more emotionally responsive, at

the extreme low sten score end, the person may be so identified with their subjective emotional experiences that they lack resources to effectively deal with personal problems. The research sample sten score mean of 4.2
(*SD* = 1.60) was below the mean of 5.5 (IPAT, 1980). The difference between the sten score mean of the norm and research sample was statistically significant on the Tough Poise (Ct) scale (t (51) = -5.745, p = <.001). The Tough Poise (Ct) scale score mean of the research sample indicates they are *more emotionally responsive*, but more easily swayed by their feelings, than the norm population.

Independence (In)

The major primary scales utilized to calculate this Second-Order Factor scale are Dominance (E), Imagination (M), Radicalism (Q1), Self-Sufficiency (Q2), and Tension (Q4) (Krug et al., 1997). Individuals high in this scale are self-reliant, independent, and take command of their lives, while low scoring persons are easily controlled by others (IPAT, 1980). The study sample sten scores mean of 7.0 (*SD* = 1.50) was well above the CAQ norm mean of 5.5. The difference between the sten score mean of the research sample and that of the norm was statistically significant (t (51) = 7.079, p = <.001). The above average mean score indicates the *research sample is more self-reliant and independent than average* (IPAT, 1980).

Superego Strength (Se)

The Superego Strength (Se) Second-Order Factor is a temperament dimension, providing indications of intelligence (Krug et al., 1997). Major primary scale contributors

are Conformity (G) and Self-Sufficiency (Q2) (IPAT, 1980). High-range scores indicate restrained, but responsible individuals. The low scoring individual is less restrained, and individuals with scores at the extreme low end of the scale tend towards sociopathy. The research sample sten score mean of 4.4 (*SD* = 1.86) is below the norm mean of 5.5.The difference between the sten score mean of the norm and that of the research sample was statistically significant (*t* (51) = -4.206, *p* = <.001). The research sample's below-the-mean score indicates a group *less restrained in the conduct of their daily lives than the norm* (IPAT, 1980).

Socialization (So)

Contributors to this Second-Order Factor scale include the Personality Trait primary scales Conformity (G), Boldness (H), and Shrewdness (N) (IPAT, 1980). Low scores identify an individual as immature and hedonistic, whereas high mean scores reveal individuals who are more mature and subdued (IPAT, 1980). The study sample sten score mean of 4.8 (*SD* = 1.56) was below the norm mean. The difference between the sten score mean of the norm and that of the research sample on the Socialization (So) scale was statistically significant (*t* (51) = -3.319, *p* = .002). The variance points towards a research sample that, while within the average range, is more hedonistic than the norm (IPAT, 1980). The indications of a less restrained research sample on the Superego (Se) are bolstered by the sten score mean on the Socialization factor scale.

Depression (D)

Major primary scale contributors to the Second-Order Factor trait Depression (D) include the Clinical Factor scales Hypochondriasis (D1), Suicidal Depression (D2), and Low Energy Depression (D5) (IPAT, 1980). Scores on the low-range of the Depression (D) scale point toward people who are happy and have a positive outlook on life. High scoring individuals tend more towards being clinically despondent, solitary, and gloomy (Krug et al., 1997). Two other depressive primary scales, Psychological Inadequacy (Ps) and Boredom & Withdrawal (D7) also contribute to the Depression (D) Second-Order Factor scale. The study sample sten score mean of 4.7 (*SD* = 1.55) was below the norm mean, but still within the average range. The difference between the sten score mean of the research sample and the norm sten score mean was statistically significant (t (51) = 3.806, p = <.001). The sample's sten score mean of 4.7 was .8 below the norm of 5.5, indicating the *research sample is happier and has a more positive outlook on life* than the norm.

Psychoticism (P)

The major primary scale contributors to the Psychoticism (P) Second-Order Factor scale include Paranoia (Pa) and Schizophrenia (Sc), Boredom & Withdrawal (D7), and Psychological Inadequacy (Ps) (IPAT, 1980). Psychoticism (P) correlates positively with reports of depression among both genders (Krug et al., 1997). Lower range scores indicate well-integrated people, while the high-range scores reveal individuals with disorganized thought and psychotic behavior patterns (IPAT, 1980). The study sample sten score mean was 5.4 (*SD* = 1.52), close to the norm of 5.5 (IPAT, 1980). The

difference between the sten score mean of the norm and that of the research sample was not statistically significant on the Psychoticism (P) scale (t (51) = -.319, p = .744).

Neuroticism (Ne)

The primary scales with the largest contributions to the Neuroticism (Ne) Second-Order Factor scale are Insecurity (O) and Tension (Q4) (IPAT, 1980). Low-range scores indicate well-adjusted individuals; in contrast, high scores point to unstable and neurotic people. The research sample sten score mean of 6.0 (SD = 1.42) was within the average range of the norm of 5.5. The difference between the sten score mean of the norm and the sten score mean of the research sample was statistically significant differences (t (51) = 2.415, p = .014). The sample would be less likely to fit in with cultural norms, which confirms other scale indications that the sample is not as traditional as the norm.

Analysis of Sample Subgroups

The research sample subgroups of men and women were next compared against the norm population of men and women, using Table A.1 for Clinical Factor traits and Table A.16 for Personality Traits (Norms For General Population, Men + Women) from the Manual (Krug et al., 1997, pp. 68 & 82). Sample women were evaluated for chemical dependence on Low Energy Depression (D5) because high scores on that scale are indications of narcotic usage and chemical dependence.

The women subgroup was isolated from the sample and evaluated on Low Energy Depression (D5). Table 2.1 (Norms for Normal Adult Women [pg. 8]) of the Manual was used for statistical evaluation of this subgroup. Sample men were also evaluated for

chemical dependence, but on one additional factor scale. High scores are common with men narcotic users on Psychopathic Deviation (Pp) while Low Energy Depression (D5) mean scores are especially high with men alcoholics, and are indications of addiction and chemical dependence. Table 2.2 (Norms for Normal Adult Men [pg. 9]) of the Manual is used for statistical evaluation of this subgroup (Krug et al., 1997).

Statistical analysis of gender subgroups attempted to determine whether there was a statistically significant deviance from the norm. Further evaluation of the research sample subgroups was carried out based on participant age, number of years of involvement with the Santo Daime Church, the number of Festivals the participants had attended, and the average number of ceremonies the participants had attended during the Festivals. Numerically different criteria were used in the creation of the specific gender-based subgroups in order to create relatively equal numerical populations of the subgroups.

ANOVA Analysis

The following statistical analysis of sample subgroups contains only raw scores tables. Sten scores are not discussed except for Second-Order Factors and as necessary to discuss statistically significant variances between the sample groups. Whereas sten scores compare the study sample to a norm population, the subgroups compared below are not compared to a norm population, but to each other. In the following discussion, raw scores are rounded to the nearest whole number to calculate the appropriate sten score where variances were found to exist between the subgroups.

Gender Subgroups

Analysis of variance was conducted to compare the sample subgroups and identify whether there were statistically significant differences between the gender subgroups of men and women participating in this study. Analysis of variance compares the means of two or more groups and was used in this analysis to account for the unequal number in each group. Appendix K9 presents the data from this analysis of the Personality Trait, Clinical Factor, and Second-Order Factor scales. There were 27 men and 25 women included in this gender-based comparison. As Appendix K9 reveals, there are statistically significant deviations between the gender-based subgroups within two of the Personality Traits and on one Second-Order Factor scale, but no statistically significant differences on the Clinical Factors trait scales.

Significant differences between men and women were only noted on the Sensitivity (I) Personality Trait scale. The men raw score mean was 13.6, (SD = 2.85) and women raw score mean was 15.5 (SD = 2.10) (F (1,50) = 7.564, p = 0.008) with women having a higher mean score than did the men subgroup. The raw score means for the sample men and women were converted to a sten score mean of 7 for the study men, and a sten score mean of 8 for the study women. The difference between the sten score mean of the sample men and that of the sample women suggested that while the men were more sensitive than the norm, the sample women were tender-minded and even more sensitive than the men (IPAT, 1980). Krug et al. (1997) noted high scores (range of 8—10) indicate preferences for reason over force in accomplishing tasks, an enjoyment of sentimental music, and a preference for studying English over mathematics.

A statistically significant variance between men and women was noted on the Tough Poise (Ct) Second-Order Factor scale. The sten score mean for the men was 3.6 (*SD* = 1.17) and the sten score mean for the women was 4.9 (*SD* = 1.77) (F (1,50) = 8.808, p = .005) with women having a higher score mean than the men. The difference between the sten score mean of the sample men and that of the sample women indicated the men, as a group, were more easily swayed by their feelings (IPAT, 1980) and were more emotionally responsive than the women (Krug et al., 1997). The sten score mean comparison of the men and women also indicated the research sample women had more emotional resources, and were somewhat better able to handle personal problems than the men.

There may have been a number of significant differences when the research sample was compared to the norm, not noted by statistical analysis. However, statistical analysis of the population's gender subgroups failed to identify additional scales on which there were significant differences between genders. The men and women participating in this study were remarkably similar to each other and to the norm, on the scales contained in the CAQ.

Subgroups Based on Age

In the subgroups categorized by age, men were divided into two subgroups: a high age-range subgroup of participants who were 50 and older, and a low age-range subgroup who were under 50 years of age at the time the materials were completed. Women were also divided into two subgroups: a high age-range subgroup of women who were 52 and older and a low age-range subgroup of women who were 50 years of age and younger, at

the time the materials were completed. There were no women in the study sample who were 51 years of age. Age-criteria for the gender subgroups were slightly different between men and women to allow for numerically consistent subgroup sizing and statistical equivalence. Table 7 presents age demographics for men and women.

Because of the small size of the overall study sample, the two high age-range gender groups (men and women) were combined and compared against the low age-range subgroups, men and women combined. The low age-range subgroup of men and women combined comprised 52% of the study sample and the high age-range subgroup of men and women combined comprised 48% of the study sample. The groups were then statistically compared by the SPSS software program and the subgroups scale score results compared (SPSS, 2004).

Table 7

Low and High Age-Range Subgroups by Gender

	Age Range			
Gender	Low	High	*Mdn* Age	*M* Age
Men[a]	14	13	49	45.3
Women[b]	13	12	50	46.9
Men and Women	27	25	50	46

[a]Low = $\leq$ 49, High = $\geq$ 50. [b]Low = $\leq$ 50, High = $\geq$ 52

ANOVA analysis based on age. Additional ANOVA statistical analysis was conducted with subgroups of the research sample. Table 7 presents the demographic data

of age-based population subgroups. A high age-range subgroup of men and women combined (n = 25) was compared against a low age-range group of men and women (n = 27). The low age-range group was composed of participants 50 years of age and younger, while the high age-range group was composed of individuals over the age of 50 years. Statistically significant results were obtained between the high age-range and low age-range subgroups on the Emotional Stability (C), Boldness (H), and Insecurity (O) Personality Trait scales; Anxious Depression (D4), Guilt and Resentment (D6) Clinical Factor scales; and the Extraversion (Ex), Anxiety (Ax), and Independence (In) Second-Order Factor scales. Appendix K10 presents a statistical analysis of the CAQ assessment results for high and low-range subgroups.

On the Emotional Stability (C) Personality Trait scale the high age-range raw score mean was 14.2, (SD = 3.74) and low age-range raw scores mean was 16.5 (SD = 3.58) with older participants having a mean score significantly below the mean of their younger counterparts. The difference between the raw score mean of the older participants and that of the younger participants was statistically significant (F (1,50) = 5.034, p = .029). The high age-range group's sten score mean was 3 and the low age-range group's sten score mean was 6. The older group is emotional and likely more easily upset than their younger counterparts (IPAT, 1980).

On the Boldness (H) Personality Trait scale the high age-range raw scores mean was 12.2, (SD = 5.76) and low age-range raw scores mean was 15.5 (SD = 4.30). The difference between the raw score mean of the older participants and that of the younger participants was statistically significant (F (1,50) = 5.339, p = .025). The high age-range group's sten score mean was 5 and low age-range group's sten score mean was 6. With

sten scores in this range, both research subgroups are average, but the younger group would tend to be more bold, adventuresome, energetic, and less threat-sensitive than the older group (IPAT, 1980).

On the Insecurity (O) Personality Trait scale the high age-range raw scores mean was 11.6, (*SD* = 3.20) and low age-range raw scores mean was 8.9 (*SD* = 3.86). The difference between the raw score mean of the older subgroup and the raw mean score of the younger subgroup was statistically significant (F (1,50) = 7.513, p = .008). The high age-range group's sten score mean was 7 and low age-range group's sten score mean was 5. The sten score mean difference between the subgroups indicates the high age-range group does not feel as secure or self-satisfied as the low age-range group (IPAT, 1980).

Significant differences were next noted on the Anxious Depression (D4) Clinical Factor scale between the high age-range and low age-range subgroups. The high age-range raw scores mean was 7.4 (*SD* = 1.80), and low age-range raw scores mean was 5.0 (*SD* = 2.99). The difference between the raw score mean of the younger participants and that of the older group was statistically significant (F (1,50) = 12.060, p = .001). The high age-range group's sten score mean was 6 and low age range group's sten score mean was 5. While the sten scores for both subgroups are in the midrange, the younger group is indicated to be somewhat more composed than the older group (IPAT, 1980). These nonelevated scores also bolster previous indications that neither age-based subgroup, when compared against each other, has any greater tendency toward alcoholism. The average scores of both subgroups also indicate the subgroups are psychologically healthy (Krug et al., 1997).

The Guilt and Resentment (D6) Clinical Factor scale also revealed statistically significant differences between the high age-range and low age-range subgroups. The high age-range raw scores mean was 4.9, (*SD* = 3.28) and low age-range raw scores mean was 3.3 (*SD* = 2.35). The difference between the raw score mean of the high age-range subgroup and the low age-range subgroup was statistically significant (*F* (1,50) = 4.047, *p* = .050). The high age-range group's sten score was 5 and low age-range group's sten score was 4. While the older group is average, the younger group is untroubled and more care-free than the older participants (IPAT, 1980). Average and below mean scores also are clear indicators that neither subgroup has tendencies towards either chemical dependence nor behavior disorders (Krug et al., 1997).

Significant differences were also noted on the Extraversion (Ex), Second-Order Factor scale between the high age-range and low age-range subgroups. The high age-range sten scores mean was 4.4, (*SD* = 1.36) and low age-range sten scores mean was 5.2 (*SD* = 0.85). The difference between the sten score mean of the high age-range subgroup and that of the low age-range subgroup was statistically significant (*F* (1,50) = (6.512), *p* = .014). With sten scores in this range, the younger group is average while the older subgroup is significantly more oriented toward inner thoughts and feelings (IPAT, 1980).

The Second-Order Factor scale Anxiety (Ax) revealed further significant differences between the high age-range and low age-range subgroups. The high age-range sten scores mean was 6.3, (*SD* = 1.40) and low age-range sten scores mean was 5.4 (*SD* = 1.58). The difference between the sten score mean of the younger subgroup and that of the older subgroup was statistically significant (*F* (1,50) = (4.844), *p* = .032).

Although both subgroups remain in the average range, the younger group likely feels less frustrated than the older subgroup (IPAT, 1980).

Finally, statistically significant differences between the high age-range and low age-range subgroups were noted on the Independence (In) Second-Order Factor scale. The high age-range sten score mean was 6.5, (*SD* = 1.32) and low age-range sten score mean was 7.4 (*SD* = 1.55). The difference between the sten score mean of the younger group and that of the older subgroup was statistically significant (F (1,50) = (4.700), p = .035). While both groups are significantly above average and decidedly self-reliant and independent, the younger group has more significant tendencies towards autonomy (IPAT, 1980).

Subgroups Based on Number of Years of Participation

The second subgroups were created with the following criteria: the number of years each participant had been involved with the Santo Daime Church. A low-range subgroup of men, who had been involved 5 or fewer years, was created, and a second, high-range subgroup of men who had been involved 6 or more years was created. Two subgroups of women were also created using similar criteria: one low-range subgroup of women was created who had been involved in the Church 6 or fewer years, and a second, high-range group of women who had been involved in the Church 7 or more years, was created. Experience-criteria for the gender subgroups were slightly different between men and women to allow for numerically consistent subgroup sizing and statistical equivalence. Table 8 presents data relating to creation of subgroups based upon years of experience for men and women.

Table 8

Low and High-Ranges of Years of Experience in Santo Daime Church by Gender

	Years of Experience				
Gender	Low	High	Range	Mode	*M*
Men[a]	13	14	1 - 10	2	5.3
Women[b]	12	13	1 - 11	6 & 10	7
Men and Women	25	27	1 - 11	7	6.2

[a]Low = ≤ 5 years, High = ≥ 6years. [b]Low = ≤ 6 years, High = ≥ 7 years.

Due to the relatively low numerical subgroup populations, the two low-range subgroups of men and women were combined into one low-range subgroup. A second subgroup of high-range men and women was also created, based upon years of involvement in the Church. The high-range subgroup of men and women combined totaled 52% of the study sample while the low-range subgroups of men and women combined consisted of 48% of the study sample. Criteria for participation in those subgroups varied to allow for numerically consistent subgroup sizing and statistical equivalence. In the high-range subgroup, the men participated 6 or more years and the women participated 7 or more years. In the low-range subgroup, the men participated 5 or fewer years and the women participated 6 or fewer years. The two subgroups were then statistically compared by the SPSS computer program (SPSS, 2004).

ANOVA Analysis for Years of Participation

Research population subgroups were next analyzed based upon the number of years of participation in Santo Daime Church ceremonies. ANOVA statistical analysis was conducted with subgroups created using those criteria. Table 8 presents demographic data for the subgroups based on the number of years the population attended Santa Daime ceremonies. Appendix K11 contains ANOVA analysis for the subgroups based on the number of years of association with the Santo Daime Church. A high-range subgroup of men and women combined (n = 27) was compared against a low-range group composed of men and women (n = 25). Appendix K11 presents a statistical analysis of the data for these subgroups.

Statistically significant results were obtained on only two Clinical Factor scales: Hypochondriasis (D1) and Suicidal Depression (D2). Tables A.1 for Clinical Factor scales (pg. 68) and A.16 for Personality Trait scales (pg. 82) from the Manual were utilized to calculate sten scores. Those Tables were utilized to convert raw score means because they neutralize subgroup variances based on gender (Krug et al., 1997).

Statistically significant difference was noted on the Hypochondriasis (D1) Clinical Factor scale between the high-range and low-range subgroups. The high-range raw score mean was 4.6 (SD = 5.25) and the low-range raw score mean was 2.0 (SD = 2.89) (F (1,50) = 4.609, p = .037). The high-range group's raw score means were converted to a sten score mean of 6 and low-range group's raw scores means were converted to a sten score mean of 5. Both sten scores are in the average, or midrange. However, the lower score of the group with fewer years of participation indicates they have slightly fewer somatic complaints than the high-range group (IPAT, 1980).

The second Clinical Factor scale which indicated statistically significant differences based on years of participation in Santo Daime ceremonies was on the Suicidal Depression (D2) scale. The high-range (6 & 7 years of participation) raw score mean was 2.3, (SD = 3.15) and low-range (5 & 6 years of participation) raw score mean was 0.7 (SD = 1.02) (F (1,50) = 5.705, p = .021). The low-range group's raw score converted to a sten score of 4 and the high-range group's raw score converted to 5. The lower score for the shorter-term participants indicates they are more contented with life than the group with more years of participation (IPAT, 1980). The group with more years of participation remains within the average range for healthy personalities.

Subgroups Based on Number of Festivals Attended

A third set of subgroups was delineated by the number of Festivals each participant had attended. A low-range subgroup of men, who had attended one or two Festivals was created, and a second, high-range group of men who had attended three or more Festivals was created. Two subgroups of women were created using the same criteria: one low-range group of women who had attended one or two Festivals, and a second high-range group of women who had attended three or more Festivals. Table 9 presents data relating to creation of subgroups by numbers of Festivals attended.

Table 9

Number of Festivals Attended by Gender

	Festivals Attended					
Gender	1 - 2	> 2	Range	Mode	*Mdn*	*M*
Men	17	10	1 - 10	1	2	2.4
Women	11	14	1 - 25	2	3	5.6
Men and Women	28	24	1 - 25	1	2	4

Low numerical values of the gender-based subgroup populations required combination of the two gender-based subgroups into one subgroup of low-range of attendance (men and women combined) and one subgroup of high-range of attendance (men and women combined). The high-range subgroup of men and women combined contained 54% of the research sample while the low-range subgroup of men and women combined covered 46% of the research sample.

ANOVA Analysis for Numbers of Festivals

ANOVA analysis was next performed with subgroups based on the number of Festivals attended. Statistically significant results for the subgroups based on number of Festivals attended were obtained on the Paranoia (Pa) Clinical Factor and Psychoticism (P) Second-Order Factor scales. A low-range of participation means one or two Festivals, while high-range of participation means having attended three or more Festivals. Table 9 presents demographic data for the subgroups based on the number of Festivals attended. The low-range subgroup was populated by 28 men and women participants combined

(54%). The high-range subgroup contained 24 men and women participants (46%). Appendix K12 presents statistical results on the subgroups.

The first significant difference between the two subgroups was noted on the Paranoia (Pa) Clinical Factor scale. The high-range raw score mean was 6.0, (*SD* = 2.97) and the low-range raw score mean was 4.3 (*SD* = 2.19) (*F* (1,50) = 6.244, *p* = .016). The subgroup with a high-range of experience scored significantly above the raw score mean of the low-range of experience subgroup. The raw scores were converted to sten scores using Tables from the Manual (Krug et al., 1997). The high attendance range group's raw score converted to a sten score of 6, while the low attendance range group's raw score converted to an average sten score of 5. Both subgroups are average but the group with more experience would likely be somewhat less reasonable, a more irritable and difficult to deal with group than their counterparts with less experienced (IPAT, 1980). This is the only scale on which there would be indications of the use of narcotics among the subgroup, but not necessarily an indication of abuse or chemical dependence (Krug et al., 1997). While just above average, a sten score of 6 presents no indications of tendencies towards clinical or behavior disorders, such as schizophrenia or paranoid schizophrenia, which require a high sten score of at least 8 or above.

The only other scale in which a significant difference was noted between the groups based on the number of Festivals attended was on the Psychoticism (P) Second-Order Factor scale. The high-range participation group sten score mean was 5.9, (*SD* = 1.57) and the low-range participation group sten score mean was 5.0 (*SD* = 1.37) (*F* (1,50) = 4.792, *p* = .033). The group with more Festival experience scored slightly less than one sten score point below the sten score mean of the group with less Festival

experience. Essentially, while both subgroups are within the normal or average range, the low-range subgroup could be expected to have slightly more well-integrated personalities, than the groups with more experience (IPAT, 1980).

Krug et al. (1997) indicated the score on Psychoticism (P) correlates with higher rates of depression in both men and women. The Depression (D) Second-Order Factor scale scores for both subgroups reveal neither a statistically significant deviation between the subgroups, nor a population with elevated scores on the Depression (D) scale. The high-range group mean sten score is 4.8 (*SD* = 1.68) and the low-range group mean sten score is 4.6 (*SD* = 1.46) (F (1,50) = 0.254, p = .617).

The Psychoticism (P) scale score correlates with the above-noted higher Paranoia (Pa) sten score for the high-range group but the subgroup remained within the average range. On the Schizophrenia (Sc) trait scale the high-range group scale score mean sten score 4.5 (*SD* = 3.58) and fewer Festivals group mean sten score 3.8 (*SD* = 2.70). The difference between the sten score mean of the high-range subgroup and the sten score mean of the low-range subgroup was not statistically significant (F (1,50) = 0.824, p = .368). On the Psychasthenia (As) scale the high-range subgroup sten score mean was 4.5 (*SD* = 2.86) and low-range subgroup sten score mean was 4.0 (*SD* = 2.85). The difference between the sten score mean of the high-range subgroup and that of the low-range subgroup was not statistically significant (F (1,50) = 0.342, p = .561). The Psychological Inadequacy (Ps) scale sten score mean for the high-range subgroup was 3.6 (*SD* = 3.43) and the low-range subgroup sten score mean was 3.3 (*SD* = 2.90). The difference between the sten score mean of the high-range subgroup and the low-range subgroup was not statistically significant (F (1,50) = 0.115, p = .736). The Paranoia (Pa),

Schizophrenia (Sc), Psychasthenia (As), and Psychological Inadequacy (Ps) trait scales are Clinical Factors which all contribute to, or load, on the Psychoticism (P) scale. That only one of four significant Clinical Factor scales scores correlates with Psychoticism (P) would indicate the overall difference between the low-range subgroup and high-range subgroup is limited, and does not reveal clinical concerns for either the high-range or low-range group (Krug et al., 1997).

Subgroups Based on Average Number of Ceremonies

The fourth set of subgroups was created using the following demarcation: the average of ceremonies per Festival each participant had attended. A high-range subgroup of men who had attended an average of ten or more ceremonies per Festivals, was created, and a second low-range group of men who had attended nine or fewer ceremonies per Festival, on average, was created. Two subgroups of women were created using the same criteria: one low-range group of women who had attended an average of seven or fewer ceremonies per Festival, and a second group of high-range women who had attended an average of eight or more ceremonies per Festival. The high-range subgroups of men and women were combined into one group and the low-range subgroups of men and women were combined into another group. Selection criteria for the subgroups were slightly different between men and women to allow for numerically consistent subgroup sizing and statistical equivalence. Table 10 presents data relating to creation of subgroups by numbers of Festivals attended.

Table 10

Number of Ceremonies Attended by Gender

	Ceremonies					
Gender	Low*	High*	Range	*Mode*	*Mdn*	*M*
Men	14	13	5 - 20	6 & 10	9	9.9
Women	14	11	4 - 25	6	7	8.2
Men and Women	28	24	4 - 25	6	8	8.4

*Low: Men = $\leq$ 9, Women = $\leq$ 7; High: Men = $\geq$ 9, Women = $\geq$ 7

Again, numerical values of the subgroup populations necessitated combining the low-range and high-range subgroups of men and women together into combined gender subgroups. The high-range subgroup of men and women combined covered 24 of the participants and the low-range subgroups of men and women combined totaled 28 of the study participants.

ANOVA Analysis for Average of Ceremonies Attended

ANOVA statistical analysis of the sample subgroups, based on average number of ceremonies per Festivals attended, revealed variances between the subgroups on the Psychopathic Deviation (Pp) Clinical Factor and Socialization (So) Second-Order Factor scales. The low-range subgroup was populated by 28 men and women participants combined (54%). The high-range subgroup contained 24 participants (46%). Fewer ceremonies (low-range) participation means, on the average, nine or fewer ceremonies for the men and seven or fewer ceremonies for the women, per Festival. More ceremonies (high-range) participation means, on average, ten or more ceremonies for the men and

eight or more ceremonies for the women per Festival. Table 10 presents demographic data relating to creation of subgroups by numbers of ceremonies attended per Festival. Appendix K13 presents the statistical analysis of the subgroups' scoring data.

Significant differences were noted, but only barely so, on the Psychopathic Deviation (Pp) Clinical Factor scales between the two subgroups. The high-range subgroup raw score mean was 15.2, (SD = 3.09) and the low-range subgroup raw score mean was 13.5 (SD = 3.07) (F (1,50) = 3.970, p = .052). The group with more ceremonies on average per Festival scored above the raw score mean of the group with a lower average number of ceremonies per Festival. The high attendance range group's raw score converted to a sten score of 6, while the low attendance range group's raw score converted to and average sten score of 5. Both groups are within the average range. The slightly higher sten score for the group with more ceremonies indicates the group has fewer inhibitions than the group with fewer ceremonies (IPAT, 1980).

Statistical significance was also noted on the Socialization (So) Second-Order Factor scale. The high-range group sten score mean was 4.3, (SD = 1.59) and the low-range group sten score mean was 5.2 (SD = 1.42) (F (1,50) = 4.503, p = .038). The low-range group scored slightly less than one sten score point above the sten score mean of the high-range group. The high-range group's sten score indicates the group is more hedonistic than the low-range group (IPAT, 1980).

Demographic Data on Preexisting Diagnoses

One of the main purposes of this research was to determine whether, after participation in syncretic church ceremonies, the research sample had measurable

indications towards clinical and emotional disorders, as described in the DSM-IV Manual (American Psychiatric Association, 1994). To evaluate the research data through analysis of the CAQ assessment scores, knowledge of prior existing mental, emotional or physical conditions and diagnoses was relevant to determine if the obtained results are skewed towards pathology. Three men and seven women reported preexisting diagnoses for clinical disorders. Five of the diagnosed participants, exclusively women, required medications. Several of the participants (n = 3) noted multiple preexisting complaints. One of the subgroup men had preexisting diagnoses for 4 disorders and 2 of the subgroup women had diagnoses for 2 disorders. Table 11 presents research sample reports of preexisting diagnoses.

The men and women (n = 10) who reported preexisting diagnoses participated in Santo Daime Church ceremonies to varying degrees. Table 12 describes the criteria on which all sample subgroups were assembled and illustrates participant demographic data concerning extent of sample participation in Santo Daime Church ceremonies.

t Test Analysis for Preexisting Diagnoses Within the Sample

This research sample subgroup of men and women with preexisting diagnoses were compared against the norm population of men and women, using Table A.1 for clinical factor traits and Table A.16 for personality traits (Norms For General Population, Men + Women) from the Manual (Krug et al. 1997, pp. 68 & 82). *t* Test statistical analysis of this sample subgroup Appendix K15 revealed raw scores variances on the Warmth (A), Intelligence (I), Emotional Stability (C), Sensitivity (I), Shrewdness (N), Self-sufficiency (Q2), and Tension (Q4) Personality Trait scales. Sten score variances

were noted on all the same Clinical Factor scales except for Boredom and Withdrawal (D7).

Table 11

Participant Self-Report of Preexisting Diagnoses

Condition	Men	Women	Men and Women
Depression	2	5	7
ADD	1	0	1
Anxiety Disorder	1	1	2
Bipolar Disorder	1	1	2
OCD	1	0	1
PTSD	0	1	1
Psychotic Episode	0	1	1
Medication Use	0	5	5

Table 12

Age and Syncretic Church Experience of Participants With Preexisting Conditions or Diagnoses

Variable	Men	Women	Men and Women
Age Range			
Low[a]	1	4	5
High[b]	2	3	5
Experience Range			
Low[c]	1	2	3
High[d]	2	5	7
Ceremony Attendance			
< 10	1	5	6
≥ 10	2	2	4
Festival Attendance			
1 – 2	2	2	4
> 2	1	5	6

[a]Men = < 50, Women = ≤ 50. [b]Men = ≥ 50, Women = ≥ 52.
[c]Men = ≤ 5 years, Women = ≤ 6 years. [d]Men = ≥ 6years, Women = ≥ 7 years.

The smaller size of this prediagnosed subgroup (n = 10) highlighted the difficulty with statistical analysis of small samples. Small samples do not have enough variety or spread in the range of scores. Notably, the sten scores are not as accurate or precise as the raw scores. Statistical significance was not found with a few scales even though the

variances between the norm and sample scores appeared significant at times. Had there been a larger sample group significance might have been easier to detect on those scales.

Second-Order Factor scales are also discussed when statistically significant differences were noted between the subgroup and norm. In the following discussion, raw scores were rounded to the nearest whole number to calculate the appropriate sten score variances were found to exist between the subgroups. Appendix K14 presents the statistical analysis of the raw scores of this subgroup's scoring data. Appendix K15 presents the statistical analysis of the sten scores of this subgroup's scoring data.

The Warmth (A) scale norm population raw score mean was 10.8 (*SD* = 3.25) (Krug et al., 1997). The research sample's raw score mean was significantly lower at 7.0 (*SD* = 2.42), for a net difference in the raw scores between the groups of -3.8. The research sample has a statistically significant lower raw scores mean, deviating from the norm population, and the variance is statistically significant (t (9) = -4.933, p = .001). The sten score of the norm is 5.5, while the sample norm is 3.2 (*SD* = 4.14), a statistically significant variance from the norm (t (9) = -6.406, p = .011). The variance indicates the sample subgroup is aloof and detached (IPAT, 1980). Karson and O'Dell (1976) noted the sample scores may also indicate individuals with a history of unsatisfying interpersonal relationships.

The Intelligence (B) scale norm population raw score mean was 7.0 (*SD* = 2.17) (Krug et al., 1997). The research sample's raw scores mean was significantly higher at 9.9 (*SD* = 1.60), for a net difference in the raw scores between the groups of 2.9. The research sample had a statistically significant lower raw score mean, and the variance was statistically significant (t (9) = 5.670, p = .001). The sten score of the norm population is

5.5, while the sample mean is 7.9 (*SD* = 1.60), a statistically significant variance from the norm (*t* (9) = 4.758, *p* = .001). The variance indicates the sample subgroup utilizes abstract-thinking more than the norm population and also is more intelligent than average (IPAT, 1980). Karson and O'Dell (1976) noted the sample scores may also indicate individuals with a history of unsatisfying interpersonal relationships. *As patients with depression or anxiety would be expected to score below average on this scale, there are indications the sample is not depressed* (Krug et al., 1997).

The research sample raw score mean on the Emotional Stability (C) scale study was 13.1 (*SD* = 3.84). The norm population's raw scores mean was significantly higher at 16.1 (*SD* = 4.07), for a net difference in the raw scores between the groups of -3.0 (Krug et al., 1997). The research sample has a statistically significant lower raw score mean and the variance is statistically significant (*t* (9) = -2.444, *p* = .037). The sample group sten score mean of 4.3 (*SD* = 1.49) also presents a statistically significant variance from the norm (*t* (9) = -2.539, *p* = .032). The difference indicates the sample subgroup is more emotionally expressive than the norm population (IPAT, 1980). The sample is probably less tolerant of stress than the norm (Krug et al., 1997).

On the Sensitivity (I) scale the research sample's raw score mean was 15.2 (*SD* = 2.44). The norm population's raw scores mean was significantly lower at 11.2 (*SD* = 4.05), for a net difference in the raw scores between the groups of -4.0. The research sample has a statistically significant lower raw score mean and the variance is statistically significant (*t* (9) = 5.209, *p* = .001). The sample group sten score mean of 7.9 (*SD* = 1.66) also presents a statistically significant variance from the norm (*t* (9) = 4.563,

p = .001). The difference indicates the sample subgroup is emotionally sensitive, perhaps more fragile than, and not as resilient as, the norm population (IPAT, 1980).

The Shrewdness (N) scale study sample raw score mean was 7.6 (*SD* = 2.95). The norm population's raw scores mean was significantly higher at 9.8 (*SD* = 2.94), for a net difference in the raw scores between the groups of -2.2 (Krug et al., 1997). The research sample has a statistically significant lower raw scores mean and the variance is statistically significant (t (9) = -2.357, p = .043). The sample group sten score mean of 4.3 (*SD* = 1.49) also presents a statistically significant variance from the norm (t (9) = -2.539, p = .032). The difference indicates the sample is less pretentious than the norm (IPAT, 1980) and less constrained by societal rules (Krug et al., 1997).

The norm population raw score mean on the Self-sufficiency (Q2) scale was 10.2 (*SD* = 3.55) (Krug et al., 1997). The research sample's raw scores mean was significantly higher at 15.5 (*SD* = 2.64), for a net difference in the raw scores between the groups of 5.3. The research sample has a statistically significant higher raw score mean and the variance is statistically significant (t (9) = 6.324, p = .001). The sten score of the norm is 5.5, while the sample mean is 8.4 (*SD* = 1.26), a statistically significant variance from the norm (t (9) = 7.250, p = <.001). The variance indicates the sample subgroup is far more self-sufficient and resourceful than the norm (IPAT, 1980). Krug et al. (1997) noted higher scores indicate individuals who prefer to work alone, and who are generally successfully in higher education.

Several combined trait scales means scores also were evaluated for possible pathological indications among the prediagnosed subgroup. The sample's higher mean scale sten score on Self-Sufficiency (Q2) was evaluated with their lower-than-mean sten

score on Warmth (A) 3.2, but normal Impulsivity (F) scale score, 5.6. That particular combination of scale sten score means, when also compared with the lower than necessary scale sten score means on Insecurity (O) of 6.3 and Tension (Q4) of 7.1, do not provide indications the sample's desire to spend time alone is pathological.

On Tension (Q4) the norm population raw score mean was 11.8 (*SD* = 4.85). The sample group's raw score mean was significantly higher at 15.3 (*SD* = 2.16), for a net difference in the raw scores between the groups of 3.5 (Krug et al., 1997). The difference is statistically significant (*t* (9) = 5.089, *p* = .001). The sample group sten score mean of 7.1 (*SD* = .88) also presents a statistically significant variance from the norm of 5.5 (*t* (9) = 5.775, *p* = <.001). The difference suggests the sample is somewhat unsteady and insecure, more so than the norm (IPAT, 1980).

On the Suicidal Depression (D2) scale there was a statistically significant variance between the sample raw scores mean of 1.5 (*SD* = 1.51) and the norm population raw score mean of 3.7 (*SD* = 4.71) (*t* (9) = -4.652, *p* = .001). However, the sample's sten scores mean of 5.2 was not statistically different from the norm mean of 5.5. The variance in the raw score means between the norm and sample indicates the sample is more contented than the norm (IPAT, 1980).

The research sample raw score mean on Guilt and Resentment (D6) was 4.0 (*SD* = 2.40) while the norm population raw score mean was 6.6 (*SD* = 5.20), a difference of 2.6 (Krug et al., 1997). The variance between the groups was statistically significant (*t* (9) = -3.355, *p* = .008). The sten score mean (5.5) for the norm was higher than the sample's sten scores mean of 4.7 (*SD* = 1.06) a significant variance from the norm

(t (9) = -2.388, p = .041). The variance indicates the sample subgroup is *less likely to feel guilty or ruminate about past actions* (Krug et al, 1997). This scale means score also indicates the *absence of depression, behavior disorders, alcoholism, and narcotics abuse* within the subgroup.

On Boredom and Withdrawal (D7) there was a statistically significant variance between the sample raw score mean of 3.3 (*SD* = 1.89) and norm population raw scores mean of 4.7 (*SD* = 3.78) (t (9) = -2.294, p = .047). The sample would be more likely to seek relationship with others (IPAT, 1980). However, the sample's sten scores mean of 5.4 was not statistically significant from the norm mean of 5.5. The sample's raw score mean on Psychasthenia (As) was 4.1 (*SD* = 2.73). The norm population's raw score mean was significantly higher at 6.8 (*SD* = 4.10), for a net difference in the raw scores between the groups of -2.7 (Krug et al., 1997). The norm population's higher raw score mean was statistically significant (t (9) = -3.143, p = .012). The sten score of the norm is 5.5, while the sample mean is 4.2 (*SD* = 1.40), a statistically significant variance from the norm (t (9) = -2.940, p = <.016). The variance indicates the sample subgroup is far less compulsive in its behaviors than the norm (IPAT, 1980). The sample's lower sten score mean indicates a lack of tendencies towards obsessive-compulsive neurosis or substance abuse (Krug et al., 1997).

The balance of the Clinical Factor scales did not reveal statistically significant variances between the norm and this sample subgroup. The raw and sten score means reveal a subgroup that is free from clinical disorders, behavioral disorders and tendencies towards chemical dependence. Despite the fact that this subset of individuals (n = 10) had preexisting diagnoses for clinical disorders, they exhibited no signs of psychopathology.

Four Second-Order Factor scales indicated the research sample had a statistically significant variance when compared to the norm population. The relevant scales included Extraversion (Ex), Anxiety (Ax), Tough Poise (Ct), and Independence (In). The sample scores on the remaining factor scales did not vary significantly from the norm. The Second-Order Factor sten score scale means for the previously diagnosed subgroup are described in Appendix K16. The sten score mean for the norm is 5.5.

A statistically significant sten score variance for the sample was demonstrated on Extraversion (Ex) (t (9) = -3.329, p = .009). The sample's sten score mean was 4.1 (SD = 1.37) and the norm sten score mean was 5.5. The sten scores comparison between the sample and norm discloses the sample is significantly more oriented toward their inner experience. Thoughts and feelings have more significance for the research sample than the norm (IPAT, 1980).

Second-Order Factor Anxiety (Ax) was the second scale demonstrating a statistically significant sten score variance for the sample (t (9) = 3.115, p = .012). The sample's sten score mean for this scale 6.5 (SD = 1.05) suggests the sample is more anxious than the norm (IPAT, 1980). The Tough Poise (Ct) scale sten score mean for the sample was 4.3 (SD = 1.34) which indicated a statistically significant variance from the norm (t (9) = -2.869, p = .019). The sten score comparison between the sample group and norm suggests the sample is significantly more emotionally responsive and more easily swayed by their feelings than the norm (Krug et al., 1997). The final Second-Order Factor scale in which the sample scored a significantly higher sten scores mean was on Independence (In) (t (9) = 3.227, p = .010). The sample sten score mean was 7.3

(*SD* = 1.78), demonstrating this subgroup is more self-reliant than the norm, that is, they can take care of themselves (IPAT, 1980).

t Test Analysis of Sample With Previous Psychotropic Prescriptions

A small subset of the sample (*n* = 5) had medications prescribed for their clinical disorders. None of this subset indicated they currently were using any of the medications, which included antipsychotics, antidepressants, Prozac, and lithium. This research sample subset with preexisting prescriptions for psychotropic medications was compared only against the norm population of women, using Table 2.1 (Norms For Normal Adult Women) from the Manual (Krug et al., 1997, pg. 8). The small size of this subgroup (*n* = 5) highlighted the difficulty with statistical analysis of such a small sample which does not have enough variety or spread in the range of scores. Notably, the sten scores are not as accurate or precise as the raw scores. Statistical significance was not found with several scales even though the variances between the norm and sample scores appeared significant at times. No statistically significant variance was found on any Second-Order Factor scale score means. Had there been a larger sample group, significance might have been easier to detect and the raw and sten scores might have been in concert with each other.

t Test statistical analysis of this sample subgroup revealed raw and sten score mean variances on the Intelligence (B), Sensitivity (I), Self-sufficiency (Q2), and Tension (Q4) Personality Trait scales. The Insecurity (O), Impulsivity (F), and Imagination (M) scales only revealed a significant variance on the raw score means. Sten scale score mean variances also were noted on one additional Personality Trait scale, Warmth (A).

Statistically significant variances were noted on raw scale score means on four Clinical Factor scales but not on the sten score means: Suicidal Depression (D2), Guilt and Resentment (D6), Boredom and Withdrawal (D7), and Psychasthenia (As).

Second-Order Factor scales are also discussed when statistically significant differences were noted between this small subgroup (n = 5), composed exclusively of sample women, and the norm. In the following discussion, when variances were found to exist between the sample and norm raw scores, the scores were rounded to the nearest whole number to calculate the appropriate sten score. Appendix K17 presents the statistical analysis of the raw scores of this subgroup's scoring data. Appendix K18 presents the statistical analysis of the sten scores of this subgroup's scoring data. Appendix (K19) presents Second-Order Factor Scale sten scores for the previously medicated subgroup. The sten score mean for the norm is 5.5.

The Warmth (A) scales results indicated no statistically significant variance between the sample raw score mean of 7.4 (SD = 1.67) and norm population raw scores mean of 8.8 (SD = 2.34) (t (4) = -1.924, p = .127). However, the sample's sten score mean of 3.2 (SD = .84) was statistically significant from the norm mean of 5.5 (t (4) = -6.147, p = .004). Based on the sten scores variance the sample is more aloof and detached than the norm (IPAT, 1980). People who are more oriented to ideas and things than to people usually score considerably below average on this scale (Krug et al., 1997). Occupational examples of low scorers on this scale would be research scientists, artists, and Antarctic explorers.

On Intelligence (B) the sample raw score mean was 10.0 (SD = 1.56) and the norm population raw scores mean was 6.3 (SD = 1.49), a statistically significant variance

(t (4) = 4.766, p = .009) (Krug et al., 1997). The research sample's sten scores mean also was higher in a statistically significant manner than the norm, at 8.0 (SD = 1.59) (t (4) = 3.536, p = .024). The variance indicates the *sample subgroup is considerably more intelligent than average*.

On the Impulsivity (F) Personality trait scale there was a statistically significant variance between the sample raw scores mean of 15.0 (SD = 4.06) and norm population raw scores mean of 8.4 (SD = 3.09) (t (4) = 3.628, p = .022). However, the sample's sten scores mean of 8.2 (SD = 1.92) was not **s**tatistically significant from the norm mean (t (4) = .814, p = .481). Based on the raw score variance, however, the sample would be *happier than the norm population* (IPAT, 1980).

Sensitivity (I) is another trait scale which revealed statistically significant variances between the sample raw score mean of 16.0 (SD = 1.58) and norm population raw scores mean of 9.6 (SD = 2.73) (t (4) = 8.994, p = .001). The sample's sten scores mean of 8.4 (SD = 1.14) also was statistically significant from the norm mean of 5.5 (t (4) = 5.687, p = .005). Based on the raw and sten score variances the sample is significantly more sensitive and fragile, emotionally, than the norm (IPAT, 1980). The sample would also be expected to be more dependent and insecure than the norm (Krug et al., 1997).

The sample raw score mean on Imagination (M) was 14.6 (SD = 2.07) while statistically, the norm population's raw score mean was significantly lower at 9.6 (SD = 2.81) (t (4) = 5.413, p = .006). The net difference in raw scores between the groups was 5.0 (Krug et al., 1997). The sten score of the norm is 5.5, while the sample mean is 6.6 (SD = 1.14); not a statistically significant variance from the norm (t (4) = 2.157,

p = .097). Based on raw score variances the sample subgroup is expected to be more imaginative than the norm (IPAT, 1980).

The Insecurity (O) scale sample raw score mean for the sample was 12.4 (*SD* = 2.70) while the norm population raw score mean was 8.2 (*SD* = 3.40) and there are statistically significant variances between the groups (t (4) = 3.451, p = .026). The sample's sten scores mean of 6.8 (*SD* = 1.10) was not revealed to be statistically significant from the norm mean (t (4) = 2.654, p = .057). Based on the raw score variances the sample would likely feel less secure facing life's experiences insecurity more than the norm (IPAT, 1980).

On the Self-sufficiency (Q2) scale the research sample and norm population demonstrated raw and sten score means that were statistically significant. The research sample's raw score mean was 14.6 (*SD* = 2.07) and norm population raw score mean was 8.4 (*SD* = 2.88). The difference between the raw score mean of the norm group and the research sample was statistically significant (t (4) = 6.729, p = .003). The sample's sten scores mean of 8.0 (*SD* = 1.22) also was statistically significant from the norm mean of 5.5 (t (4) = 4.564, p = .010). Based on the raw and sten scores variances the sample is significantly more resourceful and self-sufficient than the norm (IPAT, 1980).

Several combined trait scale mean scores also were evaluated for possible pathological indications within the premedicated subgroup. This sample's Self-Sufficiency (Q2) score was evaluated together with their lower-than-mean sten score on Warmth (A) of 3.2 and above-the-mean scale sten score on Impulsivity (F) of 8.2. Those scores alone are not indicators of pathological withdrawal within the research sample. The research sample's 6.8 sten score mean on Insecurity (O) was next compared with the

sten score mean of 7.2 on Tension (Q4). Those scores combined with an elevated 8.0 sten score mean on the Self-Sufficiency (Q2) scale do not appear to indicate withdrawal from others that is pathological.

The research sample's raw score means on the Suicidal Depression (D2) scale was 1.8 (*SD* = 1.48) while the norm population raw score mean was 4.4 (*SD* = 5.07). There were statistically significant variances between the groups (*t* (4) = -3.874, *p* = .018). The sample's sten score mean of 5.6 (*SD* = 1.14) was not statistically significant from the norm mean of 5.5 (*t* (4) = .196, *p* = .854). Based on the raw scores variance, however, the *sample would be more contented with life than the norm* (IPAT, 1980).

The norm population's sample raw score mean on Guilt and Resentment (D6) was 7.7 (*SD* = 5.71) while the sample group's raw score mean was significantly lower at 3.2 (*SD* = 2.39) (*t* (4) = -4.196, *p* = .014). The net difference in raw scores between the groups was 4.5 (Krug et al., 1997). The sten score of the norm is 5.5, while the sample mean is 4.4 (*SD* = 1.14); not a statistically significant variance from the norm (*t* (4) = -2.157, *p* = .097). Based on raw scores variances the sample subgroup is expected to feel less regret over past actions in their lives (IPAT, 1980).

The Boredom and Withdrawal (D7) scale raw scores means also revealed a statistically significant variance between the sample group and norm population (*t* (4) = -3.533, *p* = .024). The sample's raw score mean was 2.8 (*SD* = 1.30) and the norm population's raw score mean was 4.9 (*SD* = 3.73). However, the sample's sten score mean of 5.2 (*SD* = 0.45) was not statistically significant from the norm mean of 5.5.

Based on raw scores variances the sample subgroup is expected to seek relationship with others more than the norm (IPAT, 1980).

On one final clinical scale, a statistically significant raw score variance was demonstrated on Psychasthenia (As). The sample's raw score mean was 3.2 (*SD* = 3.11) and the norm population raw scores mean was 7.1 (*SD* = 4.08) (t (4) = -2.800, p = .049). However, the sten scores comparison between the sample group of 3.8 (*SD* = 1.64) and norm did not reveal a significant variance. Based on the raw scores variance between groups, the sample would likely be less compulsive in their behaviors than the norm (IPAT, 1980). No Second-Order Factor scale score means for the sample indicated statistically significant variances from the norm.

Summary

Statistical analysis of the research sample compared to the norm population demonstrates the sample (N = 52) had no tendencies towards either clinical or behavior disorders. Evaluation of scale score means demonstrated no tendencies toward chemical dependence. Sample subgroups compared against each other revealed variances in the statistical analyses but there was no cause for concern regarding possible psychopathology. Statistical analysis of small subgroups based on preexisting diagnoses and premedicated sample members revealed statistical variances from the norm on some scales, but no variances were significant enough for clinical concern. The results are discussed and fully explored in Chapter 5: Discussion.

CHAPTER 5: DISCUSSION

Introduction

This dissertation examined potential clinical or personality disorders and chemical dependence issues that the research sample may have experienced as a result of their participation in syncretic religious ceremonies. Participants had traveled independently to the remote rainforests of the Amazon Basin in Brazil, or to urban Amsterdam, Holland, where they took part in the practices of a Brazilian syncretic religion: the Santo Daime Church. During Church ceremonies, participants consumed a psychoactive tea called Daime. Daime is produced by boiling two rainforest plants in water. The tea contains psychoactive components: DMT and a MAO inhibitor. During the ceremonies, participants had a wide range of internal experiences related to spiritual and religious teachings and visions.

The participants completed the Clinical Analysis Questionnaire (CAQ) (IPAT, 1978). The results were statistically analyzed to determine whether the sample had detectable tendencies towards clinical or personality disorders, (as defined by the DSM-IV) or chemical dependence tendencies. Personality characteristics, along with personality or clinical disorders, are measured on the primary Personality Trait scales of the CAQ. Tendencies towards chemical dependence are measured on the primary Clinical Factor trait scales of the CAQ. The CAQ uses a holistic approach in its evaluation of the personality through factor analysis of the correlations among the primary trait scale scores. Factor analysis provides a well-rounded perspective of the personality. The summation of factor analysis is demonstrated in the Second-Order Factor scales scores.

The CAQ scale scores of the research sample were initially compared with the normative population. There were no statistically significant variances between the norm population and the research sample to indicate psychopathology or tendencies toward chemical dependence within the research sample. The research sample was next divided into subgroups and the subgroups were compared with each other. While there were statistically significant variances between the subgroups, none of the variances indicated either psychopathology or tendencies toward chemical dependence within the individual subgroups.

Discussion

Sample Personality Evaluation

The Personality Trait scales results for the research sample are demonstrated in Appendix I1. Personality traits of the sample group are profiled in Appendix I1, using lines from one personality trait sten scale score to the next personality trait scale sten score. The profile provides a graphic portrayal of the research sample's personality characteristics in comparison with the norm population. The overall profile reveals the sample has normal and healthy personalities. The sten score is 5.5 for the norm population on all Personality Trait scales.

Clinical Factor scale results for the research sample are revealed in Appendix I2. Lines were drawn between the clinical scales to reveal a clinically-based profile of the sample. The profile is used to graphically depict the research sample's tendencies toward possible clinical disorders or chemical dependence compared to that of the norm population. The profile portrays a research sample without clinical disorders as measured

by the CAQ. The sten score is 5.5 for the norm population on all Clinical Factor trait scales.

Second-Order Factor scales are in Appendix I3. Second-Order Factors strive to provide a holistic and more complete perspective of the personality than do the individual personality and clinical trait scales. Lines to and from each scale graphically demonstrate the research sample's personality characteristics on a continuum, in contrast to the norm population. The Second-Order profile portrays a psychologically and emotionally healthy research sample. The sten score of 5.5 is referenced as the norm on all Second-Order Factor scales.

The average in each of Appendixes I1, I2, and I3 is demonstrated by the range of 4.5 to 6.5. As the sten scores deviate from the normative midpoint of 5.5, tendencies toward one extreme or the other begin to emerge. The extremes generally signal health at one end and psychopathology at the other end of the scale being measured.

Personality Trait Scales Results

Appendix I1 data graphically compares the norm population and research sample profiles through analysis of Personality Trait scales sten scores. On 12 of 16 trait scales the scale score means of the research sample demonstrated statistically significant variances from the norm population. On several trait scales the research sample is clearly outside the norm. However, none of the research sample's personality trait scales scores are within the ranges of 1—3 or 8—10, the ranges considered to be the most significant indicators of pathology on most of the CAQ trait scales (Krug et al., 1997).

The research sample was indicated to be more aloof than the norm population on one scale score but interestingly, there were contradictions indicated on several other scales. Those scales indicated the sample was gregarious, and sought out relationships and interpersonal contact with others. The research sample was also demonstrated to have higher levels of general and abstract thinking abilities when contrasted with the norm population. The research sample was also indicated to tolerate stress and remain focused on goals more than average.

Members of the research sample were significantly more dominant and competitive, as well as being quite lively and gregarious, compared to the norm population. As might be expected from the type of activity the research examined (participation in religious ceremonies and drinking a psychoactive tea), the sample does not conform well to tradition and was significantly less likely to conform to tradition than the norm population. The research sample was appreciably more perceptive and sensitive and above average in imaginative abilities.

Scores below the norm population revealed a research sample that preferred an uncomplicated life not constrained by societal norms. The research sample was creative and innovative, less traditional than the norm population. The research sample was also more resourceful, able to take care of themselves and had more self discipline and control than the norm population. None of the personality trait variances indicated personality disorders within the research sample.

Clinical Factor Trait Scales Results

The research sample comprises a group one would expect to have relatively few somatic complaints. The sample would not be likely to fake illness to avoid work, nor

would psychosomatic complaints and illnesses likely manifest within the sample. On the clinical factor scales the sample was noted to be more contented with life than the norm. That finding reinforced an earlier similar result on the personality trait scales. There were clear indicators that the research sample is not depressed and would be unlikely to ruminate over past actions. None of the clinical factor scales scores indicated any form of psychopathology, as measured by the CAQ, within the research sample.

Second-Order Factor Trait Scales Results

Second-Order traits provide a more complete image of the individual personality. They assist the clinician by confirming impressions gleaned from the primary personality and clinical trait scales. In the Second-Order factors the sample was indicated to be more aware of their thoughts and feelings than the norm. The sample also was more emotionally responsive and self-reliant, and felt less restraint in their daily lives than the norm. The research sample is more hedonistic than the norm, but happier, and the Second-Order Factors confirmed the primary trait findings; there were no indications the sample was depressed. Previous impressions that the sample was significantly less traditional and not likely to conform to cultural customs were confirmed in the Second-Order Factors as well.

Indications of Chemical Dependence

Nine of the CAQ clinical factor scales evaluate for chemical dependence or abuse. There were no indications the research sample, as a whole, had tendencies towards alcoholism, drug abuse or addiction on the individual scale scores. *No indications of*

alcoholism, drug abuse or addiction were found either, upon examination of combinations of primary clinical trait scales. Sample men were assessed separately on two clinical factor trait scales and sample women were assessed separately on one clinical factor trait scale, but *no indications of chemical abuse or addiction were found with individual genders*.

Subgroup Analysis

Gender Based Analysis

The subgroup comparison based on gender indicated statistically significant variances between research sample men and women. The women were more sensitive and tender-minded than the sample men. While the men were noted to be emotionally more responsive than the women, women were found to have more emotional resources than the men.

Age Based Analysis

When subgroups were compared based on age, there were more significant variances within the research sample. The older sample participants were more emotional and more easily upset than their younger counterparts. The younger group was bolder, more adventurous, and less threat-sensitive than the older group. The younger group is likely more secure, self-satisfied, and composed than the older group. The younger group also appeared to feel less concern with life issues and problems than the older subgroup.

Age-based comparison of the older and younger subgroups revealed additional differences between the groups on the Second-Order factor scales. The older subgroup

was significantly more oriented toward inner thoughts and feelings than their younger counterparts. The younger subgroup felt less frustration and had more significant tendencies towards autonomy than the older subgroup. Neither the older nor younger subgroup was shown to have any greater tendencies than the other toward alcoholism, narcotic abuse or addiction, personality disorders, or psychopathologies.

Participation Based Comparisons

When subgroups based on years of participation in Santo Daime ceremonies were evaluated, there were few significant variances between them. The group with fewer years of participation was indicated to be less likely to make somatic complaints, and they were more contented with life than the more-years group. Comparison of the more-years and fewer-years subgroups did not reveal any enhanced tendencies toward chemical dependence or psychopathology. *Both subgroups were well within the average range for healthy personalities.*

Comparison Based on the Number of Festivals

Based on the number of Festivals attended, statistical analysis indicated few significant variances between the subgroups. The more-experience subgroup would likely be less reasonable and more irritable and difficult to deal with than their less experienced counterparts. Scale scores suggested the less experienced group has more well-integrated personalities. This means the more-experience subgroup does not fit into societal traditions as well as the less-experience subgroup. Neither of the subgroups' scale scores indicated enhanced tendencies towards chemical dependence or psychopathology.

Comparison Based on Average Number of Ceremonies

There were few indications of statistically significant variances between the subgroups based on average number of ceremonies attended. The more-ceremonies group was indicated to have fewer inhibitions than the less experienced subgroup, and the more-ceremonies group was more hedonistic. Comparisons of these two subgroups also failed to demonstrate that either subgroup had more significant tendencies toward either chemical dependence or psychopathology.

Subgroup Based on Preexisting Diagnoses

One important subgroup (n = 10) was isolated from the research sample and separately evaluated for indications of psychopathology and chemical dependence. The subgroup with preexisting diagnoses would normally be expected to demonstrate a predisposition toward psychopathology or elevated clinical factor scale scores on the CAQ. This is a subset of individuals who were evaluated by a clinician and diagnosed with a clinical disorder. While, at worst, the subgroup demonstrated indications of a personality more sensitive and fragile than the norm, there were no current indications of clinical psychopathology.

The preexisting diagnoses subgroup's personality and clinical traits were consistent with the entire research sample. The aloofness trend previously demonstrated in the research sample was confirmed in the preexisting diagnoses subgroup. In concert with the research sample, the preexisting diagnoses subgroup also scored high in general abilities and intelligence, and while they were more emotionally expressive and sensitive, the subgroup's scores also indicated they were more fragile than the norm. A more fragile

personality would be expected from a group with preexisting diagnoses for clinical disorders. This subgroup also continued the “less-constrained-by-societal-traditions” trend that was demonstrated within the research sample.

Another research sample trend, resourcefulness, was confirmed by this subgroup’s scale scores but there were no indications they had pathological tendencies towards isolation. There were suggestions the subgroup was less steady and more insecure than the norm; as might be expected with preexisting clinical diagnoses that included anxiety, depression, and psychosis. However, they also continued the research sample’s “less-likely-to-feel-guilty-about-past-actions” trend and they were less compulsive than the norm population. The scale scores for the preexisting diagnoses subgroup clearly supported an important conclusion: drinking Daime within the context of the Santo Daime Church ceremonies was not demonstrated to be harmful to either their emotional or psychological health or well-being, even for individuals with preexisting clinical diagnoses. The findings within this subgroup also would seem to pose questions regarding whether there are sufficient controls for reliability and validity of the CAQ.

Prior Research Findings Confirmed

Psychoactive compounds from plants have unique qualities producing uncharacteristic subjective states and striking alterations in self-awareness in humans (Hoffer & Osmond, 1967). While psychoactive plants rarely cause mental confusion, loss of memory or disorientation, such plants can stimulate humans to see themselves and the world in a new light. Indigenous, or shamanic based native cultures, have typically worked with medicine plants in a ritual setting, where the plants are respected for their

knowledge and healing powers (McKenna et al., 1986). There are widely publicized reports through various branches of the social sciences, such as anthropology and ethnobotany, that human-kind has used psychoactive plants prehistorically for psychospiritual purposes (Schultes & Hoffmann, 1992). Psychospiritual work with psychoactive plants continues in the present day. Walsh (1982) reported psychoactive compounds can be authentic tools for personal growth, within certain contexts. Meanwhile, Bullis (1990) argued humanity's spiritual quest can be safely enhanced by the inclusion of psychoactive plants, if contained within a managed, ritual setting. Limited scientific research with psychoactive cactus (Grinspoon & Baklar, 1986) and Africa's iboga plant (De Rienzo & Beal, 1997) confirms that dynamic possibilities are available through use of medicine plants to modify destructive patterns of addiction.

In the Amazon Basin of South America one particular psychoactive mixture, a "tea" known as ayahuasca, hoasca, or yage, has been used since prehistoric times (Ott, 1994). Ayahuasca was utilized in religious and spiritual ceremonies throughout the Amazon Basin long before the colonization of South America by Europeans (Dobkin de Rios, 1972). Under other names, vegetal and Daime, ayahuasca is consumed in ritualized settings in rural and urban South America (Callaway & Grob, 1998) and Central America during syncretic church rituals (Ott, 1996). While Luna and White (2000) noted frequent reports of powerful spiritual visions in Santo Daime ceremonies there have been no research findings to indicate Daime is harmful when used in a ritualized setting.

In 1987, the Brazilian government investigated the psychospiritual and religious usage of Santo Daime, and the tea was legally sanctioned by Brazil for religious purposes as a result of the investigation (Polari de Alverga, 1999). Further scientific research was

conducted during 1993 with members of another syncretic Brazilian Church (the Uniao do Vegetal [UDV]) (Grob et al., 1996). In the Grob et al (1993) study, the researchers assessed 15 long-term members of the UDV to determine whether vegetal (ayahuasca) is harmful when consumed in the ceremonial context of the church. The study's experimental volunteers were matched with a control group of volunteers who had no experience with the UDV sacrament (Grob et al., 1996). Standardized and cross-cultural assessments were used to determine psychological and personality functioning, pre- and post vegetal session. Additionally, research physicians noted increases in blood plasma, endocrine hormone secretions, respiration, heart rate, and blood pressure. All levels returned to normal base levels within 6 hours after consumption (Callaway et al., 1996). The Callaway et al. (1996) research revealed no signs of physical or psychological deterioration, decline in brain functioning, or any other undesirable neurological or psychiatric conditions, even after 10 years of consuming the psychoactive vegetal among the UDV research sample. The researchers concluded regular use of vegetal is not harmful.

Interesting findings were noted regarding members of the experimental UDV group having preexisting diagnoses of major depressive, phobic anxiety, and alcohol abuse disorders including binge drinking and violent antisocial behaviors (Grob et al., 1996). Subsequent to commencement of regular attendance at UDV ceremonies none of the group reported recurrences of any of the disorders. The experimental group noted that radical impacts and profound changes had occurred in their lives after they began participating in UDV ceremonies and drinking vegetal.

The present research confirms earlier Brazilian UDV study findings. Participants in the Santo Daime ceremonies, in this research, were not found to have statistically significant Personality Trait or Clinical Factor scale scores that would indicate tendencies towards chemical dependence or addiction. Nineteen percent of the research sample (n = 10) had preexisting Axis I or Axis II conditions and diagnoses, including mood and anxiety disorders and even a severe psychotic episode. However, there were no statistically significant results to indicate current disorders or conditions within the research sample as measured by the CAQ. The lack of statistically significant findings poses issues of reliability and validity for the CAQ that are beyond the scope of this research. The results from this research study are also consistent with Quinlan (2001) who concluded that all of her participants had been cured from diseased states through participation in Daime ceremonies. Finally, the Santo Daime research sample was noted to be well-above average in intelligence and general abilities after participation in the Brazilian ceremonies. There were no indications *the research sample's ability to function in life has been harmed by their participation* in Santo Daime ceremonies.

Research Hypotheses

The research began with two hypotheses. The first hypothesis stated: if ingesting Santo Daime, an allegedly dangerous drug, is harmful to a human population, then the research sample will exhibit indications of either Axis I Clinical Disorders or Axis II Personality Disorders. Initial statistical analyses of the research sample's scores on the CAQ, in comparison with the norm population, failed to suggest any indications of psychopathology for either clinical disorders or personality disorders. The research

sample was then divided into several different subgroups and the subgroup scores were statistically analyzed. No statistically significant indications of psychopathology were noted within the subgroups. Finally, a subgroup that had been previously diagnosed with clinical disorders was statistically analyzed and compared with the norm population. Again, there were no suggestions that even the prediagnosed subgroup had tendencies toward Axis I clinical disorders or Axis II personality disorders. Thus, it has not been shown that drinking Daime is harmful to a human population. Nor has it been demonstrated that drinking Daime causes emotional or psychological harm for individuals with certain preexisting clinical disorders, including depression, schizophrenia, anxiety, and paranoia.

The second research hypothesis stated if the research sample was participating in Santo Daime ceremonies, and consuming a psychoactive compound out of addictive cravings, then a standardized psychological instrument designed for the purpose would reveal tendencies towards chemical dependence or addiction. The CAQ has 12 clinical scales, 9 of which measure for tendencies toward chemical dependence. The scales measure for alcoholism, narcotics abuse, and addiction. The entire sample was evaluated and then male and females were separately evaluated for chemical dependence tendencies. Statistical analysis of the CAQ scales failed to note any significant tendencies within the sample or individual genders towards abuse or addiction. Therefore, it has not been demonstrated that research sample participation in Santo Daime ceremonies was the result of addictive cravings.

Limitations to Application of Study Results

From the outset, it was recognized that a major limitation to generalizing the research findings would be due to an inability to determine whether any statistically significant results were the result of participating in Santo Daime ceremonies. As with the Brazilian study reported by Grob et al. (1996), it is difficult to establish a causal connection between either positively or negatively elevated scale scores and ceremonial Santo Daime use because there was no pre- postceremonial administration of the CAQ assessment. However, based on the Personality Trait, Clinical Factor, and Second-Order Factor trait scale scores, the obtained results in this research failed to reveal any elevated scale scores significant enough to raise psychopathological or chemical dependence issues after consumption of the tea by the research sample.

Compensating for the quantity and quality of Daime consumed is difficult. No controls were created in which the research sample received specifically measured amounts of the psychoactive tea. As a result, the researcher could not compare one subgroup, who received large servings of Daime, with another subgroup who received smaller servings of Daime. Because the tea is produced in the rainforest, the researcher also does not know if there are production controls in place to monitor strength of the tea, nor was there a way to monitor the ratio of DMT to MAO inhibitor in each serving of Daime. The researcher had no information regarding which years or Festivals each individual participant attended. Each year's Festival likely had completely different batches of Daime, made from different plant sources. Consequently, some members of the research sample probably consumed disparate quantities and qualities of Daime and

psychoactive compounds when compared to the quality and quantity of Daime received by other members of the sample.

Unlike the Brazilian UDV study, no Santo Daime control group was included that traveled to Brazil or Holland and participated in the ceremonies along with the research sample without drinking the sacrament. A control group could have completed the CAQ, and control group scores could have been compared against the research sample. As an alternative, the CAQ norm population served as a control group to compare to the research sample.

Another limitation to generalizing the findings of this study relates to the composition of the research sample. No control group was available to participate in Santo Daime ceremonies solely in the urban setting of Amsterdam, Holland. That was one of the intended yet abandoned criteria from the initial proposal. Consequently, there is no control for the exotic location (Amazon Rainforest) where 96% of the research sample participated in Santo Daime Church ceremonies.

It also is difficult to determine whether the scale scores of the research sample are the result of any of their syncretic ritual activities. Other intervening events may have occurred that could have been the actual cause of the research sample's elevated scale scores, regardless of the positive or negative results. The obtained outcome could have resulted from events the sample encountered during travel to the remote Amazon Rainforest, on a small windy waterway, or through enduring various tropical parasites and illnesses. The outcome also may have been the result of encounters with wild rainforest creatures, or any number of other encountered hardships and imponderable variables the research sample experienced.

Variations between the norm and research sample's mean scale scores may be explained by participants' preexisting conditions and diagnoses. Table 11 depicts data for 10 men and women, participants in the research; nearly 19% of the total research sample. Three men and 7 women reported one or more diagnoses for a clinical or emotional disorder or condition. Treating physicians for the men did not prescribe psychotropic medications to treat the conditions. Five of the 7 women reported their doctors did prescribe medications to treat their disorders. There were no indications psychotropic medication was in current use when the sample participated in Santo Daime ceremonies or participated in this research. All diagnoses were prior to participants' involvement in the Santo Daime Church.

One woman noted having experienced a short-term recurrence of her depressive condition in 2004. She also noted her depression was in remission when she participated in this research. There was no indication how long it had been since her last visit to Brazil, nor whether there was any relationship between her last Santo Daime attendance and the recurrence.

Most of the reported preexisting disorders are measured by the CAQ clinical trait scales. It is interesting to note, even with 19% of the population having preexisting diagnoses, there were no statistically significant findings of personality disorders or clinical disorders. This poses questions regarding the reliability and validity measures of the CAQ. There were no significant findings of chemical dependence, either. Without further evaluation, beyond the scope of the present research, it is not possible to determine the extent of, or whether, the preexisting conditions may have skewed the results towards other than average personalities.

The method of selection of the research sample was another limitation. Fowler (1993) asserted the size of the sample is usually unimportant, as larger samples generally provide results which are neither more credible nor representative of the population being sampled. However, sample size has been shown to affect the sampling error estimates, especially where more than 10% of the population is selected as the sample. With the present research, there is no way to account for this issue by the very nature of the small number of candidates who were willing to participate in the project.

When inquiring about personal behaviors, Sudman and Bradburn (1991) noted people may over-report the positive and minimize the negative. The research sample was encouraged to be honest with their responses. Realistically, there was no practical way to confirm or deny whether assessment responses were truthful or accurately reflected the participants' responses. However, the CAQ assessment contains a built-in validity scale to reliably assure the responses are valid and the personality assessment is accurate (Krug et al., 1997). Eighteen assessments in this research were adjusted for validity during hand-scoring.

The assessment packet took between 2 and 3 hours to complete, based on how extensively the Demographic Questionnaires (Appendix F & G) were answered. Knowing in advance the necessary time commitment may have deterred some research candidates from continuing or even beginning participation in the research project. A different, or larger, research sample could have produced significantly different results.

Cultural bias or participant sophistication also may have limited or skewed the research results. Even with a sample composed of English-literate respondents, the individual participants may not have shared the same contextual understanding of the

assessments, shared equal psychological sophistication, or even been equally self-aware. On the other hand, the research sample had several common denominators: they had knowledge of where to travel for Santo Daime ceremonies, the desire, and financial wherewithal to do so. The group was well-educated: 12% of the sample had a Bachelor's Degree, 44% had a Master's Degree, and 6% had a Doctoral Degree or professional degree. The research sample also was above average in intelligence and general abilities.

All these and other unknown factors, not addressed, could have skewed the obtained results, or limited possible conclusions about the research. The foregoing limitations could all be causes for variances of the research sample's scale mean scores from those of the norm population. Consequently, there can be no absolute certainty that drinking Santo Daime is the cause of the obtained results, whether for the better or for the worse. However, statistical analysis of the Personality Trait, Clinical Factor, and Second-Order Factor scales mean scores did not reveal significantly elevated scores on any of the trait scales to indicate the research sample has clinical or emotional disorders, or tendencies toward chemical dependence.

Limitations to Generalizing the Results

Grob et al. (1996) urged caution regarding the Brazilian UDV study, as the obtained results in that study were preliminary. Results are preliminary with this research as well. The research sample was not found to have tendencies towards chemical dependence, or indications of psychopathology. But the results of this research are limited to a picture of a particular sample, frozen in time. Any number of variables could have produced different results. Perhaps if the instrument had been taken a year later or

earlier (after another Festival experience or in an urban setting) or had there been a different research sample; these variables might have produced significantly different results. To say the least, it is difficult to establish the exact amount and molecular mechanism of Daime that is producing the results reported both in the Brazilian study and in this research.

Transpersonal Implications of the Study Results

Having been to Brazil and taken part in the ceremonies, the research sample was not found to have indications of behavior or clinical disorders, or chemical dependence. There were no findings to support any proposition that drinking Daime and participating in the ceremonies caused harm, even to people who had preexisting clinical diagnoses. The sample had a wide range of occupations and apparently participates fully in ordinary life outside Daime ceremonies. The participants had relationships, advanced academic degrees, professional licenses, jobs and businesses, and owned their own homes. One implication from the research data and statistical analyses was that people are able to participate in entheogen-based ceremonies in which consciousness is altered and continue to live a normal life and be productive citizens after the ceremony. As a culture, there is *no need to fear altered states of consciousness: altered states can be useful and beneficial*.

Santo Daime ceremonies involve drinking a powerful psychoactive tea, capable of causing significant alteration in human consciousness. During ceremonies, participants reported contact with higher levels of consciousness and even contact with other forms of intelligence. A significant portion of the sample (n = 10), or 19% had a preexisting

clinical diagnosis. A smaller subset (n = 5) had prescriptions for psychotropic medications. Generally, one would expect a person with a clinical diagnosis, who participated in Santo Daime ceremonies, to be the most vulnerable to psychological deterioration. Yet, the research results indicated there was no harm to the participants, even those with preexisting diagnoses.

Results from this research matched the UDV study results; those research participants also reported they experienced remission from psychopathologies, addictive, and antisocial behaviors. Krug et al. (1997) noted age can be a mediating factor with clinical disorders. As a person matures during the aging process, psychopathology has been noted to decline with improvements in behavior control. There also is the possibility that reliability and validity controls within the CAQ are insufficient. However, there is another possibility: there are many ways in which we can be healed. Emotional and psychological health and well-being may result, not only from pills and surgery, but also from our ability to reconnect with higher forces, forces beyond normal waking consciousness. Whether those healing forces emanate from deep levels of our own subconscious or from realms of shamanic experience (other objective realities) is not important. Whether emotional and psychological healing manifests through meditation, mainstream therapeutic interventions, or altered states invoked in a psychoactive plant ceremony is not important. The importance is in reconnecting with an essential part of the human psyche; reconnecting with a power and intelligence greater than our finite selves.

A clear transpersonal implication is that there is “something else at work” in the realm of the Santo Daime and its ceremonies. The implication is that people may be healed from emotional and psychological maladies by participating in Santo Daime

ceremonies. This research does not pretend to indicate what that “something else” could be. It may be subtle forms of energy or other realms of existence; realms with which humans do not normally have contact. This research implies a paradigm foreign to Western culture and Cartesian thought. The implication is that the ancient shamanic worldview of a vast assortment of alternate realities, each just as real as the one we populate, is possible, and that healing may emerge from those realms. In many ways we have the opportunity to connect with those realities and be healed through our association with them. The implication is that there is much more to the world and existence than what we see before us.

One possible implication of the research results is that the CAQ was not sensitive enough to detect clinical or behavioral disorders in any of the sample; even those with preexisting clinical disorders. The findings in this research pose challenges to previous research findings. However, the CAQ was sensitive enough to demonstrate that one subset of the sample had more fragile personalities and another subset of the sample was more unreasonable than the norm. A substantial body of scientific research indicates the CAQ is a valid protocol for assessing psychopathology and chemical dependence traits. Consequently, lack of CAQ sensitivity to psychopathology is unlikely. A substantial portion of the research sample had preexisting pathologies and yet they were no worse off after participation in Santo Daime ceremonies than the rest of the research sample. There is an implication that participation in Santo Daime ceremonies was in some way responsible for the psychological and emotional healing of ten people.

A substantial amount of available literature reports a long history of the use of psychoactive plant medicines by indigenous people. Indigenous people and their shamans

have a paradigmatic view on the uses and benefits of psychoactive plants in celebratory, spiritual, and healing ceremonies; uses and benefits which are contrary to beliefs in Western culture. Western culture has its own concrete assumptions and perspectives about psychoactive plants that this research does not bear out. The Western paradigm would have us believe entheogen-induced alterations of consciousness are harmful and there are no benefits to altering consciousness with entheogens.

However, this research clearly revealed none of the sample was injured by participation in Santo Daime ceremonies. This research also revealed that sample members who had preexisting clinical disorders no longer manifested those disorders. In a sense, the sample participants were ambassadors of Western culture. They experienced entheogen-based ceremonies, survived without suffering psychopathological deterioration, and they returned. Ten members of the sample may have been healed as a result of participation in Santo Daime ceremonies. The implications are that *people from Western culture can participate in entheogen-based ceremonies without being harmed* and *there may be actual significant psychological and emotional benefits* to participation in such ceremonies.

Possibilities for Future Research

One of the interesting questions remaining is whether practice of the Santo Daime religion, without drinking the tea, would obtain the same results as this study, or even results similar to the Brazilian UDV study: remission of psychological, behavioral, and addictive disorders. One way to control for that would be to design a study duplicating all the rigors this research sample endured: travel to Brazil and

participation in Santo Daime ceremonies, but without drinking the tea, or perhaps even administering a nonpsychoactive placebo in the place of Daime. Other variables, such as the music, physical movements, lengthy meditations, or even the community aspects of living in Mapia (a small and isolated village in the Amazon rainforest) may have instead been responsible for the results.

Future research should certainly involve pre- posttesting of participants on location. Assessments could easily be administered several times pre- and postceremonial participation during the Festivals and results quickly analyzed. Quality controls for quantity of tea, ratio, and amount of each psychoactive compound ingested might make it easier to measure and predict the effects of Daime. There may be limits to the quantity of tea, or ratio of DMT to MAO inhibitor a person can safely ingest. Perhaps there are lower and upper limits to the amount of tea ingested, making Daime more or less effective. Without controls on quality and quantity of Daime ingested, negative or positive causation is difficult to ascertain.

Previous research in Brazil with the UDV noted that measurable changes in hormone levels occurred with the sample during ceremonies. But whether regular artificial stimulation and spiking of hormone production is healthy and what the long-term implications are to rapid shifts in hormone levels is not yet known. The Brazilian UDV study results indicated the sample did not appear to suffer any ill-effects from drinking ayahuasca. However, it was noted certain neurotransmitter reactions stimulated by vegetal also were associated with the aging process (Callaway et al., 1996). Additional research that monitors blood levels for hormone and neurotransmitter production could be useful in addressing potential health concerns.

More controlled research is suggested to compare the effects of Daime with other entheogens namely iboga and peyote, now being studied for possible benefits in treating addictions. Each of those plant sacraments are utilized by indigenous people in healing ceremonies. On a molecular level, the active ingredients in iboga and peyote are remarkably similar to Daime and likely bond to the same neurotransmitter sites as the sacrament. Each entheogen could produce different results. An interesting study would be to evaluate whether either entheogen is a more effective addiction treating agent and under what conditions. Individuals diagnosed with behavior or personality disorders, or even violent offenders, could be recruited as experimental coresearchers to evaluate whether entheogens are effective in treating psychopathological conditions within those populations. Research samples could be evaluated under scientifically rigorous study designs to evaluate the effectiveness of using psychoactive plant compounds for treating clinical disorders in the mental health system or personality disorders in the criminal justice system.

An interesting longitudinal study could compare Santo Daime ceremonies with nonentheogen practices, such as a Buddhist sangha, or a Catholic, or Baptist church. There may be effects that are unique to the subgroup drinking Daime not shared by other groups. Such a study would follow all the groups in their normal spiritual practices. Standardized psychological assessments would assist in monitoring and evaluating any emotional and psychological changes within and between the groups. Semistructured interviews could be analyzed for thematic content and common or dissimilar themes between the groups compared and contrasted. Actual psychological growth and maturity would be observable and quantifiable.

A number of questions might be answered in interesting ways. In what important ways do entheogens affect social interactions and interpersonal relationships? Do people who are involved in entheogen-based ceremonies and practices evolve or devolve? How do their relationships and interactions with others change over the course of time? Do the world views of a person participating in entheogen-based spiritual ceremonies change? Can the participants in such ceremonies put into practice the information they learn about themselves in their daily lives?

This and other research has demonstrated Daime does not cause harm, but does it truly benefit? While a number of sample participants previously diagnosed with clinical disorders are in remission, the research cannot demonstrate cause and effect. Based on this study design, there is no way to accurately determine whether drinking Daime was responsible for remission of pathologies within the sample. One of the stumbling blocks to demonstrating beneficial result is the lack of pre- and posttesting and the fact that this research looked at a picture of the research sample, frozen in time. However, with proper study design such as pre- and posttesting, monitoring by mental health clinicians, and supervision by medical doctors, benefits of the use of psychoactive plants could be assessed.

One intriguing question is, what is it about the sample that they were willing to go to Brazil and middle of the rainforest, amidst the snakes, spiders, heat, rain, jaguars, caimans, and other physical dangers and participate in syncretic ceremonies. What is it about the psychological makeup of the sample, what do they have in common that they were so bold and adventurous, so willing to endure physical and emotional hardship to participate in syncretic ceremonies?

A Santo Daime ceremony does not equate to drinking beer on a Saturday night at the local tavern. The ceremonies are taken seriously by the participants. Participation in Santo Daime ceremonies and drinking the tea is not a recreational activity. People do not drink the tea to have a good time. Reports are that people become nauseous and vomit, have diarrhea, and other unpleasant physical symptoms. Other standardized psychological assessments, such as the Myers-Briggs or MMPI, might be useful to determine common personality characteristics. A blended research design using qualitative research methods and semistructured interviews or life stories could help to explain transformational processes the sample experienced. Qualitative research could also help to answer what, other than addiction processes, drives members of the human community to want to alter their consciousness? Any future research also should include a thorough examination of CAQ reliability and validity, given the lack of findings of present clinical disorders within the subgroup with preexisting clinical diagnoses.

Conclusions

This research sought to compare the CAQ norm population with the research sample, utilizing the instrument's criteria of normal personality traits, and indicators of clinical pathology and tendencies towards chemical dependence. How the sample and norm were similar and deviated from one another was evaluated. In addition, subgroups of the research sample were created, based upon age, gender, length of time of association with the Santo Daime Church, number of Festivals attended, average number of ceremonies per Festival and preexisting diagnoses for clinical disorders. The research sample subgroups were compared against each other.

Statistical analysis failed to demonstrate personality traits outside the range of what is considered healthy. Comparison of the research sample with the norm population failed to reveal any tendencies toward psychopathology within the realm of the Axis I & Axis II disorders the CAQ measures. Statistical analysis demonstrated the research sample does not have tendencies towards chemical dependence. Finally, no indications of clinical psychopathology were observed in the sample subset that had preexisting diagnoses of clinical disorders.

There were indications the prediagnosed subset was more sensitive, emotionally fragile, dependent, anxious, and more insecure than the norm. That would be expected from a group of individuals with clinical diagnoses. That subset also had their strengths. They were happier, more resourceful and self-reliant, more imaginative, and less compulsive than the norm. There is one pronouncement which can be made with certainty about the research sample: *regardless of their emotional and psychological conditions before participation, after drinking Daime and participating in Santo Daime ceremonies, the research sample is well within the range of an average, healthy population, without indications of addiction.*

Personality and Clinical Traits Within the Sample

Analysis of the research sample's personality trait scales demonstrates the sample has a tendency to be more reserved, detached, and aloof than the average. However, it did not appear the sample had any pathological tendencies toward isolation. The research sample is more intelligent than the norm population and scored well above the average in general abilities. The scores reveal a sample with well-developed abilities to utilize

abstract concepts in their thought processes. The research sample also is more imaginative, innovative, and creative than average.

In the conduct of their daily lives, the research sample is indicated to be more able to tolerate stress, remain focused on their goals, and likely experiences more satisfaction with life than the norm. The research sample is also more dominant, assertive, and competitive than the norm. They are more pleased with how they have lived their lives, and more lively and gregarious than the norm. The sample seeks relationship and interpersonal contact with other more than the norm. As indications of gregariousness contrast with other findings of aloofness, the sample may contain their friendliness to other sample members or to people with whom they choose to have interpersonal relationships.

The research sample drank a powerful psychoactive tea, Daime, during syncretic religious and spiritual ceremonies in the middle of the Amazon rainforest or Holland. As might be expected, the group tends to disregard and deviate from established rules and traditions. They are nonconformist and clearly less constrained by societal convention than the norm. The sample strives to live life in an uncomplicated manner. The sample is indicated to be sensitive and perceptive to their own and the needs of others. They are more resourceful and self-sufficient than average. The research sample's scores also demonstrate they have more self-discipline and self-control than the norm.

Clinically, the sample would be expected to have fewer somatic complaints than the norm. They are more contented with their lives, a more composed group, and less depressed than average. The sample also has more energy and brings more energy to their daily tasks and life in general than the norm population. The sample is less likely to lay

awake at night ruminating about problems they encounter. They are less compulsive in their behaviors, better adjusted and integrated than the norm population.

Regarding psychopathological implications of the study, there were *no indications of personality disorders or clinical disorders*. Nor were there indications of reality distortion or learned helplessness among the research sample. The CAQ measures for a variety of clinical disorders, including anxiety, schizophrenia, depression, neurosis, obsessive-compulsive disorders, paranoia, and psychosis. None of the personality or clinical factor trait scales score means revealed statistically significant variances that would indicate psychopathology within the sample group. Finally, there were *no indications of tendencies toward alcoholism, narcotic abuse or addiction within the research sample*.

Sample Demographics

The research sample (N = 52) was composed of 27 men and 25 women, all of whom drank Daime, a powerful psychoactive rainforest tea, and participated in syncretic religious ceremonies. Age range for men was 27 to 64 and for women it was 25 to 65 years. Eleven men were cohabiting or married and 16 men were single, divorced, or separated. Twelve of the sample women were married, 12 were single, separated, or divorced and one woman was a widow.

The research sample was well-educated. Seventeen men had either a bachelors or masters degree while 20 women held either a bachelors or masters degree. Two women and one man held a Ph.D. and 2 sample members were professionally licensed. Nineteen men and 17 women either held full time jobs or were self employed. Five men and 5

women were employed part time; 3 participants were unemployed, while one man and woman reported being homemakers. Ten men and 5 women reported being white collar workers. Thirteen women, but only 6 men, were employed in the health care industry. Four men and 2 women were teachers while 4 women and 2 men were artists. Three men were blue collar workers; one reported working in information technology, as did one woman. One participant did not report his occupation.

Particular Interest

Surprisingly, members of the research sample were noted to be aloof and reserved. This finding was especially interesting because there were other, contrasting, indications the sample was warm, gregarious, and filled with energy for life. The sample was more imaginative, innovative, and intelligent than the norm. All but one of the research group had at least some college courses while 40 of the sample held a bachelors degree or higher. The sample does not like convention or tradition which was clear to see from several trait scale scores, and to be expected from their religious activities. The sample should be successful at any task they set for themselves; they are competitive and assertive, able to tolerate stress and remain focused on their goals. Sixty-nine percent of the sample was either self-employed or employed full time, and only three of the sample was unemployed. This is a happy group, contented with life, and well-adjusted. The research sample was emotionally sensitive and responsive and 60% were employed as teachers, artists or in the health care professions. The sample had no indications of psychopathology or tendencies towards substance abuse or addiction.

Summary

The research began with the hypothesis that Daime is an illegal, Schedule I dangerous drug, and if it is truly harmful, the research sample's personality disorders or clinical disorders would be detectable using a standardized psychological assessment. The second research hypothesis stated that if the sample was participating in syncretic ceremonies and drinking a psychoactive tea to quench addictive cravings, the sample's assessment scale scores also would indicate tendencies toward abuse or addiction. The research analyzed a sample of 52 participants, all of whom independently traveled to Brazil or Holland, where they participated in a minimum of 6 Santo Daime ceremonies. After participating in the ceremonies, the sample completed standardized assessments designed to reveal both clinical and personality disorders, as well as tendencies towards chemical dependence. The assessment trait scales scores were compared first against the norm population and then between subgroups of the research sample. There was *no finding of either personality or clinical disorders, nor was there any finding of chemical dependence*. The research results lead to the conclusion that participating in Santo Daime ceremonies and consuming Santo Daime, did not result in harm to either the psychological or emotional well-being of the participants.

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Appendix A: INTERVIEW QUESTIONS

When using the phrase *medicine* or *sacrament*, it means Santo Daime.

COMMUNITY

Does the phrase "community" have meaning for you? What does "community" mean to you? Is your present definition a change from before you began working with Santo Daime? How?

Since your participation in Brazilian Santo Daime ceremonies began, do you now experience a greater "sense of community" with others? What does that look like to you?

Do you have an experience of "community" in your daily life? What is your experience?

What does the phrase "world-at-large community" mean to you?

Has your experience with Santo Daime negatively or positively impacted your experience of "community"? What is your experience? Is it a generalized experience or particular to the sacrament?

What does the phrase "the current" mean to you? Is it something static or dynamic? In your experience is "the current" created or experienced? Please clarify.

Have you experienced "the current" in Santo Daime ceremonies? Would you describe your experience; what is it like?

Other than what I've asked you, is there anything you want to tell me about your participation in Santo Daime Festival(s) in relation to your sense of "community"? Anything more regarding how you may have been impacted as a social being?

RELATIONSHIPS

Before your participation with Santo Daime ceremonies, how would you have described your relationships with your parents and significant others?

Since attending Santo Daime Festival(s) how have your relationships with your parents and significant others changed? Could you clarify a bit more?

Has the sacrament helped you to work through important relationship issues? What has been your experience? Do you have an understanding whether what you have learned would, or would not have been possible without the sacrament's help?

Do you now feel an enhanced ability to be more vulnerable (open and accepting) in your relationships? What is your experience?

Do you now experience an enhanced ability to be more loving in your relationships? How does that manifest for you?

Do you now feel an enhanced ability to be more authentic in your relationships? What is that like?

Is there any way you can think of, that the sacrament has been destructive to your relationships?

Do you experience a sense of connection with others when in a Santo Daime ceremony? What do you feel when you experience a connection with others in ceremony?

Other than what we've previously discussed, how do you believe your work with Santo Daime has affected your relationships? In what important ways have your previously held perspectives about relationship changed? Can you provide some examples?

EMOTIONAL EXPRESSION

How would you characterize your emotional life before you began attending Santo Daime ceremonies in Brazil? Would you like to say more?

Since attending Santo Daime Festival(s) has your emotional experience shifted? Can you provide some examples?

Can you recall any negative emotional impacts resulting from drinking the sacrament; in your personal experience?

Do you identify (attached to) more with your emotional experiences now, or are you more objective and detached from them? Can you provide an example?

Are you more or less able to simply "notice" your emotional states or are you overwhelmed by them now?

Do you feel you now have more insight into the sources/causes of your emotional experience? What is your experience?

Can you provide some examples of how emotional expression in your daily life has changed?

How do you feel emotionally during a Santo Daime ceremony, after drinking the sacrament?

Has your work with the sacrament affected your ability to access and work on sensitive emotional issues? Has the sacrament helped you reach resolution of difficult issues? Can you provide some examples?

Do you feel your work with the Santo Daime sacrament has been beneficial to your emotional life experience? What benefits (or detriments) have you experienced?

Can you recall experiencing any negative emotional impacts in your daily life as a result of participating in the Santo Daime ceremonies?

How would you characterize your overall experience with Santo Daime in relation to your emotional growth and maturation process? Has the sacrament confronted you with any stumbling blocks you have found too difficult to work through?

Do you feel your work with the sacrament has given you more strength, focus, presence or other abilities that allow you to now work better with your inner states? What does that look like?

SPIRITUALITY

Before your participation with Santo Daime, how would you have described your perspective(s) on spirituality?

Since attending Santo Daime Festival(s) how has your perspective on spirituality shifted?

How do you feel the sacrament affects you spiritually during a Santo Daime ceremony?

Can you recall any negative spiritual effects you have experienced from drinking the sacrament?

Has the sacrament influenced your perspectives on the concept of “life after death”? How?

Do you have personal beliefs regarding an all-powerful Omniscient Being? What does the phrase mean to you? What does such a Being (an all- powerful Omniscient Being) look like to you? Have your perspectives regarding an all-powerful Omniscient Being been enhanced by your experience with the sacrament? How?

How has participation in the Santo Daime ceremonies affected your spiritual beliefs?

During Santo Daime ceremonies, and in your daily life, do feel you have experienced an expanded sense of connection to a power greater than yourself? Do you have a "most revealing experience"?

How would you describe your current relationship with/to "a power greater than yourself"?

Since attending Santo Daime Festival(s), have you experienced a change in your spiritual and religious practices? Has that had a negative or positive impact on your life? Can you describe the impact on your life?

During Santo Daime ceremonies, and in your daily life, have you experienced an expanded sense of being in relationship with incarnate or disincarnate spiritual beings? Can you say more about that?

Since beginning your work with Santo Daime, have you experienced beneficial spiritual growth? What benefits have you experienced?

Has your work with the sacrament expanded your understanding of what it means to be alive? What does that look like to you?

Have you had an experience of union with all of life or with others in the ceremony? Please describe your experience.

Can you describe an important spiritual experience or revelation you have had while in a Daime ceremony? How have your spiritual experience(s) affected the way you conduct your daily life?

Are you currently working with any particular spiritual issues that were activated by the sacrament?

Other than what I've asked you, is there anything you would like me to know about your spiritual work with Santo Daime and its effects in your life?

PHYSICAL EXPRESSION AND BODY AWARENESS

Before your participation with Santo Daime ceremonies, how would you have described your relationship to your physical body?

Since you began attending Santo Daime Festival(s) how would you describe any changes in your relationship to your physical body?

Can you recall any negative impacts Santo Daime has had on your body?

How do you feel the sacrament affects your physical body during a Santo Daime ceremony?

Have you ever had the experience of "being sung" or "being danced" by the sacrament while in the ceremony? Can you describe that experience?

Since you began attending Santo Daime Festival(s), have you experienced a sense of communication with the cellular level of your physical body? If so, how would you describe your experience(s)?

Do you feel the sacrament has affected your physical stress levels? How?

Other than what I've asked you, is there anything you would like me to know about your physical health in regards to participation in Santo Diame Festival(s)?

INTELLECTUAL FUNCTIONING

Since you began attending Santo Daime Festival(s) has your cognitive functioning changed, including long- and short-term memory, your ability to maintain "clarity of mind"? How about your ability to function cognitively in your daily life?

How do you feel the sacrament affects you cognitively during a Santo Daime ceremony?

Has the sacrament provided any negative impacts on your ability to function cognitively?

Do you view the sacrament as a "key" allowing you to open to a state of awareness or does the liquid sacrament contain an Intelligence or Presence? What is your experience?

Have you ever experienced a sense of Intelligence or consciousness in the sacrament itself? What is that Intelligence? One you have been able to communicate with? How does the sacrament/Intelligence communicate to/with you?

There is a phrase "The mind makes a great servant, but a terrible master." How would you apply that phrase to any understanding you may have gained since you began attending Santo Daime Festival(s)?

Other than what I've asked you, is there anything you would like me to know about how your cognitive functioning, including long- and short-term memory capabilities, your ability to maintain "clarity of mind", reasoning abilities, and your ability to function in your daily life has been affected?

CREATIVE EXPRESSION

Before your participation in Santo Daime ceremonies, how would you have described your experience with creativity?

Since your participation in Santo Daime ceremonies began, has your creative process been affected? How has your ability to be creative been affected?

Since your participation in Santo Daime ceremonies, have you received any creative impulses, attributable to the sacrament, that you have been able to manifest in your daily life?

Do you now measure your experience of creativity differently as a result of your participation in the Santo Daime Festival(s)?

Since your participation in the Santo Daime ceremonies, have you "received" any hymns? What form has that been in (thoughts, words, visions, etc?) Can you describe your experience? Do you have any insight into how that process of "receiving hymns" occurs? Is that different from any other way you have experienced the creative impulse? Do you have an understanding of what the hymns are?

Have you ever done anything while drinking the sacrament that you later regretted?

Have you ever done any harm to yourself or others, while under the influence of the sacrament?

Other than what we've discussed already, is there anything you would like me to know about your sense of creativity that you feel is important? What important lesson(s) have you learned from the sacrament, which serve(s) you in your daily life?

Appendix B: NONDISCLOSURE AND CONFIDENTIALITY AGREEMENT

1) Michael Cougar (hereinafter "Cougar") is an attorney, admitted to practice law in Oregon and California, and a Ph.D. candidate at the Institute of Transpersonal Psychology, located in Palo Alto, California. In his dual capacity of lawyer and student researcher, Cougar is collecting data for a dissertation project, and other purposes, and requires the services of a professional transcriber**.**

2) _____, (hereinafter "_____"), is a professionally trained transcriber, with sufficient experience to perform transcription services as may be required.

3) The Parties to this agreement desire to explore a possible business relationship which is mutually beneficial to their interests**.** Now, therefore, the Parties agree as follows:

This Non-Disclosure and Confidentiality Agreement is made and entered into on the ___ day of _____, 2004, by and between Cougar, herein referred to as "Disclosing Party," and _____, herein referred to as "Receiving Party." The Parties are proposing to enter into a business relationship wherein the Receiving Party will receive confidential "**research**," "**client communications**," "**business information**," and/or "**attorney work-product**" for the purpose of transcribing dialogue from audio cassette tapes into hard copy, on plain white paper, and on readable floppy disk in word processor format.

In consideration of their proposed relationship the Parties agree as follows:

1. DEFINITION OF CONFIDENTIAL INFORMATION

As used in this Agreement, the terms "research information," "confidential information," "trade secrets," "business information," "proprietary information," "client communications," and/or "attorney work-product" mean (1) proprietary information of Cougar, as defined in the "Uniform Trade Secrets Act"; (2) information marked or designated by Cougar as confidential; (3) information, whether or not in written form and whether or not designated as confidential, which is known to me as being treated by Cougar as confidential; and (4) information provided to Cougar by third parties which Cougar is obligated to keep confidential. Confidential information includes, but is not limited to, interview data, discoveries, ideas, designs, drawings, specifications, techniques, models, data, programs, documentation, processes, know-how, participant lists, marketing plans, and, financial and technical information.

2. OWNERSHIP

Receiving Party, in order to induce Disclosing Party to allow an inspection of Cougar's **business information** acknowledges that all confidential information, received from Disclosing Party in connection with this Agreement and transcription work for Cougar, including, but not limited to, any materials provided or any report generated from materials provided, or from any inspection of any documents or of any facility, shall remain the property of Disclosing Party; and any and all reports and/or recommendations

generated by Receiving Party, are and shall remain the exclusive property of Cougar, whether or not prepared in whole or in part by either Party. Receiving Party further agrees that any of the above aforementioned materials shall not be copied or otherwise duplicated unless agreed to in writing by Disclosing Party.

Receiving Party acknowledges that such **"research" or "business information,"** in whatever form provided, constitutes **"trade secrets"** or **"proprietary information"** of the Disclosing Party, which the Disclosing Party deems provides it a commercial advantage in Cougar's business. In addition Receiving Party will receive confidential "**client communications**," "**business information**," and/or "**attorney work-product."** Receiving Party, his/her agents **and employees** hereby agree not to share any of the information with any other party. Further, by virtue of professional training and experience, Receiving Party is aware of statutory and common law provisions regarding maintaining client secrets and confidential communications.

3. ACKNOWLEDGMENT OF RECEIPT OF CONFIDENTIAL INFORMATION

Receiving Party acknowledges that in the course of performing my duties for Cougar I will have access to confidential information, the ownership and confidential status of which are highly important to Cougar, and Receiving Party agrees, in addition to the specific covenants contained in this Agreement, to comply with all Cougar policies and procedures for the protection of confidential information.

4. ACKNOWLEDGMENT OF IRREPARABLE HARM

Receiving Party acknowledges that any disclosure of confidential information will cause irreparable harm to Cougar and/or his clients.

5. COVENANT OF NONDISCLOSURE

Receiving Party agrees not to disclose confidential information, directly or indirectly, under any circumstances or by any means, to any third person without the express written consent of Cougar. Receiving Party further covenants and agrees that the information obtained from any confidential information received from Disclosing Party shall not be used by Receiving Party or any employee, agent, or transferee of Receiving Party for the purpose of competing with Disclosing Party or for any other purpose.

6. COVENANT OF NONUSE

Receiving Party agrees that it will not copy, transmit, reproduce, summarize, quote, or make any commercial or other use whatsoever of Confidential Information, except as may be necessary to perform my duties for Cougar.

7. SAFEGUARD OF CONFIDENTIAL INFORMATION

Receiving Party agrees to exercise the highest degree of care in safeguarding confidential information against loss, theft, or other inadvertent disclosure, and agrees generally to take all steps necessary to ensure the maintenance of confidentiality.

8. EXCLUSIONS

This Agreement shall not apply to any specific information now or hereafter voluntarily disseminated by Cougar to the public, or which otherwise becomes part of the public domain through lawful means. However, data which might reveal, or tend to reveal, personal identity of the participants shall at all times remain confidential.

10. RETURN OF CONFIDENTIAL INFORMATION

Upon termination of my engagement as a transcriber by Cougar, or otherwise as requested, Receiving Party will deliver promptly to Cougar all confidential information, in whatever form, that may be in my possession or under my control. Further, upon the completion or termination as described herein, any and all copies remaining in Receiving Party's possession that are not returned to Cougar, will be shredded or otherwise destroyed.

11. SUBPOENAS

If Receiving Party is served with any subpoena or other compulsory judicial or administrative process calling for production of confidential information, Receiving Party will immediately notify Cougar in order that he may take such action as he deems necessary to protect his clients and/or other interests.

12. REMEDIES

If Receiving Party fails to abide by this Agreement, Cougar will be entitled to such equitable remedies as are deemed appropriate by the court, including, but not limited to specific performance, including immediate issuance of a temporary restraining order or preliminary injunction enforcing this Agreement, and to judgment for damages caused by my (Receiving Party's) breach, and to any other remedies provided by applicable law.

13. DURATION

The obligations set forth in this Agreement will continue beyond the term of my (Receiving Party's) engagement as a transcriber by Cougar and for as long as Receiving Party possesses confidential information in any form.

14. INDUCEMENTS

The parties agree that, but for the inducements contained herein, Disclosing Party would not disclose the confidential information referred to herein.

15. ATTORNEY FEES

In connection with transcription work for Cougar, including, but not limited to, any written or verbal materials provided or any report, transcript, or other written or verbal data generated from materials provided, or from an inspection of any documents or video or audio recordings shall remain the property of Disclosing Party. In the event that this Agreement is breached and Disclosing Party hires an attorney to enforce the provisions of this Agreement, the Disclosing Party shall be entitled to his reasonable attorney fees and costs, including on appeal.

The Receiving and Disclosing Parties have affixed their signature(s) to this document on the date above first written.

/s/_____
Receiving Party

/s/ _____
Michael Cougar,
Disclosing Party

Appendix C: CORRESPONDENCE WITH THE CHURCHES' BOARDS OF DIRECTORS

August 1, 2003

Board of Directors
Santo Daime Church
Ceu do Mapia, Brazil

Re: proposed dissertation research project

Dear Board of Directors:

As you know, I am a student at the Institute of Transpersonal Psychology in Palo Alto, California, USA, working towards a PhD. in Transpersonal Psychology. This will confirm our previous discussions regarding my proposed dissertation research project. I am providing you with the finalized version of the proposal for my dissertation research project with this letter. The Dissertation Committee has requested that the church's Board of Directors provide written confirmation that:

1. This research proposal has been reviewed and approved by the Church;
2. The Church has agreed to assist the project by providing names and addresses of individuals who have visited either Holland or Brazilian churches for at least one Festival;
3. The Church is satisfied with the study controls that provide for safety and confidentiality of potential respondents; and,
4. The Church understands that we acknowledge no one will be obligated in any way to participate in the proposed study, and that, if they agree to participate, they have made a voluntary choice to do so.

I would also ask your permission to distribute the consent letter you provide to me to the potential participants of the study. Thank you for your time and consideration in this matter.

Respectfully yours,

Michael Cougar
enclosure

Church of Eclectic Flowing Light Universal of Raimundo Irineau Serra
Patron Sebastian Mota de Melo

Re: Superior Doctrine and Executive Direction of the First Headquarters of the Church of CEFLURIS-Village of Mapia

To: Michael Cougar

Subject: Doctoral Research and Dissertation

Village of
Mapia
March 2, 2004

Greetings Michael:

We acknowledge our previous discussions and agreements with you, regarding the above matter. We have discussed the thesis of your dissertation proposal and evaluated the proposed research. The Board of Directors of the Church met; having reviewed your dissertation proposal, we have the following remarks:

1) That the Directors of our Church have considered the requested research, as to its interest and importance, utilizing scientific parameters to explore utilization of the religious, entheogenic sacrament Santo Daime and expanded states of consciousness.

2) That the Directors of Church agree to give authorization to conduct the research, as noted in your proposal, and that participants may be contacted to request voluntary participation in the proposed research project.

3) That the Directors of Church agree to facilitate and aid in the research, with the condition that you follow the security, confidentiality, and privacy as set forth in the proposal, and that any participation in the research be strictly voluntary.

Our only the exception is that all the operational costs involving any aspect and necessity for the research be the entire responsibility of the proponent.

Yours, truly,
Alfredo Gregario de Melo
Superior Doctrine Chairman of the Board

Alex Polari de Alverga
Director-executive of the Church

August 1, 2003

Paulo Roberto Silva de Souza, Presidente
Centro Eclectico de Fluente Luz Universal
Sao Conrado Rio de Janeiro, Brazil

Re: proposed dissertation research project

Dear Board of Directors:

As you know, I am a student at the Institute of Transpersonal Psychology in Palo Alto, California, USA, working towards a PhD. in Transpersonal Psychology. This will confirm our previous discussions regarding my proposed dissertation research project. I am providing you with the finalized version of the proposal for my dissertation research project with this letter. The Dissertation Committee has requested that the church's Board of Directors provide written confirmation that:

1. This research proposal has been reviewed and approved by the Church;
2. The Church has agreed to assist the project by providing names and addresses of individuals who have visited either Holland or Brazilian churches for at least one Festival;
3. The Church is satisfied with the study controls that provide for safety and confidentiality of potential respondents; and,
4. The Church understands that we acknowledge no one will be obligated in any way to participate in the proposed study, and that, if they agree to participate, they have made a voluntary choice to do so.

I would also ask your permission to distribute the consent letter you provide to me to the potential participants of the study. Thank you for your time and consideration in this matter.

Respectfully yours,

Michael Cougar
enclosure

Centro Eclectico de Fluente Luz Universal
Sebastian Mota de Melo

To: Michael Cougar

Subject: Doctoral Research and Dissertation

Sao Conrado Rio de Janeiro, Brazil

July 15, 2004

Greetings Michael:

We acknowledge our previous discussions and agreements with you, regarding the above matter. We have discussed the thesis of your dissertation proposal and evaluated the proposed research. The Board of Directors of the Church met; having reviewed your dissertation proposal, we have the following remarks:

1) That the Directors of our Church have considered the requested research, as to its interest and importance, utilizing scientific parameters to explore utilization of the religious, entheogenic sacrament Santo Daime and expanded states of consciousness.

2) That the Directors of Church agree to give authorization to conduct the research, as noted in your proposal, and that participants may be contacted to request voluntary participation in the proposed research project.

3) That the Directors of Church agree to facilitate and aid in the research, with the condition that you follow the security, confidentiality, and privacy as set forth in the proposal, and that any participation in the research be strictly voluntary.

Our only the exception is that all the operational costs involving any aspect and necessity for the research be the entire responsibility of the proponent.

Yours truly,

Paulo Roberto Silva de Souza, Presidente

Estrada das Canoas 3.036
Sao Conrado Rio de Janeiro, Brazil ZC 22610210

Appendix D: CORRESPONDENCE WITH THE RESEARCH SAMPLE

Michael Cougar
125 Water Street, Ste. "D"
Santa Cruz, CA 95060
831-427-3515
michaelcougar@msn.com

[Date]

re: Dissertation research project

Dear :

Thank you once again for your assistance with this research project. Enclosed you will find a transcript of our recent supplemental interview concerning your experiences in Brazil. When the transcript was received, I reviewed the printed copy against the tape recording. I made a number of corrections to the hard copy, but there may be some responses that could be modified to more accurately reflect your experience.

You now have the opportunity to review our discussion to assure that your experience is accurately reflected in the transcript. You may find that you now have a different response to the questions, or you may want to express your experience in a different way. You may also decide to delete your response altogether. Accordingly, please feel free to make any appropriate corrections to the transcript, including additions, deletions, or grammatical changes. You may also decide the transcript accurately reflects your experience and not respond to this invitation.

Because I am working under time restrictions, I ask that you return any corrections to me within ten (10) days. If I do not receive a response from you within ten (10) days I will assume you wish to make no changes. I will then proceed to work with your responses and complete the project. I have enclosed a return envelope, with postage inside, to cover the cost of returning any corrections to me.

In near future I expect to send you a summarization of the research results. If you have any questions, feel free to contact me. Thank you once again for your assistance with this research project.

Respectfully yours,

Michael Cougar

Michael Cougar
125 Water Street, Ste. "D"
Santa Cruz, CA 95060
831-427-3515
michaelcougar@msn.com

{Date]

re: Dissertation research project

Dear :

Thank you once again for your assistance with this research project. Enclosed you will find a transcript of our recent interview concerning your experiences in Brazil. When the transcript was received, I reviewed the printed copy against the tape recording. I made a number of corrections to the hard copy, but there may be some responses that could be modified to more accurately reflect your experience.

You now have the opportunity to review our discussion to assure that your experience is accurately reflected in the transcript. You may find that you now have a different response to the questions, or you may want to express your experience in a different way. You may also decide to delete your response altogether. Accordingly, please feel free to make any appropriate corrections to the transcript, including additions, deletions, or grammatical changes. You may also decide the transcript accurately reflects your experience and not respond to this invitation.

Because I am working under time restrictions, I ask that you return any corrections to me within ten (10) days. If I do not receive a response from you within ten (10) days I will assume you wish to make no changes. I will then proceed to work with your responses and complete the project. I have enclosed a return envelope, with postage inside, to cover the cost of returning any corrections to me.

In near future I expect to send you a summarization of the research results. If you have any questions, feel free to contact me. Thank you once again for your assistance with this research project.

Respectfully yours,

Michael Cougar
enclosure

Michael Cougar
125 Water Street, Ste. "D"
Santa Cruz, CA 95060
831-427-3515
michaelcougar@msn.com

[Date]

re: Dissertation research project

Dear :

As you will recall, I am collecting data to complete a dissertation at the Institute of Transpersonal Psychology. To date, 40 completed assessment packets have been returned by other participants. In order to improve the statistical significance of the research study I am hoping to receive at least 50 completed packets. I previously provided an assessment packet to you. However, I noticed that I have not yet received your assessment packet. Perhaps the packet failed to reach you by mail, or it may have been misplaced. If you need another packet please let me know and I will send one out to you by return mail.

In any event, I am hopeful you will find the time soon to complete the assessments and return them. If you have any questions or concerns about the research project or the assessments, please feel free to contact me to address your concerns. Thank you for your time and willingness to participate in this research.

Respectfully yours,

Michael Cougar

Michael Cougar
125 Water Street, Ste. “D”
Santa Cruz, CA 95060
831-427-3515
michaelcougar@msn.com

[Date]

re: Dissertation research project

Dear :

As you know, I am in the process of collecting data to complete a dissertation project at the Institute of Transpersonal Psychology. I appreciate that you returned the initial assessment packet so quickly. The information you provided about your experiences will be very useful in writing the dissertation report. I remain hopeful of completing the project before the end of April. You will receive a summary of the results, once it is completed.

After sending out the initial assessment packets, it occurred to me that there were a few additional questions that are important to ask. To address those remaining issues, I have prepared a supplemental questionnaire and enclosed it with this letter. I hope that you have the time available to review the questions, complete the questionnaire and return it to me in the enclosed envelope.

If you have any questions, feel free to contact me.

Respectfully yours,

Michael Cougar
enclosure

Michael Cougar
125 Water Street, Ste. "D"
Santa Cruz, CA 95060
831-427-3515
michaelcougar@msn.com

[Date]

re: Dissertation research project

Dear _____:

As you know, I am in the process of collecting data to complete a dissertation at the Institute of Transpersonal Psychology. I noticed that I have not yet received your assessment packet and I am hopeful you will find the time soon to complete the assessments and return them. If you have any questions about the project or the assessment, please feel free to contact me to address your concerns.

In reviewing assessment packets other participants have already returned, I noticed that possible responses to some of the questions could have been drafted to make it easier to complete the Demographic Questionnaire. To resolve this issue I re-drafted a portion of the Questionnaire and have enclosed a copy. If you have already begun to fill out the Questionnaire, this revision replaces pages 5 & 6 of the Questionnaire I previously sent to you. Please discard or ignore pages 5 & 6 of the previous Questionnaire, and substitute the revisions enclosed with this letter.

After sending out the initial assessment packets, it occurred to me that there were a few additional questions that are important to ask. To address those remaining issues, I have prepared a supplemental questionnaire and enclosed it with this letter. I hope that you have the time available to review these additional questions, complete the questionnaire and return the entire package in the manila envelope I previously provided. I am also enclosing additional postage to cover the cost of the new pages.

If you have any questions, feel free to contact me.

Respectfully yours,

Michael Cougar
enclosure

Appendix E: CONSENT FORM

(Date)

(Name and address)

re: Dissertation research project

Dear (research participant):

I am currently working on my doctorate in Transpersonal Psychology at the Institute of Transpersonal Psychology in Palo Alto, California. As part of the dissertation process, I invite you to participate in a research project exploring personality, emotional expression, spirituality, and the life experiences of two groups of people who have participated in Santo Daime Festivals. One group will be created from those who have participated in Festivals in Brazil and the other group will be from people who have attended Festivals in Holland. Out of concern for the sensitive nature of this research, the Board of Directors of the Church: CEFLURIS, in Mapia, Brazil, have reviewed this proposed research project. Copies of correspondence with the Board of Directors are enclosed with this invitation to participate.

The initial phase of the research project involves returning this Implied Consent Form, signed by you, and including a contact telephone number, if you have one, where I can reach you to answer any questions you may have. I will then send a demographic questionnaire anonymously asking information about you and your spiritual practices, and two standardized psychological assessments, to complete and return to me. Together the assessments will take between 1 ½ and 2 ½ hours to complete. As with this letter, I will include a postage-paid envelope with the next mailing in which to return the questionnaire and completed assessments. The assessments will be anonymously scored by an independent testing company, and any personal references which might identify you will be removed. The two group assessment scores will be compared with each other and with the populations with whom the assessments were standardized. No individual person's score will be reviewed, requested, or used in the final research report.

After the assessments are returned the second phase of the research will begin. In this phase I will re-contact at least six people from each group and invite them to anonymously participate in interviews regarding their personal experiences during and after the Festivals. The interviews will take between 60 and 90 minutes. The interviews will be recorded and transcripts will be created from the interviews. A professional transcriber will be used. The transcriber must agree to sign a strict confidentiality agreement regarding nondisclosure of data, identifiers, and any other information that could personally identify participants. Any personal information which could identify you will be deleted from the transcripts. Once they are typed, I will review the transcripts against the recorded interviews, make any appropriate corrections, and then forward the corrected transcripts to you for your review, if you wish. Postage paid envelopes will be provided to make the return process easy. As soon as the transcripts are returned to me I will review the transcripts for emerging themes important to the interviewees.

Throughout the entire process I intend to keep all the participants confidential, and no one will be personally identified in the final writing of the project. As an attorney in private practice, I am familiar with privileged, confidential communications between attorney and client, and will maintain your personal involvement as an inviolable secret. In addition, no information will be retained by me which could personally identify you with any individual response(s) to this research. During the final phase of this research, I will write a formal report called a Dissertation. Summarized results of the research study will be made available to you, unless you request otherwise.

This study is designed to minimize the potential risks to participants. All personally identifying information will be deleted before it is reviewed by anyone but me. Once the interviews are concluded I will keep no notes which could identify you with any answer you may provide during this study. Since Santo Daime is legal in Brazil and Holland, no one can be prosecuted by authorities for having participated in the Festivals in those locations. The research results may be utilized in legalization efforts in those countries where Santo Daime is now legally proscribed.

During the interviews we will discuss emotional or spiritual issues, and how each participant has been affected in their involvement with Santo Daime Festival(s). The interviews will encourage discussion and resolution of issues of concern, or simply allow

the experiences with the sacrament to be heard by the world-at-large. Whether your experiences have been positive or not, I am interested in hearing about them. I am interested in where you are on your journey towards wholeness. Since the interviews will cover issues important to the interviewees, the possibility of anxiety associated with introspection will be minimized. The interview will be structured toward providing emotional support for individuals participating in the study.

However, accessing emotional material can sometimes cause a degree of anxiety for some individuals, as the interviews may elicit conditioned patterns of behavior or communication styles resulting from difficult life experiences. Sometimes anxiety results when future experiences are anticipated, or interactions with friends and family may involve unresolved issues. Therefore, participants involved in the study should have a support system, such as a therapist, mentor or spiritual guide in place during the interview process.

If at any time you have concerns or questions regarding the process, I will make every effort to be available for discussion and to inform you of options for resolving encountered difficulties. If there are more serious concerns, provisions will be made for referrals to professionals. Participation in this study is entirely voluntary. No pressure will be applied to encourage participation. Counseling is available through the Transpersonal Counseling Center which is located at the Institute of Transpersonal Psychology, located at 744 San Antonio Rd. in Palo Alto, CA. The telephone number is 650-493-4430.

For the protection of your privacy, all information received from you will be kept confidential as to source, and your identity will be protected. Parts of your interview or a summary, your written and verbal comments and feedback, and all information received from you may possibly be used anonymously in the dissertation report. Your identity will remain strictly confidential. All materials containing your confidential information will be kept in locked file cabinets in my law office at 125 Water Street, Ste. “D,” Santa Cruz, California, 95060. No one else will have access to the information. Any information which might identify you will be altered to ensure your anonymity if the study results are published.

While I have explained the study to you, you may have unresolved questions. If you have any questions or concerns, call the researcher (Michael Cougar) collect at 831-427-3515, or write me at: 125 Water Street, Suite "D," Santa Cruz, CA, 95060, or call my chairperson, Dr. Roulette Smith, at 650-493-4430, or Shani Robins, Ph.D. the Chairperson of the Ethics Committee of the Institute of Transpersonal Psychology, 650-493-4430, extension number 38. The Institute of Transpersonal Psychology assumes no responsibility for psychological or physical injury resulting from this research.

If you decide not to participate in this research, you may withdraw your consent and discontinue your participation at any time during this study and for any reason, without penalty or prejudice. You may request a summary of the research findings by providing your mailing address with your signature on the next page. Please feel free to use the enclosed self-addressed, stamped-envelope to communicate with me, or to return the signed form, on the next page, to me. Thank you for your interest in participating in this study.

Respectfully yours,

Michael Cougar

PLEASE RETURN THIS PORTION

I attest that I have read this form, understand its content, and have had any questions about this research answered to my satisfaction. I understand my participation in this research is entirely voluntarily, and no pressure has been applied to encourage my participation. I understand I may withdraw from the study at any time during its conduct without penalty or prejudice. My signature indicates my willingness to be a participant in this research.

_____

Participant's signature Date

_____

Researcher's signature Date

Are you willing to participate in Phase Two (interviews) of this project? _____

Would you like to receive a summary of the results of this research? _____

Name, mailing address and telephone number
(for additional contact and to send summary of research findings)

_____

(name)

_____

_____

(address)

_____

(telephone number)

Appendix F: DEMOGRAPHIC QUESTIONNAIRE

Do you reside in Europe or North America:_____
(please indicate which location)

For the following questions, please respond as is most appropriate for your personal situation:

Year of Birth: _____ Gender: M / F Sexual orientation: _____
(circle) (e.g., gay, bi-sexual, heterosexual)

Current relationship status: _____
(e.g., single/never married, cohabitating, married, separated, divorced, widowed)

Highest education level completed: _____
(e.g., some high school, finished high school, some college, BA/BS, MA/MS, Ph.D., MD, JD, credential/licensure)

Current occupational status: _____
(e.g., Employed full-time, employed part-time, homemaker, unemployed, retired)

What is your occupation:_____

What about your occupation provides satisfaction:_____
_____

Do you rent or own your home? _____

What is your current annual household income? _____
($25,000 or less, 25000-50000, 50,000-75,000 75,000-100,000 100,000-125,000 more than 125,000)

Please indicate whether you have participated in Santo Daime Festival(s) Brazil, Holland or both Brazil and Holland: _____

Before beginning participation in Santo Daime activities, did you have physical health concerns? _____ Were the health concerns life-threatening? _____

If yes, what was your condition?
_____

If yes, has your physical health condition changed since participation began? _____

If yes, how has it changed? _____
Before beginning participation in Santo Daime activities, did you have emotional or mental health concerns? _____ Did your concerns interfere with your ability to function? _____

If yes, what diagnosis did you have? Any prescribed medications if so, what?
_____

If yes, how was your ability to function in daily life compromised?
_____

If yes, has your mental health condition changed since participation began? _____

If yes, how has it changed? _____

Who are your role models and why: _____
_____

What is your current religious affiliation: _____
(e.g., no affiliation, agnostic, atheist, Jewish, Catholic, Protestant, Christian, Hindu, Buddhist, other [please indicate])

How frequently do you participate in formal religious activities or group-related spiritual practices? _____
(e.g., daily, weekly, bi-monthly, monthly, yearly, not at all)

Do you currently practice formal meditation or prayer? _____

If yes, what tradition(s) of meditation or prayer do you practice? _____

If yes, how frequently do you practice? _____

If yes, what is the duration of a typical practice session? _____

If yes, how long have you practiced meditation? _____

If yes, how long have you maintained the current level of practice? _____

If yes, why did you begin your present meditation or prayer practice?

_____

If no, did you practice in the past? _____

If yes, what kind of meditation or prayer did you practice?

_____

If your practice of meditation or prayer has ceased, why?

_____

How many years have you been involved with the Santo Daime Church? _____

How many Festivals have you attended _____

Average number of ceremonies attended per Festival _____

As a results of your experience with the Santo Daime Church, has your perspective of spirituality in your life changed? _____ And, if yes, please describe.

_____

_____

As a result of your experience with the Santo Daime Church, has your perspective of relationship to a Higher Power changed? ____ And, if yes, please describe.

_____

_____

As a result of your experience with the Santo Daime Church, has your intellectual functioning been altered? ____ And, if yes, please describe.

_____

_____

As a result of your experience with the Santo Daime Church, have your emotional expressions changed? ____ And, if yes, please describe.

_____

_____

What about the Santo Daime Church attracted your attention?

_____

_____

Other than Santo Daime ceremonies, have you participated in ayahuasca ceremonies in a different church or in a different context, such as a shamanic ritual? _____ And, if yes, please describe your experience.

_____

_____

_____

Prior experience with other substances: <u>length of use/time since last use</u>:

lsd ___/___ mdma ___/____ peyote ____/____ mushrooms ____/____

marijuana ___/____ heroin ___/____ cocaine ___/___ amphetamine___/___

Ibogaine ___/___

Please answer the following questions with the following words to describe your experience: More / less / about the same

<u>COMMUNITY</u>

After participating in Santo Daime activities have you:

experienced a "sense of community" more or less frequently _____
volunteered for community service of some kind more or less _____
felt more or less responsibility for what happens in your community _____
provided a contribution to projects to which you have no direct connection _____

Please answer the following questions with the following words to describe your experience: Yes / No / More / Less / about the same

RELATIONSHIPS

After participating in Santo Daime activities have/has

You terminated a romantic relationship _____
You begun a new romantic relationship _____
You remained in the same relationship _____
The quality of your relationships improved or been worse _____
You felt closer to those with who you are in relationship _____

Your relationships appeared more or less stable _____
You found it easier to form relationships or more difficult _____
Your ability to trust others in relationship improved or decreased _____

Please answer the following questions with the following words to describe your experience: Yes / No / More / Less / about the same

SPIRITUALITY
After participating in Santo Daime activities have/has
Your sense of connection to a power greater than yourself changed _____
You developed new relationships to non-physical beings _____
You changed beliefs regarding life after death _____
You developed a greater sense of purpose in your daily life _____
Your sense of satisfaction with your place in life changed _____
In relation to the above question, if there has been a change since your Festival experience, do you view the change as beneficial to your life _____

Please answer the following questions with the following words to describe your experience: Yes / No / More / Less / about the same

INTELLECTUAL FUNCTONING
After participating in Santo Daime activities
Have you experienced clarity in your thought process more or less _____
Are you more or less able to perform cognitive functions _____
Have you felt more or less in control of your mind and mental processes _____
Have you experienced internal conversations increase or decrease _____
In relation to the above questions, if there has been a change since your Festival experience, do you view the change as beneficial to your life _____

Please answer the following questions with the following words to describe your experience: Yes / No / More / Less / about the same

EMOTIONAL
After participating in Santo Daime activities, and in terms of frequency of occurrence,
Have your emotional states been more or less stable _____
Have you experienced states of joy more or less _____
Have you experienced states of anger more or less _____
Have you experienced intense emotional states more or less _____
Have you experienced states of "irritation" more or less _____
Have you experienced unexplained emotional states (an emotional state that appears incongruous to the present life experience) more or less _____
In relation to the above question, if there has been a change since your Festival experience, do you view the change as beneficial to your life _____

Please answer the following questions with the following words to describe your experience: Yes / No / More / Less / about the same

PHYSICAL

After participating in Santo Daime activities have/has

Your sense of connection to/with your body increased or decreased _____
You experienced satisfaction with the image of your physical body _____
Your physical health improved _____
You participated in an organized fitness program more or less _____

In relation to the above questions, if there has been a change since your Festival experience, do you view the change as beneficial to your life _____

Please answer the following questions with the following words to describe your experience: Yes / No / More / Less / about the same

CREATIVITY

After participating in Santo Daime activities have:

You experienced more or less desire to create _____
You experienced an enhanced or reduced ability to create _____
You changed your idea of what “creativity” means _____

Appendix G: SUPPLEMENTAL DEMOGRAPHIC QUESTIONNAIRE

Supplemental Demographic Questionnaire

If necessary, feel free to use additional sheets of paper, or the back of this Questionnaire, if you need additional space to answer the questions.

Please describe any noticeable effects the Santo Daime tea has on your physical body while you are in a Santo Daime ceremony.

_____

_____

Have you ever encountered any effects on your physical body from the Santo Daime tea (*before, during or after the ceremony)*, that were determined to be a cause for concern, dangerous, or life threatening? Please circle your response Yes / No. If "Yes" please, describe your experience.

_____

_____

If "Yes" please describe your experience, how long the effect(s) lasted, if and how they resolved.

_____

_____

Please describe any noticeable effects the Santo Daime tea has on you emotionally while you are in a Santo Daime ceremony.

_____

_____

Have you ever encountered any effects on you emotionally from the Santo Daime tea (*before, during or after the ceremony*) that were determined to be a cause for concern, dangerous, or life threatening? Please circle your response Yes / No. If "Yes" please, describe your experience.

_____

_____

If “Yes” please describe your experience, how long the effect(s) lasted, if and how they resolved.

_____

_____

Please describe any noticeable effects the Santo Daime tea has on your mental functions while you are in a Santo Daime ceremony.

_____

_____

Have you ever encountered any effects on your ability to function intellectually from the Santo Daime tea (*before, during or after the ceremony*) that were determined to be a cause for concern, dangerous, or life threatening? Please circle your response Yes / No. If “Yes” please, describe your experience.

_____

_____

If “Yes” please describe your experience, how long the effect(s) lasted, if and how they resolved.

_____

_____

As a result of drinking the Santo Daime tea, have you ever lost the sense of your self-identity, i.e., who you are as a person? Please circle your response Yes / No. If “Yes” please, describe your experience.

_____

_____

Have you ever encountered any effects on your sense of your self-identity, i.e., who you are as a person, from the Santo Daime tea (*before, during or after the ceremony*) that were determined to be a cause for concern, dangerous, or life threatening? Please circle your response Yes / No. If “Yes” please, describe your experience.

_____

_____

If “Yes” please describe your experience, how long the effect(s) lasted, if and how they resolved.

_____

_____

Have you ever found it necessary to seek assistance from therapeutic, medical, or other professional persons to help you resolve problems you encountered from drinking the Santo Daime tea? Please circle your response Yes / No. If “Yes” please, describe your experience.

_____

_____

Other than what may have been discussed above, have you ever encountered any effects on you from drinking the Santo Daime tea (*before, during or after the ceremony*) that were determined to be a cause for concern, dangerous, or life threatening? Please circle your response Yes / No. If “Yes” please, describe your experience.

_____

_____

If “Yes” please describe your experience, how long the effect(s) lasted, if and how they resolved.

_____

_____

Have you received healing of any physical, emotional or mental conditions as the result of drinking Santo Daime tea? Please circle your response Yes / No. If “Yes” please, describe your experience.

_____

_____

Other than what has already been asked, is there anything else important you would like to say about your experience with the Santo Daime tea?

_____

_____

Appendix H: ALTERNATE RESPONSE FORM USED

Please mark the answer(s) for each question that best describes your experience:

COMMUNITY

After participating in Santo Daime activities have you:

Experienced a "sense of community" more or less frequently

____ More frequently:
____ Same frequency:
____ Less frequently:
____ Having a sense of "community" is not important:
____ I do not know what "community" means:

Volunteered for community service of some kind more or less

____ More frequently:
____ No change:
____ Less frequently:
____ I never volunteer for "community service":

Felt more or less responsibility for what happens in your community

____ More responsibility:
____ No change:
____ Less responsibility:
____ I do not feel responsible for what happens in my community:

Provided a financial contribution to projects with which you have no direct connection

____ My financial contribution(s) have increased:
____ No change:
____ My financial contribution have been reduced:
____ I do not financially contribute to projects unless I have a connection:

In relation to the above Community questions, if you have experienced change in your perspective since your Festival experience, do you view the change as beneficial to your life

____ Yes:
____ No:
____ I attribute these changes to my Festival experience and the Sacrament:

RELATIONSHIPS

After participating in Santo Daime activities have/has

You terminated a romantic relationship

____ Yes:
____ More than one relationship:
____ No:
____ I was not involved in a romantic relationship:

You begun a new romantic relationship

____ Yes:
____ More than one relationship?:
____ No
____ I am not interested in romantic relationships:

You remained in the same romantic relationship

____ Yes:
____ No:
____ I was not involved in a romantic relationship:

The quality of your relationships improved or been worse

____ Quality has improved:
____ No change in quality:
____ Quality reduced:
____ No way to tell:

You felt closer to those with whom you are in relationship

____ Closer:
____ No change:
____ More distant:
____ No way to tell

Your relationship(s) appeared more or less stable

____ More stable:
____ No change:
____ Less stable:

You found it easier to form relationships or more difficult

____ Less difficult:
____ No change:
____ More difficult:

Your ability to trust others in relationship improved or decreased

____ Improved:
____ No change:
____ Decreased:

In relation to the above Relationships questions, if you have experienced a change in relationships or perspectives since your Festival experience, do you view the change as beneficial to your life

____ Yes:
____ No:
____ I attribute these changes to my Festival experience and the Sacrament:

SPIRITUALITY

After participating in Santo Daime activities have/has

Your sense of connection to a power greater than yourself changed:

____ Yes:
____ I now feel a **c**loser connection:
____ My sense of connection has decreased:
____ No change:
____ I have not felt connected to power greater than myself:

You developed new relationships with/to non-physical beings

____ Yes:
____ No change:
____ No:
____ I have never had a relationship with non-physical beings

You changed your belief regarding life after death

____ Yes:
____ I now believe in life after death:
____ I now do not believe in life after death:
____ No change:
____ I still believe in life after death (Y/N):
____ I still do not believe in life after death (Y/N):
____ I now feel more clarity about this issue:

You developed a greater sense of purpose in your daily life

____ Yes:
____ No change:
____ No:
____ I have no sense of purpose in my daily life:

Your sense of satisfaction with "your place in life" changed

____ Yes:
____ Satisfaction has increased: ____ Greatly increased:
____ Satisfaction has decreased: ____ Greatly decreased:
____ No change:
____ I have not felt satisfied with my place in life

In relation to the above Spirituality questions, if you have experienced changed perspectives since your Festival experience, do you view the changes as beneficial to your life

____ Yes:
____ No:
____ I attribute these changes to my Festival experience and the Sacrament:

INTELLECTUAL FUNCTONING
After participating in Santo Daime activities
Have you experienced clarity in your thought process more or less
____ More clarity:
____ No change in clarity of thought:
____ Less clarity:

Are you more or less able to perform cognitive functions
____ More able:
____ No change:
____ Less able:

Have you felt more or less in control of your mind and mental processes
____ More control over mental processes:
____ No change:
____ Less control over mental processes:
____ I do not feel I can control my mental processes:

Have you experienced internal conversations increase or decrease
____ Internal conversations have increased:
____ No change:
____ Internal conversations have decreased:
____ The quality of internal conversation has changed:
____ Quality of internal conversation has improved:
____ Quality of internal conversation has decreased:
____ I do not have internal conversations:

In relation to the above Intellectual Functioning questions, if you have experienced changes in intellectual functioning since your Festival experience, do you view the changes as beneficial
____ Change beneficial:
____ Change not beneficial:
____ Cannot determine a change has occurred:
____ Prefer not to judge whether the change is beneficial:
____ No comment:

EMOTIONAL
After participating in Santo Daime activities, and in terms of frequency of occurrence,
Have your emotional states been more or less stable
____ More stable:
____ No change:
____ Less stable:
____ No way to know:

Have you experienced states of joy more or less

____ More joy:
____ No change:
____ Less joy:
____ I do not experience states of joy:
____ No response:

Have you experienced states of anger more or less

____ More anger:
____ No change:
____ Less anger:
____ I do not experience states of anger:
____ No response:

Have you experienced intense emotional states more or less

____ More frequent intense states:
____ States have been more pleasant:
____ States have been less pleasant:
____ No change:
____ Fewer intense states:
____ States have been more pleasant:
____ States have been less pleasant:
____ I do not experience intense emotional states:
____ No response:

Have you experienced states of "irritation" more or less

____ More frequent irritation:
____ No change:
____ Less frequent irritation:
____ I do not experience states of irritation:
____ No response:

Have you experienced unexplained emotional states (an emotional state that appears incongruous to the present life experience) more or less

____ More frequent:
____ No change:
____ Less frequent:
____ I have not experienced unexplained emotional states:

In relation to the above Emotional questions, if you have experienced change in your emotional life since your Festival experience, do you view the change as beneficial to your life

____ The change has been beneficial:
____ There has been no change:
____ The change has not been beneficial:
____ I cannot tell yet if the change is beneficial
____ I would prefer not to say:

PHYSICAL

After participating in Santo Daime activities have/has

Your sense of connection to/with your body increased or decreased

____ I feel more connected to my body:
____ No change:
____ I feel less connected with my body:
____ I cannot say if I feel more or less connected:
____ I do not experience connection to/with my body:

You experienced satisfaction with the image of your physical body

____ I feel more satisfaction with my body image:
____ No change:
____ I feel less satisfaction with my body image:
____ I cannot say if I feel more or less satisfaction with my body image:
____ I do not feel satisfaction with my body image:

Your physical health improved

____ My physical health has improved:
____ No change:
____ My physical health has deteriorated:
____ I cannot say if there has been and improvement or deterioration in physical health:

You participated in an organized fitness program more or less

____ More participation:
____ No change in level of participation
____ Less participation:
____ I have not previously participated in an organized fitness program:

In relation to the above Physical questions, if you have experienced a change in your physical health since your Festival experience, do you view the change as beneficial to your life

____ The change has been beneficial:
____ The change has not been beneficial:
____ I cannot say whether the change has been beneficial or not:

CREATIVITY

After participating in Santo Daime activities have:

You experienced more or less desire to create

____ More desire to be creative:
____ No change:
____ Less desire to be creative:
____ I am unable to determine whether I have more or less desire to be creative:
____ I do not desire to be creative:

You experienced an enhanced or reduced ability to create

____ My ability to be creative is enhanced:
____ No change:
____ My ability to be creative is reduced:
____ I do not view myself as a creative person:

You changed your idea of what "creativity" means

____ My idea of creativity has changed:
____ More inclusive:
____ Less inclusive:
____ There has been no change:
____ My idea of creativity has not changed:
____ I cannot say if my idea of creativity has changed:
____ I have no idea of what "creativity" is:

Appendix I: TRAIT SCALES 1—3

I1 PERSONALITY TRAIT SCALES

IMAGE OMITTED TO AVOID COPYRIGHT INFRINGEMENT

I2 CLINICAL FACTOR TRAIT SCALES

IMAGE OMITTED TO AVOID COPYRIGHT INFRINGEMENT

I3 SECOND-ORDER FACTOR TRAIT SCALES

IMAGE OMITTED TO AVOID COPYRIGHT INFRINGEMENT

Appendix J: IPAT CONSENT LETTER

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Mr Michael Cougar
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EMAILED TO: michaelcougar@msn.com

22 November 2005

Dear Mr Cougar

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Clinical Analysis Questionnaire Standard Form Individual Record Folder
Page 2 only

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I hope this meets your need; if not, please let me know.

Yours sincerely

Diana M Hawkins (Miss)
Company Secretary
Email: Diana.Hawkins@opp.eu.com

Appendix K: STATISTICAL TABLES

Table K1

t Test Raw Score Comparisons Between the Sample and Norm Population

Scale	Study *Mean*	Study *SD*	Norm *Mean*	Norm *SD*	*t*	*df*	*p*
A*	7.4	2.37	10.8	3.25	-10.242	51	.001
B*	9.7	1.75	7.0	2.17	10.898	51	.001
C	15.4	3.80	16.1	4.07	-1.227	51	.225
E*	13.4	4.35	12.1	4.03	2.132	51	.038
F	14.4	3.19	13.9	4.25	1.100	51	.276
G*	11.1	3.54	13.1	3.39	4.003	51	.001
H	13.9	5.26	13.9	5.50	.100	51	.921
I*	14.5	2.68	11.2	4.05	8.977	51	.001
L	6.7	3.13	6.8	3.42	-.292	51	.771
M*	14.7	2.80	13.1	3.79	4.146	51	.001
N*	7.6	2.75	9.8	2.94	-5.768	51	.001
O	10.2	3.76	10.2	4.12	.122	51	.904
Q1	9.3	2.65	8.6	3.16	1.899	51	.063
Q2*	12.5	3.03	10.2	3.55	5.318	51	.001
Q3*	11.6	3.12	12.9	3.35	-2.946	51	.005
Q4	12.3	4.23	11.8	4.85	.799	51	.428
D1	3.4	4.43	4.6	4.82	-1.960	51	.060
D2*	1.5	2.48	3.7	4.71	-6.331	51	.001

Table K1 cont'd.

Scale	Study *Mean*	Study *SD*	Norm *Mean*	Norm *SD*	*t*	*df*	*p*
D3	11.1	3.11	11.7	3.31	-1.401	51	.167
D4*	6.2	2.75	7.1	4.00	-2.431	51	.019
D5*	4.8	4.64	7.7	6.27	-4.446	51	.001
D6*	4.1	2.92	6.6	5.20	-6.155	51	.001
D7*	3.7	2.69	4.7	3.78	-2.514	51	.015
Pa	5.1	2.71	5.2	3.66	-0.434	51	.666
Pp	14.3	3.17	14.2	3.61	0.315	51	.754
Sc	4.1	3.13	4.6	3.87	-1.209	51	.230
As*	4.3	2.83	6.8	4.10	-6.513	51	.001
Ps*	3.4	3.13	5.5	4.98	-4.743	51	.001

*p <.05

Table K2

t Test Comparison of Research Sample and Norm Sten Scores

Scale	*Mean*	*SD*	*t*	*df*	*p*
A	3.4	1.37	-11.216	51	.001*
B	7.6	1.72	8.799	51	.001*
C	5.3	1.65	0.906	51	.001*
E	6.1	1.94	2.358	51	.022*
F	6.1	1.58	2.550	51	.014*
G	4.4	1.86	-4.172	51	.001*
H	5.5	1.94	0.072	51	.943
I	7.5	1.69	8.636	51	.001*
L	5.6	2.01	0.276	51	.784
M	6.6	1.42	5.473	51	.001*
N	4.0	1.74	-6.225	51	.001*
O	5.8	1.84	1.208	51	.223
Q1	6.2	1.77	2.962	51	.004*
Q2	6.9	1.60	6.328	51	.001*
Q3	4.9	1.73	-2.559	51	.013*
Q4	5.9	1.63	1.962	51	.055
D1	4.9	1.82	-2.281	51	.027*
D2	5.0	1.23	-2.822	51	.007*
D3	5.0	2.09	-1.595	51	.117

Table K2 cont'd.

Scale	*Mean*	*SD*	*t*	*df*	*p*
D4	5.2	1.49	-1.595	51	.117
D5	4.7	1.70	-4.005	51	.001*
D6	4.7	1.34	-4.358	51	.001*
D7	5.4	1.32	-0.421	51	.676
Pa	5.5	1.39	0.100	51	.921
Pp	5.7	1.94	0.644	51	.552
Sc	5.4	1.75	-0.316	51	.759
As	4.4	1.38	-6.009	51	.001*
Ps	4.8	1.40	-3.475	51	.001*

* $p < .05$

Table K3

t Test Raw Score Comparisons Between the Sample and Norm Population

Scale	Study *Mean*	Study *SD*	Norm *Mean*	Norm *SD*	*t*	*df*	*p*
D3	11.1	3.11	11.7	3.31	-1.401	51	.167
D4	6.2	2.75	7.1	4.00	-2.431	51	.019*
D6	4.1	2.92	6.6	5.20	-6.155	51	.001*
D7	3.7	2.69	4.7	3.78	-2.514	51	.015*
Pa	5.1	2.71	5.2	3.66	-0.434	51	.666
Pp	14.3	3.17	14.2	3.61	0.315	51	.754
Sc	4.1	3.13	4.6	3.87	-1.209	51	.230
As	4.3	2.83	6.8	4.10	-6.513	51	.001*

*p <.05

Table K4

t Test Sten Score Results for Research Sample

Scale	*Mean*	*SD*	*t*	*df*	*p*
D3	5.0	2.09	1.595	51	.117
D4	5.2	1.49	1.595	51	.117
D6	4.7	1.34	4.358	51	.001*
D7	5.4	1.32	.421	51	.676
Pa	5.5	1.39	.100	51	.921
Pp	5.7	1.94	.644	51	.552
Sc	5.4	1.75	.316	51	.759
As	4.4	1.38	6.009	51	.001*

*p <.05

Table K5

t Test Raw Score Comparisons Between Sample Men and Norm

Scale	Study *Mean*	Study *SD*	Norm *Mean*	Norm *SD*	*t*	*df*	*p*
D5	5.3	4.71	6.3	5.82	-1.076	26	.291
Pp	14.9	3.42	15.3	3.56	-.538	26	.595

*p <.05

Table K6

t Test Sten Score Results for Research Sample Men

Scale	*Mean*	*SD*	*t*	*df*	*p*
D5	4.8	1.65	-3.647	26	.001*
Pp	6.0	2.02	1.267	26	.210

*p <.05

Table K7

t Test Raw Score Comparisons Between the Sample Women and Norm

Scale	Study *Mean*	Study *SD*	Norm *Mean*	Norm *SD*	*t*	*df*	*p*
D5	4.2	4.59	9.0	6.43	-5.227	24	<.001

*p <.05

Table K8

t Test Sten Score Results for Research Sample Women

Scale	*Mean*	*SD*	*t*	*df*	*p*
D5	4.3	1.75	-3.373	24	.003*

*p <.05

Table K 9

Analysis of Variance Comparison of Men and Women Using Raw Scores

Scale	Male *Mean*	*SD*	Female *Mean*	*SD*	*F*	*df*	*p*
A	7.4	2.42	7.4	2.36	0.050	1, 50	0.943
B	10.0	2.08	9.3	1.25	2.219	1, 50	0.143
C	15.3	4.06	15.6	3.58	0.903	1, 50	0.805
E	14.4	4.41	12.2	3.04	3.638	1, 50	0.062
F	14.3	3.37	14.4	3.02	0.01	1, 50	0.978
G	10.3	3.82	11.9	3.32	2.527	1, 50	0.118
H	13.9	5.71	14.0	4.86	0.002	1, 50	0.962
I	13.6	2.85	15.5	2.10	7.564	1, 50	0.008*
L	6.8	2.70	6.7	3.63	0.113	1, 50	0.738
M	14.7	2.84	14.7	2.82	0.005	1, 50	0.946
N	7.7	2.84	7.5	2.69	0.085	1, 50	0.772
O	10.0	4.47	10.3	2.94	0.091	1, 50	0.764
Q1	10.0	2.56	8.6	2.60	3.835	1, 50	0.056
Q2	12.8	2.91	12.1	3.17	0.609	1, 50	0.439
Q3	11.6	2.69	11.7	3.58	0.020	1, 50	0.857
Q4	11.6	4.41	13.0	3.98	1.536	1, 50	0.221
D1	3.0	4.14	3.8	4.76	0.458	1, 50	0.502
D2	2.0	3.06	1.0	1.55	2.319	1, 50	0.134
D3	11.6	3.00	10.5	3.16	1.566	1, 50	0.217

Table K9 cont'd.

Scale	Male *Mean*	*SD*	Female *Mean*	*SD*	*F*	*df*	*p*
D4	5.6	3.30	6.8	1.88	2.410	1, 50	0.127
D5	5.3	4.71	4.2	4.59	0.770	1, 50	0.384
D6	3.8	3.14	4.3	2.70	0.384	1, 50	0.538
D7	4.0	3.09	3.5	2.22	0.412	1, 50	0.524
Pa	5.2	3.03	5.0	2.37	0.088	1, 50	0.768
Pp	14.9	3.42	13.6	2.78	2.329	1, 50	0.133
Sc	4.1	3.24	4.1	3.07	.000	1, 50	0.992
As	4.7	2.86	3.7	2.76	1.707	1, 50	0.197
Ps	3.4	3.20	3.5	3.11	0.016	1, 50	0.901
Ex	4.8	1.20	4.9	1.20	0.179	1, 50	0.674
Ax	5.7	1.79	5.9	1.27	0.210	1, 50	0.648
Ct	3.6	1.17	4.9	1.77	8.808	1, 50	0.005*
In	7.2	1.55	6.8	1.43	0.948	1, 50	0.332
Se	4.3	1.62	4.6	2.09	1.143	1, 50	0.569
So	4.4	1.58	5.1	1.48	2.674	1, 50	0.108
D	4.8	1.59	4.6	1.54	0.142	1, 50	0.708
P	5.3	1.64	5.6	1.40	0.678	1, 50	0.414
Ne	5.7	1.35	6.3	1.47	3.672	1, 50	0.182

*p <.05

Table K10

Study Participants by Age Group Raw Score Comparison

Scale	Age 50 or less *Mean*	*SD*	Age 51 or more *Mean*	*SD*	*F*	*df*	*p*
A	7.6	2.39	7.2	2.38	0.288	(1, 50)	0.594
B	9.8	1.42	9.6	2.08	0.131	(1, 50)	0.719
C	16.5	3.58	14.2	3.74	5.034	(1, 50)	0.029*
E	14.3	4.30	12.3	4.24	2.887	(1, 50)	0.096
F	15.1	2.51	13.6	3.68	3.049	(1, 50)	0.087
G	11.3	2.88	10.8	4.36	0.317	(1, 50)	0.576
H	15.5	4.30	12.2	5.76	5.339	(1, 50)	.025*
I	14.3	2.43	14.7	2.97	0.266	(1, 50)	0.608
L	6.3	3.49	7.1	2.68	0.982	(1, 50)	0.327
M	14.3	2.74	15.2	2.86	1.348	(1, 50)	0.251
N	7.2	2.29	8.0	3.16	1.265	(1, 50)	0.268
O	8.9	3.86	11.6	3.20	7.513	(1, 50)	0.008*
Q1	9.7	2.82	8.8	2.42	1.654	(1, 50)	0.204
Q2	12.2	2.66	12.7	3.40	0.347	(1, 50)	0.559
Q3	12.0	3.41	11.2	2.79	0.693	(1, 50)	0.409
Q4	12.0	4.25	12.6	4.26	0.195	(1, 50)	0.660
D1	2.7	3.92	4.1	4.89	1.407	(1, 50)	0.241
D2	1.2	1.94	2.0	2.95	1.396	(1, 50)	0.243

Table K10 cont'd.

Scales	Age 50 or less		Age 51 or more				
	Mean	*SD*	*Mean*	*SD*	*F*	*df*	*p*
D3	11.8	2.83	10.3	3.25	3.316	(1, 50)	0.075
D4	5.0	2.99	7.4	1.80	12.060	(1, 50)	0.001*
D5	4.7	4.51	4.9	4.67	0.018	(1, 50)	0.893
D6	3.3	2.35	4.9	3.28	4.047	(1, 50)	.050*
D7	3.2	2.52	4.4	2.78	2.714	(1, 50)	0.106
Pa	4.5	2.71	5.7	2.63	2.458	(1, 50)	0.123
Pp	14.3	2.94	14.2	3.47	0.011	(1, 50)	0.917
Sc	3.3	2.48	5.0	3.56	3.694	(1, 50)	0.060
As	4.4	3.17	4.1	2.48	0.170	(1, 50)	0.682
Ps	3.0	3.33	3.8	2.90	0.853	(1, 50)	0.360
Ex	5.2	0.85	4.4	1.36	6.512	(1, 50)	0.014*
Ax	5.4	1.58	6.3	1.40	4.844	(1, 50)	0.032*
Ct	4.2	1.58	4.3	1.65	0.025	(1, 50)	0.875
In	7.4	1.55	6.5	1.32	4.700	(1, 50)	0.035*
So	4.4	1.47	5.1	1.59	2.674	(1, 50)	0.108
Se	4.4	1.64	4.4	2.08	0.007	(1, 50)	0.935
D	4.4	1.52	4.9	1.57	1.583	(1, 50)	0.217
P	5.1	1.56	5.8	1.43	2.427	(1, 50)	0.126
Ne	5.6	1.52	6.4	1.23	3.670	(1, 50)	0.061

*p <.05

Table K11

Subgroups Based on Years of Participation-Raw Scores

Scale	5 & 6 years or less		6 & 7 years or more				
	Mean	*SD*	*Mean*	*SD*	*F*	*df*	*p*
A	7.1	2.15	7.6	2.57	0.596	(1, 50)	0.444
B	9.5	2.10	9.9	1.38	0.459	(1, 50)	0.501
C	15.2	3.85	15.6	3.80	0.163	(1, 50)	0.688
E	13.6	4.93	13.2	3.82	0.095	(1, 50)	0.759
F	14.5	2.99	14.2	3.41	0.083	(1, 50)	0.774
G	10.1	3.64	11.9	3.49	3.336	(1, 50)	0.074
H	14.2	5.36	13.7	5.25	0 .131	(1, 50)	0.719
I	14.8	2.44	14.2	2.90	0.684	(1, 50)	0.412
L	6.1	2.84	7.2	3.33	1.755	(1, 50)	0.191
M	14.5	2.99	14.9	2.67	0.179	(1, 50)	0.674
N	7.5	2.95	7.7	2.60	0.085	(1, 50)	0.772
O	9.9	3.38	10.4	4.17	0.181	(1, 50)	0.672
Q1	9.0	2.42	9.5	2.87	0.416	(1, 50)	0.521
Q2	12.1	3.15	12.8	2.93	0.609	(1, 50)	0.439
Q3	11.8	2.72	11.4	3.49	0.168	(1, 50)	0.686
Q4	11.7	4.06	12.8	4.39	0.867	(1, 50)	0.356
D1	2.0	2.89	4.6	5.25	4.609	(1, 50)	0.037*
D2	0.7	1.02	2.3	3.15	5.705	(1, 50)	0.021*

Table K11 cont'd.

Scale	5 & 6 years or less		6 & 7 years or more				
	Mean	*SD*	*Mean*	*SD*	*F*	*df*	*p*
D3	11.1	2.91	11.1	3.33	.000	(1, 50)	0.995
D4	6.4	3.01	6.0	2.52	0.267	(1, 50)	0.607
D5	3.8	3.10	5.7	5.63	2.052	(1, 50)	0.158
D6	3.6	2.68	4.4	3.13	0.985	(1, 50)	0.326
D7	3.3	2.41	4.1	2.93	1.122	(1, 50)	0.295
Pa	4.4	2.33	5.7	2.90	3.546	(1, 50)	0.066
Pp	14.1	3.13	14.4	3.26	0.134	(1, 50)	0.716
Sc	3.8	3.06	4.4	3.21	0.616	(1, 50)	0.436
As	4.1	2.36	4.4	3.25	0.170	(1, 50)	0.682
Ps	2.9	2.49	3.9	3.59	1.485	(1, 50)	0.232
Ex	5.0	1.34	4.7	1.03	0.707	(1, 50)	0.405
Ax	5.6	1.44	6.1	1.64	1.154	(1, 50)	0.288
Ct	3.9	1.81	4.5	1.36	1.661	(1, 50)	0.203
In	6.8	1.61	7.2	1.37	0.851	(1, 50)	0.361
Se	4.0	1.45	4.7	2.13	1.997	(1, 50)	0.164
So	4.8	1.57	4.8	1.57	0.002	(1, 50)	0.967
D	4.3	1.15	5.0	1.81	2.379	(1, 50)	0.129
P	5.1	1.39	5.8	1.59	2.830	(1, 50)	0.099
Ne	6.0	1.55	6.0	1.33	0.000	(1, 50)	0.999

*p <.05

Table K12

Study Participants Compared by Number of Festivals Attended - Raw Scores

Scale	1-2 Festivals		>2 Festivals				
	Mean	*SD*	*Mean*	*SD*	*F*	*df*	*p*
A	7.0	2.62	7.9	1.98	1.945	(1, 50)	0.169
B	9.7	2.18	9.7	1.12	0.004	(1, 50)	0.952
C	15.3	3.93	15.6	3.72	0.079	(1, 50)	0.781
E	13.1	3.93	13.6	4.86	0.156	(1, 50)	0.694
F	14.3	3.27	14.5	3.15	0.054	(1, 50)	0.817
G	10.6	4.00	11.6	3.16	1.083	(1, 50)	0.303
H	13.7	5.03	14.2	5.63	0.129	(1, 50)	0.721
I	14.3	2.43	14.8	2.97	0.606	(1, 50)	0.440
L	6.6	2.99	6.8	3.35	0.028	(1, 50)	0.872
M	14.6	2.64	14.8	3.04	0.055	(1, 50)	0.816
N	7.6	2.23	7.6	3.30	0.001	(1, 50)	0.976
O	10.3	3.64	10.0	4.02	0.039	(1, 50)	0.845
Q1	9.5	2.78	9.1	2.54	0.263	(1, 50)	0.610
Q2	12.6	3.23	12.3	2.82	0.214	(1, 50)	0.645
Q3	11.6	3.07	11.7	3.24	0.012	(1, 50)	0.914
Q4	12.0	3.26	12.7	5.19	0.352	(1, 50)	0.556
D1	2.7	4.09	4.1	4.78	1.317	(1, 50)	0.257
D2	1.5	2.22	1.5	2.81	0.000	(1, 50)	0.993

Table K12 cont'd.

Scale	1-2 Festivals		>2 Festivals				
	Mean	*SD*	*Mean*	*SD*	*F*	*df*	*p*
D3	11.2	3.07	10.9	3.20	0.117	(1, 50)	0.734
D4	6.1	2.63	6.2	2.93	0.017	(1, 50)	0.896
D5	4.7	3.75	4.9	5.59	0.033	(1, 50)	0.856
D6	4.0	2.78	4.2	3.13	0.061	(1, 50)	0.806
D7	3.5	2.59	4.0	2.84	0.440	(1, 50)	0.510
Pa	4.3	2.19	6.0	2.97	6.244	(1, 50)	0.016*
Pp	15.0	2.92	13.5	3.31	3.186	(1, 50)	0.080
Sc	3.8	2.70	4.5	3.58	0.824	(1, 50)	0.368
As	4.0	2.85	4.5	2.86	0.342	(1, 50)	0.561
Ps	3.3	2.90	3.6	3.43	0.115	(1, 50)	0.736
Ex	4.8	1.12	4.9	1.28	0.132	(1, 50)	0.718
Ax	5.8	1.26	5.7	1.86	0.022	(1, 50)	0.884
Ct	4.1	1.47	4.4	1.75	0.621	(1, 50)	0.434
In	6.9	1.60	7.0	1.39	0.028	(1, 50)	0.859
Se	4.3	1.78	4.5	1.95	0.250	(1, 50)	0.620
So	4.6	1.56	5.1	1.54	1.318	(1, 50)	0.256
D	4.6	1.46	4.8	1.68	0.254	(1, 50)	0.617
P	5.0	1.37	5.9	1.57	4.792	(1, 50)	0.033*
Ne	6.2	1.06	5.8	1.76	0.870	(1, 50)	0.355

*p <.05

Table K13

Subgroups Based on Average Number of Ceremonies Attended

Scale	9 & 7 or less *Mean*	*SD*	8-10 or more *Mean*	*SD*	*F*	*df*	*p*
A	7.5	2.49	7.3	2.35	0.020	(1, 50)	0.887
B	9.3	2.06	10.1	1.23	2.805	(1, 50)	0.100
C	15.0	3.85	15.9	3.76	0.625	(1, 50)	0.433
E	12.5	4.69	14.3	3.77	2.254	(1, 50)	0.139
F	13.9	2.98	14.9	3.39	1.441	(1, 50)	0.236
G	11.0	3.49	11.1	3.89	0.015	(1, 50)	0.903
H	13.2	5.78	14.8	0.93	1.218	(1, 50)	0.275
I	14.2	3.13	14.9	2.05	0.781	(1, 50)	0.381
L	6.5	2.71	6.9	3.61	0.115	(1, 50)	0.736
M	14.8	2.86	14.6	2.79	0.025	(1, 50)	0.875
N	7.9	2.93	7.2	2.52	0.887	(1, 50)	0.351
O	9.8	4.12	10.6	3.37	0.571	(1, 50)	0.454
Q1	9.1	2.54	9.5	2.81	0.402	(1, 50)	0.529
Q2	12.6	2.95	12.3	3.17	0.079	(1, 50)	0.780
Q3	11.3	3.22	12.0	3.03	0.534	(1, 50)	0.468
Q4	13.0	4.27	11.5	4.15	1.400	(1, 50)	0.242
D1	3.7	4.72	3.0	4.14	0.299	(1, 50)	0.587
D2	1.5	2.56	1.5	2.45	0.000	(1, 50)	0.993
D3	10.7	3.23	11.5	2.95	0.996	(1, 50)	0.322

Table K13 cont'd.

Scale	9 & 7 or less *Mean*	*SD*	8-10 or more *Mean*	*SD*	*F*	*df*	*p*
D4	6.5	2.74	5.8	2.77	0.771	(1, 50)	0.384
D5	4.9	4.66	4.6	4.72	0.054	(1, 50)	0.817
D6	4.4	3.11	3.7	2.70	0.796	(1, 50)	0.377
D7	4.0	2.94	3.5	2.41	0.451	(1, 50)	0.505
Pa	4.9	3.16	5.3	2.11	0.179	(1, 50)	0.674
Pp	13.5	3.07	15.2	3.09	3.970	(1, 50)	0.052*
Sc	4.4	3.74	3.8	2.25	0.603	(1, 50)	0.441
As	4.4	3.06	4.1	2.61	0.085	(1, 50)	0.772
Ps	4.0	2.97	2.8	3.23	2.110	(1, 50)	0.153
Ex	4.7	1.36	5.0	0.93	0.895	(1, 50)	0.349
Ax	5.9	1.67	5.8	1.43	0.029	(1, 50)	0.864
Ct	4.3	1.83	4.1	1.32	0.151	(1, 50)	0.699
In	6.8	1.61	7.1	1.36	0.495	(1, 50)	0.485
Se	4.3	1.86	4.5	1.87	0.156	(1, 50)	0.695
So	5.2	1.42	4.3	1.59	4.503	(1, 50)	0.038*
D	4.8	1.60	4.6	1.53	0.175	(1, 50)	0.677
P	5.4	1.75	5.4	1.25	0.001	(1, 50)	0.980
Ne	6.0	1.62	6.0	1.19	0.037	(1, 50)	0.840

*p <.05

Table K14

Study Participants Diagnosed With a Clinical Disorder Compared to Norm Raw Score

Scale	Study *Mean*	Study *SD*	Norm *Mean*	Norm *SD*	*t*	*df*	*p*
A	7.0	2.42	10.8	3.25	-4.933	9	.001*
B	9.9	1.60	7.0	2.17	5.670	9	.001*
C	13.1	3.84	16.1	4.07	-2.444	9	.037*
E	13.3	4.90	12.1	4.30	.787	9	.451
F	13.6	3.69	13.9	4.25	-.223	9	.629
G	11.9	3.21	13.1	3.39	1.161	9	.275
H	12.5	6.47	13.9	5.50	-6.600	9	.526
I	15.2	2.44	11.2	4.05	5.209	9	.001*
L	7.3	3.53	6.6	3.42	.448	9	.665
M	13.9	2.51	13.1	3.79	1.031	9	.329
N	7.6	2.95	9.8	2.94	-2.357	9	.043*
O	11.6	2.55	10.1	4.12	1.675	9	.094
Q1	9.3	3.06	8.6	3.16	.734	9	.481
Q2	15.5	2.64	10.2	3.55	6.324	9	.001*
Q3	10.5	3.44	12.9	3.35	-2.280	9	.049
Q4	15.3	2.16	11.8	4.85	5.089	9	.001*
D1	4.5	4.55	4.6	4.82	-.049	9	.962
D2	1.5	1.51	3.7	4.71	-4.652	9	.001*
D3	10.8	3.61	11.7	3.31	-.770	9	.461

Table K14 cont'd.

Scale	Study *Mean*	Study *SD*	Norm *Mean*	Norm *SD*	*t*	*df*	*p*
D4	7.7	2.00	7.1	4.00	.979	9	.353
D5	6.3	5.40	7.7	6.27	-.797	9	.446
D6	4.0	2.40	6.6	5.20	-3.355	9	.008*
D7	3.3	1.89	4.7	3.78	-2.294	9	.047*
Pa	5.4	2.22	5.2	3.66	.228	9	.825
Pp	14.4	2.55	14.2	3.61	.310	9	.763
Sc	4.0	3.20	4.6	3.87	-.633	9	.542
As	4.1	2.73	6.8	4.10	-3.143	9	.012*
Ps	4.6	3.47	5.5	4.99	-.802	9	.443

*p <.05

Table K15

Study Participants Diagnosed With a Clinical Disorder Comparison of Sten Scores

Scale	*Mean*	*SD*	*t*	*df*	*p*
A	3.2	4.14	-6.406	9	.011*
B	7.9	1.60	4.758	9	.001*
C	4.3	1.49	-2.539	9	.032*
E	6.1	2.26	.831	9	.427
F	5.6	1.78	.178	9	.863
G	5.0	1.89	-.839	9	.423
H	5.0	2.16	-.732	9	.483
I	7.9	1.66	4.563	9	.001*
L	5.6	2.32	.136	9	.895
M	6.2	1.23	1.801	9	.105
N	4.3	1.49	-2.539	9	.032*
O	6.3	1.18	2.182	9	.057
Q1	6.2	1.99	1.113	9	.295
Q2	8.4	1.26	7.250	9	<.001*
Q3	4.4	1.90	-1.833	9	.100
Q4	7.1	.88	5.775	9	<.001*
D1	5.5	1.96	.000	9	1.000
D2	5.2	1.14	-.836	9	.425
D3	4.9	2.56	-.742	9	.477

Table K15 cont'd

Scale	*Mean*	*SD*	*t*	*df*	*p*
D4	6.0	.94	1.677	9	.128
D5	5.1	2.02	-.625	9	.548
D6	4.7	1.06	-2.388	9	.041*
D7	5.4	.84	-.375	9	.716
Pa	5.9	1.20	1.057	9	.318
Pp	6.0	2.00	.791	9	.450
Sc	5.4	1.65	-.192	9	.852
As	4.2	1.40	-2.940	9	.016*
Ps	5.4	1.65	-.192	9	.852

*p <.05

Table K16

Second Order Sten Score - Study Participants Diagnosed With a Clinical Disorder

Scale	*Mean*	*SD*	*t*	*df*	*p*
Ex	4.1	1.37	-3.329	9	.009*
Ax	6.5	1.05	3.115	9	.012*
Ct	4.3	1.34	-2.869	9	.019*
In	7.3	1.78	3.227	9	.010*
Se	4.5	2.019	-1.503	9	.167
So	4.8	1.50	-1.557	9	.154
D	5.1	1.54	-.843	9	.421
P	5.5	1.46	.087	9	.933
Ne	5.9	1.75	.652	9	.531

*p <.05

Table K17

Research Study Participants Medicated for a Clinical Disorder - Raw Scores

Scale	Study *Mean*	Study *SD*	Norm *Mean*	Norm *SD*	*t*	*df*	*p*
A	7.4	1.67	8.8	2.34	-1.924	4	.127
B	10.0	1.56	6.3	1.49	4.766	4	.009*
C	13.0	4.18	10.3	2.99	1.438	4	.224
E	13.4	6.43	7.2	3.58	2.161	4	.097
F	15.0	4.06	8.4	3.09	3.628	4	.022*
G	11.8	3.35	11.8	2.77	.033	4	.975
H	13.0	6.88	7.9	4.08	1.680	4	.168
I	16.0	1.58	9.6	2.73	8.994	4	.001*
L	7.4	5.13	8.8	2.85	-.606	4	.577
M	14.6	2.07	9.6	2.81	5.413	4	.006*
N	8.8	.84	7.9	2.51	2.379	4	.076
O	12.4	2.70	8.2	3.40	3.451	4	.026*
Q1	8.4	1.82	7.9	2.39	.566	4	.602
Q2	14.6	2.07	8.4	2.88	6.729	4	.003*
Q3	9.6	4.51	9.0	2.92	.278	4	.795
Q4	15.2	2.59	7.9	3.38	6.315	4	.003*
D1	6.8	5.26	5.5	5.07	.544	4	.615
D2	1.8	1.48	4.4	5.07	-3.874	4	.018*
D3	10.6	4.62	11.0	3.30	-.179	4	.866

Table K 17 cont'd.

Scale	Study *Mean*	Study *SD*	Norm *Mean*	Norm *SD*	*t*	*df*	*p*
D4	7.6	2.07	8.2	4.13	-.615	4	.572
D5	7.8	6.98	9.0	6.43	-.385	4	.720
D6	3.2	2.39	7.7	5.71	-4.196	4	.014*
D7	2.8	1.30	4.9	3.73	-3.533	4	.024*
Pa	4.4	1.52	5.4	3.49	-1.430	4	.226
Pp	14.6	3.13	13.0	3.29	1.129	4	.322
Sc	4.0	1.22	4.9	3.91	-1.661	4	.172
As	3.2	3.11	7.1	4.08	-2.800	4	.049*
Ps	6.2	3.83	6.2	5.30	.023	4	.983

*p <.05

Table K18

Comparison of the Sten Norm to Sample Women Medicated for a Clinical Disorder

Scale	*Mean*	*SD*	*t*	*df*	*p*
A	3.2	.84	-6.147	4	.004*
B	8.0	1.59	3.536	4	.024*
C	4.2	1.30	-2.229	4	.090
E	6.2	3.03	.518	4	.633
F	8.2	1.92	.814	4	.481
G	4.8	1.79	-.875	4	.431
H	5.2	2.39	-.281	4	.793
I	8.4	1.14	5.687	4	.005*
L	5.4	3.36	-.067	4	.950
M	6.6	1.14	2.157	4	.097
N	4.8	.84	-1.871	4	.135
O	6.8	1.10	2.654	4	.057
Q1	5.8	1.30	.514	4	.654
Q2	8.0	1.22	4.564	4	.010*
Q3	3.8	2.39	-1.592	4	.187
Q4	7.2	1.10	3.470	4	.026*
D1	6.4	2.07	.970	4	.387
D2	5.6	1.14	.196	4	.854

Table K18 cont'd.

Scale	*Mean*	*SD*	*t*	*df*	*p*
D3	4.6	3.21	-.627	4	.585
D4	6.0	1.00	1.118	4	.326
D5	5.4	2.70	-.083	4	.939
D6	4.4	1.14	-2.157	4	.097
D7	5.2	.45	-1.500	4	.208
Pa	5.4	.89	-.250	4	.815
Pp	6.4	2.81	.772	4	.483
Sc	5.6	.89	.250	4	.815
As	3.8	1.64	-2.313	4	.082
Ps	6.2	1.64	.953	4	.395

*p <.05

Table K19

Second Order Sten Norm Comparison for Medicated Study Participants

Scale	*Mean*	*SD*	*t*	*df*	*p*
Ex	4.5	1.536	-1.512	4	.204
Ax	6.5	1.222	1.757	4	.154
Ct	4.4	1.48	-1.693	4	.168
In	7.1	1.773	2.017	4	.114
Se	3.9	2.354	-1.520	4	.203
So	4.72.002	-.871	4	.433	
D	5.7	1.871	.215	4	.840
P	5.4	.940	-.143	4	.983
Ne	6.0	2.237	.540	4	.618

*p <.05