ABSTRACT

SERAPHS OR SNAKES: CONSCIOUSNESS TRANSFORMATIONS IN A NORMAL SAMPLE, AND IMPLICATIONS FOR DIFFERENTIAL DIAGNOSIS IN “SPIRITUAL EMERGENCY”

by Matthew S. Allen

The present study reports on the prevalence of both growth-enhancing and dissociative consciousness transformations in a normal sample. 399 Undergraduates from Miami University were administered the Expressions of Spirituality Inventory (ESI), Dissociative Experiences Scale (DES), and Schizotypal Personality Scale (STA) subscales. Both factor analysis and cluster analysis revealed that indices of dissociative altered states loaded with measures of emotional conflict, while measures of mystical altered states did not. In both factor analysis and cluster analysis evidence of consciousness transformations involving elements of both mystical experience and dissociative states was also observed. The potential implications of these findings for differentiating between individuals in the early stages of intense spiritual experiences (including "spiritual emergency") and psychotic disorders are discussed.
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INTRODUCTION

Spiritual Emergency and Psychosis: The Problem

It has been recognized for some time that the consciousness transformations often encountered in intense spiritual experience and the positive symptoms of psychotic experience appear strikingly similar in many respects (c.f., Jackson, 1991). It has also been demonstrated that there are clear instances of mystical states, defined as spiritual emergence, involving intense consciousness transformations that lead to no distress, confusion or loss of contact with consensual reality (Nelson, 1990). Conversely, states of psychosis with negative symptoms predominating have been described as unambiguously pathological and subjectively frightening for the individual (Hunt, 1995; Nelson, 1990). This study contributes to a literature which has addressed possible psychometric markers of unambiguously positive consciousness transformations (c.f., Jackson, 1991; McCreery & Claridge, 2002). In addition, this study addressed the problems related to the interface and disjunction between spiritual openings with anomalous perceptual experiences that can be temporarily frightening and confusing for the individual (defined as spiritual emergencies or mystical experiences with psychotic features), versus the onset of the positive symptoms associated with the development of psychotic disorders that can often be initially pleasurable for the individual (Nelson, 1990; Lukoff, 1985).

These two forms of consciousness transformation are less readily distinguishable. Phenomena common to both experiences include loss of self-object boundaries, time distortion, various synesthesias, and the experience of “sudden understanding” (Jackson & Fulford, 1997). Often individuals with such experiences have contact with mental health professionals before their experiences have solidified into less ambiguous "symptoms" that facilitate more straightforward diagnosis and/or treatment.

Lukoff, Lu, and Turner (1998) have noted the lack of criteria for differential diagnosis in this area, and in 1991 proposed a “Psychospiritual Problems” V-code to the DSM-IV task force (Lukoff, Lu, & Turner, 1998). This proposal stated that:
Psychospiritual problems are experiences that a person finds troubling or distressing and that involve that person’s relationship with a transcendent being or force. These problems are not necessarily related to the beliefs and practices of an organized church or religious institution. Examples include near-death experience and mystical experience. This category can be used when the focus of treatment or diagnosis is a psychoreligious or psychospiritual problem that is not attributable to a mental disorder (Lukoff, Lu, & Turner, 1998).

The proposal was accepted but significantly altered by the DSM-IV task force (see Appendix A), and is included in the DSM-IV-TR as the “Religious or Spiritual Problem” (V62.89) V-code (American Psychiatric Association, 2000). Though the inclusion of this proposal in the DSM-IV has perhaps raised awareness of the issue (this appears to have been the authors’ goal), both the proposal and the final wording of the V-code lack the sort of specificity necessary for informing differential diagnosis. The primary goal of this project is to build upon recent research (e.g., Hunt, Dougan, Grant & House, 2002; McCreery & Claridge, 2002) which suggests the possibility of elucidating criteria with sufficient specificity to guide intervention and reduce iatrogenic harm.

Seraphs or Snakes: An Historical Overview

This problem of where—if anywhere—to draw the boundary between the beginnings of madness and the beginnings of the “divine madness” of intense spiritual states has existed within the Western intellectual tradition at least since Socrates (Lukoff, 1985). Within the short history of psychiatry and academic psychology, the “answer” to this question has typically been to ignore the possibility of growth enhancement associated with anomalous perceptual experiences and to conflate madness and “divine madness” under the general heading of pathology. Freud, for example, understood the mystical feeling of “oneness” with the world as a desire to return to “…the most primitive stage in the development of the ego, that of undifferentiation between self and mother, or primary narcissism” (Freud, 1930, in Epstein & Lieff, 1981, p.55). Such a perspective implicitly pathologizes intense spiritual experiences, and later workers have been explicit in this respect: “…reading the recorded descriptions of mystical states, we might well be inclined to make a diagnosis of (…) hysteria or schizophrenia; occasionally manic-depressive illness” (GAP, 1976, in Jackson, 1991, p.41).
Jackson & Fulford (1997) have characterized this conflation of the two larger categories of experience as the “no distinction” stance on psychosis and spiritual states. This “no distinction” position is, of course, equally compatible with a romantic view of psychosis. This perspective was explored in the 1960’s and 1970’s, when the failure of psychology and psychiatry to adequately explain psychosis within a medical model “disease” approach lead R.D. Laing (1969) and others to argue for the inverse of the “all pathological” equation put forward by Freud. Laing argued that the consciousness transformations observed in psychosis were all potentially positive “openings” that had gone awry as a result of negative feedback from sick families and / or a culture that had lost touch with any appreciation or understanding of healthy transcendent experience (Laing, 1969).

Though the work of Laing and the antipsychiatrists drew much-needed attention to the Eurocentrism of an approach which pathologizes all deviations from "normal" waking consciousness (Walsh & Vaughan, 1993), Laing’s approach has been discarded or revised by even the most sympathetic transpersonal psychologists (c.f., Nelson, 1990). While the consequences of Freud’s no distinction position have been well acknowledged (e.g., terminating spiritual openings with antipsychotic medicines), Laing’s no distinction position may have equally harmful consequences. As Nelson (1990) has pointed out, this perspective insists on an intervention model that has not consistently proved efficacious in meeting the needs of many individuals experiencing psychotic symptoms. Nelson (1990) has suggested that instead of eliminating diagnosis in this context, we might attempt to formulate more “diagnoses” that would more adequately represent the various shades of consciousness transformation observed along the continuum between advanced psychotic and spiritual states.

One response to the confusion between the two sorts of “no distinction” positions has been a stance that strictly separates spiritual experience from positively symptomatic psychosis (e.g., Wilber, 1984). This perspective, which Jackson and Fulford (1997) have characterized as the “no overlap” position, assumes that the psychological processes that are associated with spiritual experience and psychosis are entirely discrete. While this position may be an improvement over previous “no distinction” perspectives in that it does not reduce similarity to identity (Kemp, 2000), it also fails to provide much of an
explanation for the well-acknowledged similarities between the two states (Hunt, 2000). One of the primary aims of this study is to continue the work being done (e.g., Lukoff, et al., 1998) to clarify how these states manifest differently in early onset—without ignoring the observed similarities and possibility of overlap.

As such, this project takes a different approach, one already discernible in Freud’s time in the person of William James. James made it a point to stress both the similarities and differences between intense spiritual states and psychosis. James understood psychosis to be:

…a sort of religious mysticism turned upside down. The same sense of ineffable importance in the smallest events, the same texts and words coming with new meanings, …only this time the emotion is pessimistic: instead of consolations we have desolations; the meanings are dreadful; and the powers are enemies to life. …It is evident that from the point of view of their psychological mechanism, the classic mysticism and these lower mysticisms spring from the same mental level (italics added), from that great subliminal or transmarginal region of which science is beginning to admit the existence, but of which so little is really known. That region contains every kind of matter: “seraph and snake” abide there side by side (James, 1902, in Jackson, 2001, p.167).

James’s insistent that these experiences are not equivalent, yet “spring from the same mental level” is one that has received increasing attention in the last decade (Jackson, 1991; Jackson & Fulford, 1997). Two separate lines of research have explained the observed similarities between the two experiences by conceptualizing both as resulting from the same underlying trait. In North America, Hunt (2000) has argued that it is the trait of absorption, understood as a generic term indexing proclivity to the emotional and cognitive alterations observed in altered states of consciousness—that predisposes to both spiritual and psychotic states. Hunt has argued that individuals high on measures of absorption and other related constructs such as imaginative involvement and fantasy proneness will inevitably experience the nonconsensual phenomenological experiences associated with these constructs in either a more subjectively positive or negative fashion (Hunt, 2000). Consistent with this hypothesis, Hunt has demonstrated a relationship between imaginative absorption and spiritual experience in advanced
meditators, as well as nightmares and night terrors in normal populations (Hunt, Gervais, Shearing-Johns & Travis, 1992). Consistent with the finding that these traits are normally distributed in the population, Hunt, et al. (2002) have also demonstrated factor analytic evidence in normal samples high in absorptive traits of an attenuated version of the split between integrative and disintegrative experiencing of altered states seen in psychosis and spiritual states, with measures of absorption correlating positively with both measures of mystical states and dissociative experiences.

Similar conclusions have been reached in the U.K. by researchers who have conceptualized schizotypy (broadly understood as the ease of ability in crossing the threshold between different states of consciousness) as the common trait predisposing to both psychotic and spiritual states (Claridge, 1997). Consistent with this “fully dimensional” perspective on schizotypal traits have been findings that link schizotypy to both measures of spirituality (Jackson, 1991), and schizophrenia (Claridge, 1987). Unlike other researchers in the schizotypy tradition who have generally understood the trait to index only pathogenic tendencies, proponents of the full-continuity position like Claridge have been explicit that “…these traits describe both sources of healthy variation and predisposition to disorder” (Claridge, 1997, p.13).

Both schizotypy and absorption are thus understood to index a general proclivity to consciousness alteration that is normally distributed in the population. A graded continuum of this dimension of normal individual differences is understood to range from experiences indicative of slight alterations in consciousness (e.g., intense daydreaming) at one end, to radically nonconsensual phenomena such as out of body experiences at the other end. The finding (c.f., Jackson & Fulford, 1997) that spiritual and psychotic states are frequently phenomenologically similar would appear to imply that factors other than the anomalous experiences themselves, such as personality variables and / or life history, will play a key role in determining whether these experiences are relatively more growth enhancing or dissociative. Though the need for further research into questions regarding aetiology has been acknowledged (e.g., Jackson & Fulford, 1997), questions of this nature are beyond the scope of this project. This project limits its focus to the subjectively positive or negative states of awareness (or “symptoms”) that are the result of this hypothesized interaction between consciousness alteration and personality...
variables and / or life history. Before aetiological questions can be investigated, a less ambiguous understanding of which patterns of consciousness transformation can be justifiably assumed to be markers of relative “health” or relative “pathology” must be undertaken. Hunt has observed that:

…the more we move away from “molar” criteria like final outcome or growth potential toward the more “molecular” level of specific transformations in attention, perception, thought, and emotion, the more difficult it becomes to isolate features that would be by definition psychotic or mystical (Hunt, 2000, pp. 360-361).

This project envisions the possibility of finding such “molecular” criteria, criteria that will ultimately be necessary if reliable guidelines for differential diagnosis (and perhaps even treatment) are to be found.

Schizotypy

The relevance for this project of the large body of work within the “full continuity” schizotypy tradition has been acknowledged. Schizotypy has been defined as “…[a] trait characterized by reduced attentional inhibition and CNS stability (…) [that] allows relatively easy access to pre or unconscious processes” (Jackson, 1991, p.xiv). For several workers prominent within the schizotypy literature such as Eysenck (1976), Meehl (1990), and Chapman and Chapman (1984), schizotypy is understood as a pathogenic trait because the consciousness transformations associated with it are seen as little more than forms of attenuated psychosis (as cited in Claridge, 1997). Claridge (1997), has characterized this perspective as the “quasi dimensional” conceptualization of schizotypy, which acknowledges that “…continuity in [schizotypal traits] certainly exists, but only in so far as it represents a variation in an underlying disease process” (Chapman, 1997, p.12), or a “…a milder, or less fully expressed, form of schizophrenia itself” (McCreery & Claridge, 2002, p.152).

Such a perspective is supported by the well-established links between schizotypy and schizophrenia (c.f., Claridge, 1987). Normal subjects high in indices of schizotypy and diagnosed schizophrenics both demonstrate reduced ability in tasks which require stimulus identification after a delay or distracter task (Nakano & Saccuzzo, 1985), greater vulnerability to inaccurate priming (Beech & Claridge, 1987), weakened laterality in
hemisphere function (Rawlings & Claridge, 1984), and poor recall of binaurally presented text (Green, et al., 1983) (as cited in Claridge, 1987). Chapman & Chapman’s schizotypy measures of perceptual aberration and magical ideation have also been found to be highly reliable predictors of the need for later treatment for psychotic disorder (Hewitt & Claridge, 1989).

This quasi-dimensional perspective on schizotypal traits can generally be differentiated from that of a group of researchers in the U.K. (e.g., Claridge, 1997; Jackson & Fulford, 1997), who have claimed that schizotypy is equally compatible with normal (or even “above normal”) functioning. These authors suggest a “fully dimensional” perspective on schizotypy that understands it to be a neutral trait, normally distributed in the population, that predisposes to a range of consciousness alterations including both growth enhancing and pathogenic experiences. From the full continuity perspective, these traits only predispose to disorder; disorders such as schizophrenia are understood from within a diathesis-stress model that requires the existence of both a “schizotypal temperament” as well as additional risk factors unrelated to schizotypy (Claridge, 1987). Claridge has differentiated the full-continuity perspective on consciousness alteration from previous antipsychiatry perspectives based on the assumption of a biological component in schizotypality (Claridge, 1987). Consistent with this perspective, Claridge & Broks (1984) have argued that it is the schizotypal trait that is inherited in the relatives of schizophrenics. As has been observed, the inheritance of these traits does not inevitably lead to psychotic disorders; previous research has demonstrated the widespread existence of the characteristics hypothesized to result from these traits in nonclinical populations (Claridge, 1987).

The different assumptions taken within the “full” and “quasi” continuity perspectives on schizotypal traits have lead to confusion over the exact nature of the schizotypy construct. For the full-continuity researchers, “…schizotypy as a trait is in itself strictly neutral with respect to pathology” (McCreery & Claridge, 2002, p.151); for the quasi-continuity researchers, unhealthy schizotypal traits are assumed to exist. These differences can be seen in questionnaire content; for example, measures constructed within the quasi-continuous model have included items which attempt to capture attenuated versions of all psychotic symptoms, including anhedonic “negative
symptoms” (e.g., Chapman, Chapman & Raulin, 1976). As a result of these conceptual differences, a factor analysis of all prominent schizotypy scales resulted in a superordinate schizotypy construct comprised of three factors that parallel the symptoms of schizophrenia (Bentall, Claridge & Slade, 1989). The factors in this Combined Schizotypal Traits Questionnaire (CSTQ) (Bentall, Claridge & Slade, 1989) construct are (1) an “aberrant perceptions” factor that parallels the positive symptoms of schizophrenia, (2) an “introvertive anhedonia” factor paralleling the negative symptoms of schizophrenia, and (3) a “cognitive disorganization / social anxiety” factor that parallels the disorganization syndrome observed in schizophrenia (Rosa, Van Os, Fananas, Barrantes, Caparros, Gutierrez & Obiols, 2000).

Researchers within the quasi-continuity tradition have employed this superordinate CSTQ schizotypy construct in an effort to locate markers of “unhealthy schizotypy.” Contrary to these efforts are McCreery and Claridge’s (2002) comments that:

It may be that the real distinction is not so much between healthy and unhealthy schizotypy on the trait level as between healthy and unhealthy schizotypal “symptoms”—i.e. discontinuous, or phasic, events to which the underlying trait is but one contributory cause (McCreery & Claridge, 2002, p.151).

The question of which measure of schizotypy most accurately captures the "neutral" trait level proclivity to consciousness transformation (but not other symptoms unrelated to the trait level) would appear to be an empirical question, and the choice of the schizotypy measure used in this study was influenced by findings by McCreery and Claridge (2002).

McCreery and Claridge (2002) compared subjects who reported having an out-of-body experience with controls matched for age, gender, and class. The authors employed the CSTQ composite measure of schizotypality discussed previously, a 420 item composite measure of all widely-used schizotypy measures (Bentall, et al., 1989). The out-of-body experiencers scored significantly higher than controls on the aberrant perceptions and beliefs factor of the CSTQ, and thus as a group clearly experience radically nonconsensual phenomenological experiences. Consistent with the full continuity position, the out-of-body experiencers did not demonstrate any other forms of schizotypal symptomatology significantly different from controls. Instead, the out-of-
body experiencers demonstrated lower scores than controls on the negative symptoms / anhedonia factor at a nearly significant level (McCreery & Claridge, 2002). These results suggest that it is likely the aberrant perceptions (positive symptoms) factor which best indexes general predisposition to both positively and negatively valent altered states and not the other schizotypy factors associated with schizophrenic syndromes, such as anhedonia or cognitive disorganization.

The Schizotypal Personality Scale (STA) (Claridge & Broks, 1984) is a measure of schizotypy which has been found to load onto the aberrant perceptions / positive symptoms factor of the CSTQ (Bentall, et al., 1989), and its use in Jackson (1991) directly tested the question of whether this type of schizotypy measure could be correlated with both pathological and spiritual consciousness transformations. Within a normal sample, Jackson (1991) found a significant relationship between schizotypy, as measured by the STA, and the SEQ measure of spiritual experiences. Consistent with the common trait hypothesis, normal participants who reported greater frequency and intensity of spiritual experiences also had the highest schizotypy scores in this group (Jackson, 1991). In a separate sample of diagnosed schizophrenics, similar results were obtained but with higher overall scores on both the schizotypy and spirituality measures than in the normal sample. Consistent with the common trait hypothesis were the findings (1) of a relationship between high schizotypy and schizophrenic diagnosis, (2) of a significant relationship between schizotypy and spiritual experiences in both samples, and (3) the finding that the schizotypy scores of highly spiritual normals matched the schizotypy scores of the diagnosed psychotics (Jackson, 1991).

Oepen, Harrington, and Funfgeld (1990) have provided experimental evidence of the relationship between schizotypy and the benign experiencing of altered states. The authors divided a sample of normal subjects into high and low schizotypes (based on STA scores), gave all subjects mescaline-sulfate, and then assessed participants on two indices of pathological symptoms—the Brief Psychotic Rating Scale (BPRS) (Overall & Gorham, 1976), and a German language measure of paranoia and depression, the Paranoid-Depressivitats-Skala (PDS) (Von Zerssen, 1976) during the period of mescaline influence (Oepen et al., 1990). The high and low schizotypy groups could not be differentiated from each other on the pathology measures prior to mescaline intake, but
the low schizotypy group demonstrated higher scores on these measures during mescaline influence (Oepen, et al, 1990). Of relevance for this proposal (though not commented on by the study authors) was the finding that approximately one third the high schizotypy group did report the highest overall distress ratings, consistent with the hypothesis of a split between more integrative and disintegrative experiencing of consciousness transformations within those high in schizotypal traits. These results thus appear to demonstrate a direct link between schizotypal traits and both an increased comfort and heightened discomfort with altered states, consistent with the full continuity / common trait hypothesis.

Though there has been no empirical work in North America on the relationship between psychotic and spiritual experience which has incorporated the schizotypy construct, there are several studies which nonetheless report results consistent with the full continuity conceptualization of a common dimension of experience predisposing to both psychosis and spirituality. Stifler, Greer, Sneck, & Dovenmuehle (1993) examined a sample of inpatients who met DSM criteria for psychotic disorder, as well as a group of 30 Buddhist, Hindu, and Christian contemplatives “…of leadership stock within their groups” (Stifler, et al., 1993, p.371). The authors employed two scales of particular relevance to this study, the Hood Mystical Experience Scale (MES) (Hood, 1975), and Ego Grasping Scale (EGO) (Knoblauch & Falconer, 1986). The Hood MES is a measure of the elements of mystical experience: specifically altered states involving spatiotemporal perceptual alteration, an ineffable quality, numinosity, positive affect, a feeling of unity and absorption of the self into a larger whole (Stifler, et al., 1993). The EGO defines the construct of ego grasping as “a dualistic stance that is marked by the person’s attempts to make things more positive, while striving to eliminate the negative aspects of human existence” (Knoblauch, 1985, in MacDonald & Friedman, 2002, p.112).

Discriminant analyses revealed that the “contemplatives” and “psychotics” could not be differentiated from each other on Hood MES scores relative to a control group. In addition, the contemplatives and controls could not be differentiated from each other on ego grasping but both could be discriminated from the psychotics on this construct. Consistent with the full-continuity / common trait hypothesis, the significant differences
that were noted between mystics and psychotics on ego grasping scores would appear confirmation that the altered states present in both samples were experienced as benign by the adepts and frightening by the psychotics (Stifler, et al., 1993).

Dissociation is another construct that has been found to be related to both benign and pathological altered states (Jackson, 1991; Watson, 2001). Dissociation is defined as the “structured separation” of “mental processes such as thoughts, memories, feelings, and a sense of identity [that] are ordinarily integrated” (Irwin, 1999, p.157). Waller, Putnam, and Carlson (1996) have argued that the dissociation construct is multidimensional, allowing for the existence of both “healthy” and “unhealthy” forms of disassociation. Focus on one of the most widely used measures of dissociation, the Disassociative Experiences Scale (DES) (Bernstein-Carlson & Putnam, 1986), has identified three independent facets within the DES: (1) absorption and imaginative involvement, (2) derealization / depersonalization, and (3) amnesia for dissociative experiences (Waller, et al., 1996). Waller, et al. (1996) have argued that dissociative phenomena with absorptive-like qualities should be understood as “normal” and compatible with healthy functioning, while the other two facets should be understood as indexing pathological dissociation associated with clinical phenomena such as DID and PTSD. Consistent with this perspective is a recent study by Irwin (1999), in which it was found that various forms of childhood trauma predicted the pathological forms of dissociation but not dissociative absorption. The Dissociative Experiences Scale was included in this study because it provides both an index of the troubled (yet subclinical) experiencing of altered states that has been found to exist in normal populations (c.f., Hunt et al., 2002), as well as a subscale that measures non-pathological absorption.

Absorption

Broadly paralleling the full-continuity approach toward schizotypal traits has been work in North America focused on the construct of absorption. Like schizotypy, absorption is understood to be a trait with a hypothesized genetic component related to the propensity for experiencing altered states. More specifically, absorption is defined as “…a characteristic that involves an openness to experiencing emotional and cognitive alterations across a variety of situations (...); …high absorption people tend to adopt an experiential set, whereas low-absorption people tend to adopt an instrumental set” (Roche
Measures of other activities which involve a predominantly experiential set, such as imaginative involvement and fantasy proneness, have been found to be highly correlated with absorption (Hunt et al., 2002). Consistent with the fully-dimensional perspective on schizotypal traits are Tellegen’s comments that absorption “…can have a dissociative (“disaggretive”) or holistic (“reaggregative”) character depending on circumstances as well as the individual’s other personal characteristics” (Tellegen, 1986, in Roche and McConkey, 1990, p.92).

Focusing on absorption as the trait predisposing to both spiritual and psychotic experiences, Hunt has hypothesized a normally distributed continuum of absorptive traits strikingly similar to the “fully continuity” approach to schizotypy. Hunt conceptualizes spiritual states and psychotic experience as *potentialities* at the extreme end of this continuum of traits, and more specifically understands these consciousness transformations as “…two competing organizations of the same underlying dimension of experience” (Hunt, 2000, p.362).

Studies by Spanos and Moretti (1988) and Hunt et al. (2002), offer evidence in support of the role of absorption in both positive and negative consciousness transformations. Spanos and Moretti (1988) explored the correlates of benign spiritual experiences and “diabolical” experiences—pathological altered states with religious overtones. Consistent with Hunt’s view on the role of absorptive traits in both growth enhancing and pathogenic altered states, the authors found that both the Hood MES and the Diabolical Experiences Scale (Spanos & Moretti, 1988) were significantly correlated with absorption (Spanos & Moretti, 1988). Also consistent with previous findings (e.g., Stifler et al., 1993) regarding the similarity in phenomenology between growth enhancing and pathogenic altered states was the significant relationship between the Hood MES and the DES (Diabolical Experiences Scale) (Spanos & Moretti, 1988). Evidence of distinct differences between disintegrative and spiritual states was also found; diabolical experiences were correlated with both measures of neuroticism and psychosomatic symptoms, while the Hood MES was not related to either of these constructs (Spanos & Moretti, 1988).

Unlike previous studies which have focused on special populations at the extreme end of the proposed continuum of schizotypy/absorption, Spanos & Moretti’s (1988)
sample was limited to nonclinical college students. Such results are significant in that they appear to provide evidence for the full continuity hypothesis, and thus the existence of a subclinical experiencing of both positively and negatively valent consciousness transformations that parallels the more pronounced versions of these transformations observed in psychotic disorders and mystical experiences. Hunt, et al., (2002) employed a similar sample with a more extensive battery of measures. The absorption measures, the Tellegen Absorption Scale (Tellegen & Atkinson, 1974), McCrae and Costa’s (1992) Openness to Experience dimension of the NEO-PI, and a scale adapted from Hilgard’s (1974) Imaginative Involvement Rating Scale, were all found to be highly correlated with each other (as cited in Hunt et al., 2002). Consistent with the common trait hypothesis, these measures were all also correlated with both the Hood MES and the Dissociative Experiences Scale (DES) (Bernstein-Carlson & Putnam, 1986). The Hood MES and the DES, though both highly correlated with the absorption measures, were not found to be significantly correlated with each other (Hunt et al., 2002). Factor analysis demonstrated that the MES and DES loaded onto different factors, one a “disintegrative” factor which included measures of neuroticism, ego grasping, and the DES, and the other an “integrative” factor which included extraversion, the MES, and a negative relationship with ego grasping (Hunt, et al., 2002). In a replication study using the Tellegen scale (TAS) as the absorption measure, Hunt, et al. (2002) again found evidence of integrative and disintegrative consciousness factors within participants high in absorption, with the “conflicted” factor including measures of neuroticism, ego grasping, locus of control, and the DES, while the “integrative” factor included the MES and Tellegen scale (Hunt, et al., 2002). These two studies provide evidence of (1) a relationship between ego grasping and a conflicted experiencing of altered states, consistent with Stifler et al.’s (1993) findings, and (2) evidence for the utility of the DES as an index of the disintegrative experiencing of altered states in normal, nonclinical populations.

Both Spanos and Moretti (1988) and Hunt, et al. (2002) obtained these results with non-clinical, college samples. The apparent existence in these samples of consciousness transformations that appear to parallel, in an attenuated fashion, those found in spiritual states and psychosis is consistent with the full-continuity hypothesis, and thus appears to support a less categorical or taxonic understanding of both psychotic
disorders and spiritual states. It is also consistent with Hunt’s (2000) hypothesis that the consciousness transformations associated with heightened absorptive traits will inevitably be experienced in either a relatively more benign or frightening fashion. It is of relevance, however, to note that neither Spanos and Moretti (1988) nor Hunt, et al.’s, (2002) samples were random samples of undergraduates. Both samples consisted entirely of women, who have been demonstrated to often evidence significantly higher scores on measures of consciousness transformation (c.f., Claridge & Hewitt, 1987). In addition, Spanos and Moretti’s participants were recruited for a study advertised as involving “…religious attitudes and hypnosis” (Spanos & Moretti, 1988, p.107), and Hunt, et al.’s (2002) participants were recruited for a study which mentioned “…mystical and out-of-body experiences, vivid dreaming, lucid dreams, and nightmares (…)” (Hunt, et al., 2002, p.94) in its recruitment flyers. Hunt, et al., (2002) thus characterize their sample as consisting of “…those more predisposed to higher levels of absorption (…)” (Hunt, et al., 2002, p.102), though they did not provide any criteria for discriminating “high” absorption participants from “low” absorption participants. No established criteria exist for high absorption cutoff scores within the larger absorption literature (Levin & Fireman, 2001).

**Spirituality and Measurement**

Though the full continuity perspective on schizotypal and absorptive traits leads to a less categorical understanding of spiritual and psychotic states, little work can be accomplished with respect to establishing the “molecular” criteria necessary for differential diagnosis without provisional definitions (Jackson, 1991). Having acknowledged the necessity of provisional definitions inherent in trying to represent ostensibly “transverbal and transconceptual” spiritual experiences with psychometric methods (MacDonald, 2002, p. 2), Macdonald has constructed a comprehensive measure of the expressions of spirituality, the Expressions of Spirituality Inventory (ESI) (MacDonald, 2000). The ESI (short version) is a 32-item measure of transpersonal spirituality constructed through factor analysis of the most used and validated transpersonal measures (MacDonald, 2002).

MacDonald provisionally defines spirituality in terms of the five facets of the ESI: “…the dimensions may be understood as reflecting five different ways in which
spirituality may be expressed or communicated through both verbal and behavioral means” (MacDonald, 2002, p.2). The five factors include existential well being (EWB), experiential phenomenological dimension (EPD), cognitive orientation to spirituality (COS), paranormal beliefs (PAR), and religiousness (REL). The EPD facet captures the overt phenomenological “content” of spiritual states, and MacDonald reports that the EPD facet has been found to correlate with measures of absorption (e.g., NEO-PI Openness), as well as measures of integrative (e.g., self transcendence) and disintegrative altered states (e.g., temporal lobe signs) (MacDonald & Friedman, 2002). The Hood MES has also been found to correlate strongly with this facet of the ESI (MacDonald, 2000).

The EWB facet taps overall existential wellness as indexed by “…three general components: purpose and meaning in life (derived from any source), a sense of inner strength and perception of self as able to cope with the basic issues of life, and a relaxed orientation toward self and day-to-day matters” (MacDonald & Friedman, 2002, p.118). As noted previously, the Ego Grasping scale (EGO) (Knoblauch & Falconer, 1986) has proven useful in differentiating between those who experience altered states in a predominantly more benign or pathogenic fashion. Ego grasping has been found to correlate negatively with the EWB facet (MacDonald, 2000), and as a result high scores on the EWB facet would seem a probable indicator of growth enhancing altered states.

The paranormal beliefs (PAR) facet taps the belief in “occult” practices such as witchcraft and psychokinesis (MacDonald, 2002). This facet has shown positive correlations with NEO-PI Openness, as well as MMPI Paranoia and complex partial epileptic signs (MacDonald & Friedman, 2002). The existence within the ESI of this facet would seem to demonstrate the ambiguity that can exist within some patternings of spiritual experience, consistent with the hypothesized existence of a continuum of more or less “spiritual” or “psychotic” prototypes. MacDonald and Friedman appear to implicitly acknowledge the existence of such a continuum with their comment that:

Spirituality and associated transpersonal constructs are not related to psychological and physical functioning in a simple, unidirectional manner. Rather, it appears that the association is best characterized as complex [and] multidirectional (…) (MacDonald & Friedman, 2002, p.121).
Summary and Study Prospectus

Consistent with the “common trait” hypothesis, schizotypy has been demonstrated to be related to both the development of schizophrenia (Claridge, 1987; Jackson, 1991), as well as non-pathological spiritual experiences (Jackson 1991; McCreery & Claridge, 2002). Similarly, advanced mediators have been demonstrated to be high in imaginative absorption (Hunt, et al., 1992), as have individuals suffering from “diabolical” religious experiences (Spanos & Moretti, 1988). Factor analysis of data from non-clinical college samples high in absorption has shown evidence of consciousness transformations that appear to parallel (in an attenuated fashion) the healthy and pathological forms observed in mysticism and psychotic disorders respectively (Hunt, et al., 2002).

The results of these studies appear to provide support for the notion of a continuum of both growth enhancing and dissociative consciousness transformations related to schizotypal / absorptive traits. The existence of such a continuum implies a less “taxonic” understanding of both psychotic disorders and spiritual states and thus can account for the existence of both the relatively unproblematic (“spiritual emergence”) and distress causing (“spiritual emergency”) sorts of spiritual experiences described in the spirituality literature (c.f., Nelson, 1990). More importantly, the existence of this continuum suggests that data from normal samples provides a key link in our understanding of the development of both mystical experience and psychotic disorders. Not only does data from normal samples provide information about what, for example, a schizotypal temperament may look like prior to the hypothesized diathesis-stress event(s) leading to psychotic “break,” but it also provides clues about the nature and range of anomalous consciousness transformations before they are affected by other variables such as medication and/or inpatient treatment (Bentall, et al., 1989).

Such information will help lay further groundwork for the future goal this study intends to contribute to: providing mental health professionals with criteria for reliably determining whether a given individual’s anomalous perceptual experiences are likely to be experienced as more growth enhancing or pathological. Such criteria would not only be useful for differential diagnosis in ambiguous cases (i.e., differentiating spiritual emergency from psychosis), but also in less ambiguously presenting cases of spiritual
emergence. A need appears to remain for straightforward psychometric markers associated with any sort of growth enhancing consciousness transformation, given the documented "spirituality gap" between practitioners and their clients (Coyle, 2001) and thus the relative paucity of practitioner knowledge about the role of anomalous perceptual experiences in some spiritual states. Sanderson, Vandenberg & Pease (1999), for example, have demonstrated a positive relationship between unconventional religious experience and likelihood of pathogenic diagnosis in a sample of mental health professionals.

Though Lukoff (1985) and Grof & Grof (1989) have pursued this issue qualitatively, only Hunt (c.f., Hunt, et al., 2002) and Jackson (c.f., 1991) have systematically investigated the problem of differentiating between spiritual and pathogenic consciousness transformations in a fashion that could eventually lend itself to the production of criteria with sufficient psychometric specificity to guide differential diagnosis for "spiritually naïve" mental health professionals. Unfortunately, Hunt and Jackson do not reference each others' work, or appear to make any effort to extend or replicate the others' findings. As such, there is only a small empirical literature on the subject, no consensus regarding appropriate methodology, and few instances where constructs used in one study are compared or related to the constructs used in another.

This study addresses these shortcomings and systematically replicates and extends the findings of Hunt, et al., (2002) with the addition of an index of schizotypy, absent in Hunt’s research, and a comprehensive index of spirituality which Hunt, et al., (2002) have suggested be used in future research in this area. This project also incorporates a sensitivity to the multidimensional nature of the constructs under study. Consistent with the “full continuity” position, it is assumed that existent constructs which tap consciousness transformations will not necessarily always demonstrate the unequivocally positive or negative valence that is often attributed to them. For example, it has already been noted that diagnosed schizophrenics will score highly on spirituality measures (e.g., Jackson, 1991; Stifler, et al., 1993). The importance of attending to the multidimensionality of schizotypy, spirituality, and dissociation has been noted by Jones, Gray & Hemsley (1992), MacDonald & Friedman (2002), and Bernstein-Carlson & Putnam (1993) respectively. This approach, which has not been used in previous
research in this area, attempts to clarify, for example, which aspects of dissociation are related to pathological altered states and which aspects of dissociation are not.

Lastly, the study also adds the use of hierarchical cluster analyses to the factor analyses employed by Hunt, et al., (2002). Factor analyses reduce variables to factor solutions describing relationships amongst variables; cluster analyses group participants based on the similarity of their responses to variables (George & Mallery, 1995). Cluster analyses were included to address questions regarding both the prevalence of high absorption individuals within a random normal sample, as well as the number and nature of consciousness transformation subgroups observed within those participants high in absorption. It was hoped that information relevant for differential diagnosis in spiritual emergency would be obtained from these results.

Predictions
This project was designed to examine the following hypotheses:

(1) Based on the similar constructs which have been found to correlate with both schizotypy and absorption as well as their substantial conceptual overlap, it was predicted that measures of these constructs would show significant positive correlations. Additionally, it was predicted, consistent with the common trait hypothesis, that dissociation and mystical experience would both correlate positively with schizotypy and that absorption would also correlate positively with both mystical experience and dissociation. The ultimate existence of subjectively felt differences between growth enhancing and dissociative states was assumed to be paralleled in differences between measures of dissociation and mystical experience, which were predicted to not be positively correlated with each other at a significant level.

Consistent with the theory that schizotypal and absorptive traits are normally distributed in the population have been claims by Jackson (1991) and evidence offered by Hunt, et al., (2002) that evidence can be found in normal samples high in these traits of attenuated forms of consciousness alteration that parallel those in psychosis and spirituality. As noted earlier, no empirical criteria have been offered that provide guidelines with respect to what might constitute a significant enough presence of schizotypal or absorptive traits in a normal sample to result in evidence of this split. Previous research by Spanos and Moretti (1988) and Hunt et al. (2002) involved normal
subjects but included only female participants, who have been found to generally score higher on measures of absorption. This study employed a subject pool sample and as such was assumed to include many individuals who are not high on measures of these traits. In order to determine if factor analysis of high absorption participants generated different results from analysis of the entire sample, a separate factor analysis was included for participants demonstrating high absorption.

(2) Within individuals high on the absorption/schizotypy dimension, it was predicted that factor analysis would reveal 2 factors, one characterized by indices of growth consciousness transformations (i.e., mystical experience) and the other characterized by measures of disintegrative altered states (i.e., dissociation).

(2a) It was predicted that common to both consciousness factors would be positive loadings of measures of absorption and schizotypy. These measures are hypothesized to capture a general proclivity to altered states and conscious alteration, and previous studies have found that this trait is shared by both groups.

(2b) Consistent with previous findings (Hunt, et al., 2002), it was hypothesized that emotional well-being constructs found to be associated with unambiguously positive consciousness transformation, such as the existential well-being facet of spirituality, will load positively onto the growth enhancing factor. Emotional conflict constructs found to be associated with unambiguously disintegrative consciousness transformations, such as the paranoid and suspiciousness schizotypy facet and the amnesia facet of dissociation, were expected to load negatively onto this positive factor. Conversely, it was hypothesized that these unambiguously negative items would load positively onto the negative consciousness factor, while the existential well-being facet of spirituality would load negatively on this factor.

(2c) Though it was predicted that the consciousness transformations associated with schizotypal/absorptive traits will take either predominantly positive or negative forms, the full continuity perspective on these traits also makes allowances for an area of relative overlap between these forms of consciousness transformation. As such, it was predicted that one of the indexes of an ostensibly disintegrative consciousness transformation, the derealization and depersonalization facet of dissociation would load positively on the growth enhancing consciousness factor, while an index of spiritual
values and beliefs--the cognitive orientation to spirituality facet of spirituality would load positively on the negative factor. Though not hypothesized, the possible existence of a separate “overlap” consciousness transformation factor including both aspects of dissociation and spirituality was also considered. Results along either of these lines would be significant in that they would provide evidence contrary to the “no overlap” positions, which have postulated little, if any, relationship between psychotic and spiritual states.

(3) It was predicted that hierarchical cluster analysis would reveal multiple clusters of participants, with one cluster demonstrating low mean scores on indices of schizotypy and absorption. Consistent with previous factor analytic work (Hunt, et al., 2002), it was also predicted that 2 clusters of participants with high mean scores in absorption / schizotypy would be obtained, with one cluster indicative of positively valent consciousness transformations and the other indicative of negatively valent consciousness transformations. It was also predicted, consistent with Lukoff’s (1985) distinction between mystical experiences with psychotic features and psychotic disorders with mystical features, that two additional clusters would be obtained--one indicative of relatively more growth-enhancing consciousness transformations (with attendant emotional conflict), and the other relatively more pathogenic consciousness transformations with spiritual themes.

METHODS

Participants

399 undergraduate psychology students in the Miami University Psychology Department subject pool completed the study during the Fall 2003 school semester. The sample consisted of 274 females and 125 males (mean age 18.74; S.D. 1.53; range = 16-41). 94% of the sample reported Caucasian ethnicity. Participation was voluntary, and participants received research credit for their participation.

Measures

(1) The Expressions of Spirituality Inventory (short version) (ESI), (MacDonald, 2002). The ESI short version is a 32-item instrument designed to assess expressions of
the elements of spirituality (see Appendix B). The ESI was developed through factor analysis of 21 of the most widely used instruments designed to measure aspects of spirituality (MacDonald, 2000). A Five factor model of spirituality was derived, with the factors including cognitive orientation towards spirituality (COS), experiential / phenomenological dimension (EPD), existential well-being (EWB), paranormal beliefs (PAR), and religiousness (REL). Each facet is represented by 6 items which are scored on a 5 point Likert scale anchored at “strongly agree” and “strongly disagree.” The ESI short form has been shown to demonstrate good reliability; reliability alphas for the subscales are COS .87, EPD .81, EWB .80, PAR .82, and REL .89 (MacDonald, 2002).

As discussed previously, prior research has demonstrated that the EWB (emotional well-being) facet has proven to be a useful marker for differentiating between healthy and unhealthy forms of altered states respectively (MacDonald & Friedman, 2002). The Hood Mystical Experience Scale (MES) (Hood, 1975) used in previous studies loaded heavily onto the EPD (experiential-phenomenological) dimension of the ESI, and the EPD facet will serve as the primary measure of mystical consciousness transformation in this study.

(2) The Schizotypal Personality Scale (STA) is a 37 item subscale of Claridge’s Schizotypal Personality Questionnaire (STQ) (Claridge & Broks, 1984), which was constructed to capture the spirit of the DSM-III definition of schizotypal personality disorder with attenuated expressions of these symptoms that allow for good endorsement rates in normal populations (see Appendix C). Typical endorsement rates have been shown to be approximately 1 in 3 (Hewitt & Claridge, 1989). Consistent with the full continuity hypothesis regarding schizotypal traits, scores on the STA have been shown to be normally distributed (Hewitt & Claridge, 1989).

Factor analyses have demonstrated that the STA consists of three subscales: magical ideation, paranoia and suspiciousness, and unusual perceptual experiences (Hewitt & Claridge, 1989). Hewitt and Claridge (1989) found that 3 sets of 8 items most parsimoniously index the three subscales, and consensus has emerged (e.g., Rawlings, et al., 2001) that this 24-item version of the STA be employed in factor analytic work. Reliability alphas for the subscales are magical ideation .70, unusual perceptual experiences .74, and paranoia and suspiciousness .59 (Rawlings, et al., 2001). The STA
composite scale, presumably because of the magical ideation and unusual perceptual experiences subscales, has been found to load onto the positive symptom factor of the CSTQ (Bentall et al., 1989). These findings provide some support for the use of the STA as a measure of the “neutral” conceptualization of schizotypy as a basic proclivity to consciousness alteration as suggested by the full-continuity research tradition. The third subscale, paranoia and suspiciousness, appears to be an index of emotional conflict and correlates strongly with Eysenck's Neuroticism scale (Rawlings, et al., 2001). This subscale appears responsible for the high loading of the STA composite scale onto the social anxiety / cognitive disorganization factor of the CSTQ (Bentall, et al., 1989).

(3) The Dissociative Experiences Scale (DES) (Bernstein-Carlson & Putnam, 1986) is a widely used 28-item measure of dissociative tendencies (see Appendix D). The DES consists of 28 items rated by participants on a 0% to 100% scale (scored at 10 point intervals) in terms of what percentage of the time they have the experience. The larger construct of dissociation has been found to comprise 3 facets: absorption, amnesia for experiences, and depersonalization & derealization (Bernstein-Carlson & Putnam, 1993). These subscales have been found to have reliability alphas ranging from .77 to .90 (Frischholz, Schwartz, Braun & Sachs, 1991 as cited in Frischholz, Braun, Sachs & Schwartz, 1992). As noted earlier, consistent with the perspective on absorption advanced by Hunt, dissociative absorption is understood to be compatible with normal functioning, while the other two facets are assumed to be associated with pathogenic altered states ranging from DID to PTSD and schizophrenia (Bernstein-Carlson & Putnam, 1993).

Procedure

Participants completed the study in a large auditorium, with sufficient space between participants to guarantee the confidentiality of responses. Participants were verbally assured that their participation was voluntary, and signed consent forms that provided warnings about the potentially unsettling nature of the questionnaire material. Upon completion of the study, participants received a written debriefing statement which described the purpose of the study, provided information for contacting the principal investigator with any questions, and also provided information for those participants who
felt the need for counseling or crisis intervention as a result of their participation in the study. All tests were scored per authors' instructions.

RESULTS

Sex Differences

One way ANOVAs were performed in order to examine the effect of sex on the variables. Females scored significantly higher than males on both the ESI cognitive orientation to spirituality and the ESI religion scales (F = 4.620, p<.03; F = 5.587, p<.02). Females also demonstrated significantly higher ESI existential well-being scores (F = 6.720, p<.01). Though no differences were observed in measures of consciousness transformation, separate Pearson correlational analyses and varimax factor analyses for males and females were carried out. Female only and male only Pearson correlation analyses can be seen in Table 1 and Table 2 respectively. The results of these separate analyses were virtually identical to the results obtained from the entire sample (see Table 3). Separate female and male varimax factor analyses were also carried out (see Table 4 and Table 5 respectively) and were also found to be nearly identical to the results obtained from the varimax factor analysis of the entire sample (see Table 6). Based on the lack of different Pearson correlation and factor analytic results based on gender, only the results from the entire sample (N=399) are reported in what follows.

Correlations

A total of 14 measures were included in Pearson correlation analysis, including the two composite measures (i.e., the ESI and DES) and their subscales, as well as the subscales from the STA (see Table 5). Because of the similarity of constructs employed, the majority of variables were found to correlate with each other at a statistically significant level. Following a methodology previously employed in this area of research (c.f., Rawlings, et al., 2001), a correlation value of .3 was used as an index of noteworthy relationship between variables (see Table 5). Using this criterion, it is observed that both indices of beliefs and attitudes towards spirituality and religion (ESI religion and ESI cognitive orientation to spirituality) were notably correlated with each other and with the ESI experiential-phenomenological dimension, but no other variables. The emotional conflict and well-being measures, STA paranoia and ESI existential well-being, showed
inverse patterns of noteworthy correlation. STA paranoia correlated negatively with ESI existential well-being and showed positive notable correlations with STA unusual perceptual experiences, the DES composite measure, DES absorption, and DES depersonalization / derealization. ESI existential well-being demonstrated notable negative correlations with STA unusual perceptual experiences, STA paranoia, and the DES composite measure, as well as DES absorption and DES depersonalization / derealization.

The ESI experiential-phenomenological dimension and STA magical ideation measures of conscious transformation showed similar patterns of correlation, with some exceptions. ESI experiential-phenomenological dimension showed notable correlations with ESI religion and ESI cognitive orientation to spirituality (unlike STA magical ideation), while STA magical ideation correlated notably with DES absorption, unlike ESI experiential-phenomenological dimension. The other consciousness transformation measures, The DES composite measure, its subscales, and STA unusual perceptual experiences, showed noteworthy positive correlations with each other. These measures also showed notable negative correlations with ESI existential well-being and positive correlations with STA paranoia.

**Factor Analysis**

Tests of skewness were undertaken in order to determine the appropriateness of the variables for factor analysis. The ESI data (skew = -.250; kurtosis = -.062) and STA data (skew = .372; kurtosis = -.286) were not found to be significantly skewed, while the DES data (skew = 1.517; kurtosis = 2.679) was found to be markedly skewed. Visual inspection of the variables' histograms confirmed these observations. As a result, the ESI and STA subscales were included in the factor analyses, but the DES subscales were excluded to avoid the construction of the spurious factors that have sometimes been observed in previous factor analytic work with the DES (Bernstein-Carlson & Putnam, 1993). The DES composite score was included. Factors were extracted by principal components analyses and the rotation method was varimax with Kaiser normalization. The first three factors had eigenvalues greater than 1.0, and visual inspection confirmed that slope of the scree plot flattened between factors 3 and 4. A three factor solution was thus obtained, which accounted for 69% of the overall variance (see Table 6).
The first factor had an eigenvalue of 2.841, and accounted for 32% of the overall variance. It includes the DES composite and STA unusual perceptual experiences consciousness transformation measures. It also includes a negative loading of the ESI existential well-being measure and a positive loading of the STA paranoia scale. This factor appears to reflect the measurement of negatively valent consciousness transformations. The second factor had an eigenvalue of 2.192, and accounts for 24% of the overall variance. It includes the ESI experiential-phenomenological dimension measure of mystical experience. This factor also includes positive loadings for ESI cognitive orientation to spirituality and ESI religion and seems to capture the measurement of positively valent consciousness transformations associated with both Western and Eastern expressions of spirituality. A third factor had an eigenvalue of 1.190, and accounted for 13% of the overall variance. It included loadings of consciousness transformation measures observed on factor 1 (STA unusual perceptual experiences) and factor 2 (ESI experiential-phenomenological dimension), in addition to STA magical ideation and ESI paranormal. This factor seems to include indices of both positively and negatively valent consciousness transformations and as such may capture the measurement of the "grey area" of the consciousness transformation continuum in which positively valent and negatively valent altered states overlap.

Hunt, et al., (2002) characterized their sample as including participants “…more predisposed to higher levels of absorption …” (Hunt et al., 2002, p. 102), and in order to determine if an analysis of high absorption participants would affect the resulting factor component matrix, a separate factor analysis was carried out for high absorption participants. Median scores for STA magical ideation (3.7) and DES absorption (20.7) were used as cutoff criteria, and all participants with scores above the median split of both variables were coded as high absorption. 127 participants met this criterion. Results for the factor analysis of this data are can be observed in Table 7. Other than the nonsignificant loading of STA unusual perceptual experiences on the third factor, the resulting factor solution was identical to that obtained with the entire sample.

Cluster Analysis

Scores on each scale included in the factor analysis were calculated for each participant, and a hierarchical cluster analysis with agglomeration schedule and within
groups linkage was conducted. This analysis produced 5 clusters of participants based on calculation of minimum variance within each variable (see Figure 1 and Table 8). Williams (1994) has previously employed this procedure in schizotypy research because of its usefulness in generating classifications of participants in terms of their responses to variables. Though there is no consensus regarding a method for determining the most appropriate number of groups for data partitioning in hierarchical cluster analysis (Everitt, 1974), visual inspection of the dendogram output for large changes in fusion levels is frequently employed to answer this question (Everitt, 1993). Visual inspection of the dendogram suggested that a 5 cluster solution was most appropriate, given the notably large change in fusion level from a 5 to a 4 cluster solution.

Cluster 1 includes 108 participants (28% of the sample) with low scores on all consciousness alteration measures, including the lowest overall group mean score on ESI experiential-phenomenological dimension and STA unusual perceptual experiences. Cluster 1 members also reported the lowest overall group mean scores on ESI cognitive orientation to spirituality and ESI religion. Cluster 1 members thus experience relatively few of the sorts of consciousness transformations measured in the study and report little association with religious or spiritual values / institutions.

Cluster 2 includes 158 participants (42% of the sample) who also generally reported low scores on measures of consciousness transformation. Cluster 2 members have the lowest overall group mean score in STA magical ideation and the composite DES. Unlike cluster 1, however, cluster 2 members regularly endorse items indicative of a strong identification with religious/spiritual institutions and/or values. They have the highest overall group mean score in ESI religion and ESI cognitive orientation to spirituality. This cluster thus appears to comprise participants who identify strongly with spiritual institutions/values but who have not themselves experienced the sort of numinous or transcendent experiences sometimes associated with spiritual and religious practice. Taken together, clusters 1 and 2 comprise 70% of the overall sample, and thus indicate that the vast majority of participants in this sample do not generally endorse items indicative of consciousness transformation. Members of clusters 1 and 2 report little overall emotional conflict relative to the rest of the sample, as evidenced by high group ESI existential well-being mean scores and low group STA paranoia mean scores.
Cluster 3 includes 71 participants, 19% of the overall sample. Cluster 3 members have high group mean scores on indices of consciousness transformation; unlike clusters 4 and 5, however, cluster 3 members report little overall emotional conflict as evidenced by the lowest overall mean STA paranoia score and a mean ESI existential well-being score comparable with clusters 1 and 2. Also unlike clusters 4 and 5, cluster 3 members report relatively low overall scores on the DES composite and STA unusual perceptual experiences, measures of conflicted consciousness transformation. Cluster 3 would thus seem to include the members of this normal, nonclinical sample who experience positively valent consciousness transformations with minimal emotional conflict.

In contrast to cluster 3, cluster 5 members combine for high mean scores on measures of conflicted consciousness transformation, such as STA unusual perceptual experiences and the DES composite. The group mean score for cluster 5 was the second lowest overall on the index of mystical consciousness transformation, ESI experiential-phenomenological dimension. Cluster 5 members report the highest overall levels of emotional conflict, as evidenced by the highest mean STA paranoia score and the lowest mean ESI existential well-being score. Cluster 5 members report the second lowest mean scores on ESI religion and ESI cognitive orientation to spirituality and thus do not appear to hold strong spiritual or religious values. Cluster 5 thus includes the members of the sample who experience what appear to be unambiguously negatively valent consciousness transformations. Cluster 5 includes 22 participants and accounts for 6% percent of the sample.

Cluster 4 includes 21 participants (5% of the overall sample) who, like clusters 3 and 5, also regularly endorse items indicative of personal experience with consciousness transformation. Cluster 4 includes the highest overall group mean scores on all measures of consciousness transformation, both mystical and conflicted (i.e., the DES composite, STA unusual perceptual experiences, STA magical ideation, and ESI experiential-phenomenological dimension). Cluster 4 members combined for high group mean scores on ESI cognitive orientation to spirituality and ESI religion like cluster 2, but also evidenced relatively high mean STA paranoia and relatively low mean ESI existential well-being scores like cluster 5. In this respect, it seems that cluster 4 members experience consciousness transformations in an ambivalent fashion, endorsing items
consistent with both positively valent and negatively valent consciousness transformation as well as items indicative of emotional conflict.

DISCUSSION

Results & Previous Findings

The results were consistent with predictions. The central hypothesis was supported by evidence from a normal sample of unambiguously positive consciousness transformation, unambiguously negative consciousness transformation, and ambivalent consciousness transformation factors and clusters of participants. These results are also consistent with the full-continuity hypothesis. Results from the correlational analysis indicated that mystical experience was not notably correlated with paranoia (STA paranoia) or dissociation (the DES composite), while dissociation (the DES composite) was notably correlated with paranoia (STA paranoia) as well as showing a notable negative relationship with well-being (ESI EWB). STA magical ideation, as predicted, served as a useful measure of the “neutral” general proclivity to consciousness transformation as evidenced by positive noteworthy correlations with both positively valent (ESI EPD) and negatively valent (STA UPE) indices of consciousness transformation. The absorption index of neutral proclivity to consciousness alteration used in the study, the DES absorption subscale, did not show the same, predicted, relationship with both positively and negatively valent consciousness transformation measures as STA magical ideation did. Contrary to predictions, DES absorption showed a notable negative relationship with well-being (ESI EWB), a positive relationship with paranoia (STA paranoia), and no notable relationship with mystical experience (ESI EWB). The consistent pattern of noteworthy positive relationships with indices of negative valent consciousness transformations (i.e., STA UPE, and the other two DES subscales) suggests that DES absorption is more accurately understood as an index of pathogenic “symptoms.” Hunt, et al., (2002) have reported that the TAS (Tellegen & Atkinson, 1974) demonstrates relationships with both measures of mystical experience and the DES, and thus the TAS may serve as a better absorption-based index of neutral proclivity to consciousness alteration.
The results from factor analysis also were consistent with predictions, and replicate the results obtained by Hunt, et al. (2002) with the addition of a more detailed “ambivalent” consciousness transformation factor. As noted earlier, Hunt, et al.’s (2002) negatively valent consciousness transformation factors showed positive loadings of the DES, and the results of this study directly replicate those findings. In addition, Hunt, et al. (2002) consistently found positive loadings of neuroticism (NEO-PI “N”) on this negatively valent factor, which are paralleled by the positive loading of STA paranoia in this study. The STA previously has been found to have a substantial positive correlation (p<.001) with the EPQ neuroticism scale (Rawlings, et al., 2001). Ego grasping loaded positively onto both of Hunt, et al.’s (2002) negatively valent factors, and these results are also paralleled in this study by the negative loading of well-being (ESI EWB) onto the negative consciousness transformation factor. It has been demonstrated that a negative relationship exists between ESI EWB and ego grasping (MacDonald, 2000). Because different constructs were employed, the only common parallel between Hunt, et al.’s (2002) positively valent consciousness transformation factors and the results presented here is the positive loading of the Hood MES, which is paralleled by the positive loading of mysticism (ESI EPD) onto the positively valent consciousness transformation factor.

The cluster analytic results are broadly consistent with the factor analytic results, and all the consciousness transformation clusters (i.e., clusters 3-5) evidenced group mean scores that fell above the overall sample mean on all corresponding variables obtained in the factor analytic results. The cluster analysis also provided an estimate (30%, including clusters 3-5) of the prevalence of high levels of absorption and schizotypy in a normal sample. This percentage, it should be noted, may be inflated due to the experimentation with drugs and/or alcohol that is sometimes characteristic of college-age populations of this type. Relative to previous findings with large clinical samples, it appears that the mean DES scores of clusters 4 and 5 are comparable with mean DES scores from both PTSD and Dissociative Disorder NOS diagnosis populations (Bernstein-Carlson & Putnam, 1993). The mean group DES scores for both of these clusters were also more than one standard deviation above the sample mean for this study, and the ESI well-being scores for these clusters were also more than one standard
deviation below college sample norms published by MacDonald (2002). These results would seem to indicate that the conflict experienced by cluster 4 and 5 members is not trivial. These results, combined with the fact that cluster 4 members’ mean mysticism score is more than one standard deviation above college sample norms (MacDonald, 2002), lend support to the possible generalizability of the results from these clusters to larger populations experiencing conflicted consciousness transformations.

One limitation to the generalizability of the results from cluster 3 to populations experiencing intense spiritual consciousness transformation is the relatively average cluster mean mysticism (ESI-EPD) score relative to the rest of the sample mean and college population norms provided by MacDonald (2002). The cluster 3 group mean on mystical experience is above the sample mean, but well within one standard deviation of the sample mean as well as college sample norms (MacDonald, 2002).

In examining the results of the cluster analysis, it should be noted that one interpretation of the scores observed in cluster 4 is the possibility that this cluster is comprised of participants who answered the items with an “endorse everything highly” response set. While this interpretation is certainly possible, evidence contrary to this can be seen in wide confidence intervals and high standard errors of the mean for variables in this cluster relative to the other clusters (see Table 8). Indeed, cluster 4 members had either the widest or second widest confidence interval on all variables in the study relative to the other cluster groupings. Though these results can be accounted for by the smaller number of participants in cluster 4 relative to other clusters, they do indicate a lack of uniformity in response set within the members of cluster 4.

Though the lack of published norms for the STA subscales makes further interpretation of the cluster analytic results somewhat limited, the study’s results do appear to provide information about the nature of the STA composite measure and its potential usefulness as an index of neutral proclivity to consciousness transformation. The use of the STA subscales in this study indicates that the paranoia subscale, and to a lesser degree the unusual perceptual experiences scale, detract from the applicability of the STA composite measure as an index of neutral proclivity to consciousness alteration. As stated earlier, it appears that the STA magical ideation subscale better accomplishes this task on its own; this result suggests that a much narrower conceptualization of
schizotypy be used by full-continuity researchers who understand schizotypy strictly as an index of neutral proclivity to consciousness transformation. The results suggest that all other consciousness transformation measures employed in the study other than STA magical ideation are interpretable as indexes of “symptoms” resulting from this basic proclivity.

Implications and Limitations

The results show clear evidence of a subsection of the normal population that experiences unusual perceptual phenomena. For some of these individuals, these experiences are clearly distress causing, while for others they appear to entail minimal conflict. The full continuity perspective on schizotypal / absorptive traits allows for the possibility of an area of overlap between these predominantly growth enhancing and dissociative forms of consciousness transformation, and this study demonstrated both factor analytic and cluster analytic evidence of such a group (i.e., factor 3 and cluster 4). The cluster analytic results did not, however, differentiate this “ambivalent” group into relatively more growth enhancing and dissociative clusters as was predicted. It was anticipated that more detail about the disjunction between spiritual emergencies and psychotic disorders with mystical features (both “ambivalent” consciousness transformations) would be found. It seems possible that this level of detail might be captured with the introduction of additional variables, a larger, more diverse sample, or more sophisticated cluster analytic techniques. Alternatively, it may be that this level of detail is not discernible using traditional paper and pencil measures.

On a positive note, it is significant that the results appear to provide portraits of consciousness transformation prototypes that have qualities similar to the descriptions of both actual mystical and psychotic experiences discussed in the spirituality and psychiatric literature. Hunt (2000), for example, has noted an attitude of distrust toward and rejection of anomalous perceptions in diagnosed schizophrenics; the high scores on indices of consciousness transformation observed in cluster 5, combined with low religion, orientation to spirituality and paranormal scores, seems to directly parallel this “rejecting” style. Cluster 3 members, in contrast, evidenced an open attitude toward their experiences as evidenced by consistent endorsement of well-being items (ESI-EWB). It is important, however, to note that the observable differences between the positively
valent and negatively valent clusters obtained in this study does not imply the existence of different types of content in each experience. This question was not addressed in this study, but previous research has suggested that it is not so much form or content that distinguishes these states but rather an attitude of “…maximum openness and novelty [as opposed to] predominant contraction and defensive stasis” (Hunt, 2000, p.362).

Though information regarding disjunctions within ambivalent consciousness transformations was not obtained, it should be noted that the results do suggest some potentially important variables on which individuals presenting with anomalous perceptual experiences including religious or spiritual overtones may be evaluated. These include ESI well-being, STA paranoia, and the DES. The study results suggest that such an individual with low scores the DES and STA paranoia, combined with high scores on ESI well-being, is unlikely to be in need of psychiatric intervention. The gradual accumulation of psychometric information about unambiguously positive consciousness transformations may eventually make it possible for “spiritually naïve” practitioners and mental health workers to make spiritually sensitive referrals when confronted with individuals encountering such experiences.

It seems relevant, however, to reiterate that these results do not tell us very much about etiology, about the personality and/or life history variables that are assumed to interact with the basic proclivity to consciousness alteration. It is assumed that these factors likely play a significant role in determining whether the experiences are predominantly more growth-enhancing or not. One of these factors may indeed be how the individual is received by mental health professionals, and further examination of the role of iatrogenic harm is warranted.

It is hoped that this study’s results further the advancement of an approach toward psychotic disorders that straddles the middle ground between the romanticism of antipsychiatry, and the biological reductionism of contemporary psychiatry. Further study along these lines will benefit from the use of a less homogenous sample, assessment of more personality variables, and the gradual accumulation of more population norms from the measures of consciousness transformation under study. In addition, qualitative exploration of the experiences of individuals in the “overlap” area of consciousness transformation seems particularly warranted.


Appendix A

V62.89 Religious or Spiritual Problems

This category can be used when the focus of clinical attention is a religious or spiritual problem. Examples include distressing experiences that involve loss or questioning of faith, problems associated with conversion to a new faith, or questioning of spiritual values that may not necessarily be related to an organized church or religious institution.
Appendix B

This is a questionnaire which concerns your experiences, attitudes, beliefs and lifestyle practices pertaining to spirituality. Below are several statements. Read each statement carefully. Using the five point scale described below, rate the extent to which you agree with each statement as it applies to you and put your response in the space provided. There are no right or wrong answers. Please respond to every statement and respond as honestly as possible.

<table>
<thead>
<tr>
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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Neutral</td>
<td>Agree</td>
<td>Strongly Agree</td>
<td></td>
</tr>
</tbody>
</table>

1. Spirituality is an important part of who I am as a person
2. I have had an experience in which I seemed to be deeply connected to everything
3. It always seems that I am doing things wrong
4. It is possible to communicate with the dead
5. I believe that going to religious services is important
6. Spirituality is an essential part of human existence
7. I have had an experience in which I seemed to transcend space and time
8. I am not comfortable with myself
9. I believe witchcraft is real
10. I feel a sense of closeness to a higher power
11. I am more aware of my lifestyle choices because of my spirituality
12. I have had a mystical experience
13. Much of what I do in life seems strained
14. It is possible to predict the future
15. I see myself as a religiously oriented person
0---------------1---------------2---------------3---------------4
Strongly Disagree Neutral Agree Strongly Agree

_____ 16. I try to consider all elements of a problem, including its spiritual aspects, before I make a decision

_____ 17. I have had an experience in which I seemed to merge with a power or force greater than myself

_____ 18. My life is often troublesome

_____ 19. I do not believe in spirits or ghosts

_____ 20. I see God or a Higher Power present in all the things I do

_____ 21. My life has benefited from my spirituality

_____ 22. I have had an experience in which all things seemed divine

_____ 23. I often feel tense

_____ 24. I think psychokinesis, or moving objects with one’s mind is possible

_____ 25. I practice some form of prayer

_____ 26. I believe that attention to one’s spiritual growth is important

_____ 27. I have had an experience in which I seemed to go beyond my normal everyday sense of self

_____ 28. I am an unhappy person

_____ 29. It is possible to leave your body

_____ 30. I believe that God or a Higher Power is responsible for my existence

_____ 31. This questionnaire appears to be measuring spirituality

_____ 32. I responded to all statements honestly
Appendix C

These questions are answered with a simple “yes” or “no” response.

<table>
<thead>
<tr>
<th></th>
<th>Question</th>
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<th>No</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Do you believe in telepathy?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Are you sometimes sure that other people can tell what you are thinking?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Do you ever feel that sure that something is about to happen even though there doesn’t seem to be a reason?</td>
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<td></td>
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<tr>
<td>4</td>
<td>Do you ever suddenly feel distracted by distant sounds that you are not normally aware of?</td>
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<tr>
<td>5</td>
<td>Do you ever have a sense of vague danger or sudden dread for reasons you do not understand?</td>
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<td></td>
</tr>
<tr>
<td>6</td>
<td>Do you sometimes feel that your accidents are caused by mysterious forces?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Do you believe that dreams can come true?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Are your thoughts sometimes so strong that you can almost hear them?</td>
<td></td>
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</tr>
<tr>
<td>9</td>
<td>Have you ever felt that you are communicating with another person telepathically?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Does your voice seem distant, far away?</td>
<td></td>
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<tr>
<td>11</td>
<td>Does it often happen that almost every thought suggests an enormous number of ideas?</td>
<td></td>
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<tr>
<td>12</td>
<td>Have you ever felt when you looked in a mirror that your face seemed different?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Do things sometimes feel as if they weren’t real?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Have you ever had the sensation of your body or part of it changing shape?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Have you ever thought you heard people talking only to discover that it was in fact some nondescript noise?</td>
<td></td>
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<tr>
<td>16</td>
<td>Do you ever feel that your thoughts don’t belong to you?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>When coming to a new situation have you ever felt strongly that it was a repeat of something that had happened before?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Do you often feel that other people have it in for you?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Do you feel lonely most of the time, even when you are with other people?</td>
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<tr>
<td>20</td>
<td>Are you often bothered by the feeling that people are watching you?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Do you feel that you cannot get close to people?</td>
<td></td>
<td></td>
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<tr>
<td>22</td>
<td>Do you dread going into a room by yourself where other people are already gathered and talking?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Do you feel that you have to be on guard even with your friends?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Do you sometimes feel that people are talking about you?</td>
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</table>
Appendix D

Directions:
This questionnaire consists of twenty-eight questions about experiences that you may have in your daily life. We are interested in how often you have these experiences. It is important, however, that your answers show how often these experiences happen to you when you are not under the influence of alcohol or drugs. To answer the questions, please determine to what degree the experience described in the question applies to you and circle the number to show what percentage of the time you have the experience.

Example:

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
(never) (always)

1. Some people have the experience of driving a car and suddenly realizing that they don’t remember what has happened during all or part of the trip. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

2. Some people find that sometimes they are listening to someone talk and they suddenly realize that they did not hear part or all of what was just said. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

3. Some people have the experience of finding themselves in a place and having no idea how they got there. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

4. Some people have the experience of finding themselves dressed in clothes that they don’t remember putting on. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

5. Some people have the experience of finding new things among their belongings that they do not remember buying. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
6. Some people find that they are approached by people that they do not know who call them by another name or insist that they have met them before. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

7. Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something and they actually see themselves as if they were looking at another person. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

8. Some people are told that they sometimes do not recognize friends or family members. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

9. Some people find that they have no memory for some important events in their lives (for example, a wedding or graduation). Mark the line to show what percentage of the important events in your life that you have no memory for.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

10. Some people have the experience of being accused of lying when they do not think that they have lied. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

11. Some people have the experience of looking in a mirror and not recognizing themselves. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

12. Some people sometimes have the experience of feeling that other people, objects, and the world around them are not real. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

13. Some people sometimes have the experience of feeling that their body does not seem to belong to them. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
14. Some people have the experience of sometimes remembering a past even so vividly that they feel as if they were reliving that event. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

15. Some people have the experience of not being sure whether things that they remember happening really did happen or whether they just dreamed them. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

16. Some people have the experience of being in a familiar place but finding it strange and unfamiliar. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

17. Some people find that when they are watching television or a movie they become so absorbed in the story that they are unaware of other events happening around them. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

18. Some people sometimes find that they become so involved in a fantasy or daydream that it feels as though it were really happening to them. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

19. Some people find that they sometimes are able to ignore pain. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

20. Some people find that they sometimes sit staring off into space, thinking of nothing, and are not aware of the passage of time. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

21. Some people sometimes find that when they are alone they talk out loud to themselves. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
22. Some people find that in one situation they may act so differently compared with another situation that they feel almost as if they were two different people. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

23. Some people sometimes find that in certain situations they are able to do things with amazing ease and spontaneity that would usually be difficult for them (for example, sports, work, social situation, etc.). Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

24. Some people sometimes find that they cannot remember whether they have done something or have just thought about doing that thing (for example, not knowing whether they have just mailed a letter or have just thought about mailing it). Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

25. Some people find evidence that they have done things that they do not remember doing. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

26. Some people sometimes find writings, drawings, or notes among their belongings that they must have done but cannot remember doing. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

27. Some people sometimes find that they hear voices inside their head that tell them to do things or comment on things that they are doing. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

28. Some people sometimes feel as if they are looking at the world through a fog so that people and objects appear far away or unclear. Circle a number to show what percentage of the time this happens to you.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Table 1: Female-Only Pearson Correlations

<table>
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<th>ESI-COS</th>
<th>ESI-EPD</th>
<th>ESI-EWB</th>
<th>ESI-REL</th>
<th>STA-MAG</th>
<th>STA-UPE</th>
<th>STA-Paranoid</th>
<th>DES-Amnesia</th>
<th>DES-Absorption</th>
<th>DES-Depersonal/Derealization</th>
<th>DES-Overall</th>
<th>ESI-Overall</th>
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<td>.054</td>
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</table>

*p<.05  
**P<.01

ESI-COS = Cognitive orientation to spirituality  
ESI-EPD = Experiential-phenomenological dimension  
ESI-EWB = Existential well-being  
ESI-REL = Religion  
STA-MAG = Magical ideation  
STA-UPE = Unusual perceptual experiences  
STA-Paranoid = Paranoid  
DES = Dissociative experiences scale  
DES Depersonal/Derealization = Depersonalization & derealization
### Table 2: Male-Only Pearson Correlations

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<th>ESI-EWB</th>
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<th>DES-Absorption</th>
<th>DES-Depersonal/Derealization</th>
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* * p<.05  
** p<.01

ESI-COS = Cognitive orientation to spirituality  
ESI-EPD = Experiential-phenomenological dimension  
ESI-EWB = Existential well-being  
ESI-REL = Religion  
STA-MAG = Magical ideation  
STA-UPE = Unusual perceptual experiences  
STA-PAR = Paranoid  
DES = Dissociative experiences scale  
DES Deperson / Derealiza = Depersonalization & derealization
### Table 3: Whole Sample Pearson Correlations

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*p<.05  
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**BOLD indicates noteworthy relationships (r>.3)**

ESI-COS = Cognitive orientation to spirituality  
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DES = Dissociative experiences scale  
DES D&D = Depersonalization and derealization
**Table 4:** Significant Varimax Factor Analysis Loadings (Women Only)

Factor 1: Positively Valent Consciousness Transformation

- ESI cognitive orientation to spirituality .947
- ESI experiential-phenomenological dimension .671
- ESI religion .940

Factor 2: Negatively Valent Consciousness Transformation

- ESI existential well-being -.801
- STA unusual perceptual experiences .597
- STA paranoid .841
- DES composite .651

Factor 3: Ambivalent Consciousness Transformation

- ESI experiential-phenomenological dimension .480
- ESI paranormal .748
- STA magical ideation .816
- STA unusual perceptual experiences .507
Table 5: Significant Varimax Factor Analysis Loadings (Men Only)

**Factor 1: Negatively Valant Consciousness Transformation**
- ESI existential well-being -.822
- STA unusual perceptual experiences .613
- STA paranoia .806
- DES composite .665

**Factor 2: Positively Valant Consciousness Transformation**
- ESI cognitive orientation to spirituality .944
- ESI experiential-phenomenological dimension .630
- ESI religion .925

**Factor 3: Ambivalent Consciousness Transformation**
- ESI experiential-phenomenological dimension .421
- ESI paranormal .830
- STA magical ideation .878
**Table 6:** Significant Varimax Factor Analysis Loadings (Entire Sample)

**Factor 1: Negatively Valent Consciousness Transformation**
- ESI existential well-being -.803
- STA unusual perceptual experiences .611
- STA paranoia .828
- DES composite .663

**Factor 2: Positively Valent Consciousness Transformation**
- ESI cognitive orientation to spirituality .949
- ESI experiential-phenomenological dimension .643
- ESI religion .938

**Factor 3: Ambivalent Consciousness Transformation**
- ESI experiential-phenomenological dimension .448
- ESI paranormal .788
- STA magical ideation .835
- STA unusual perceptual experiences .439
Table 7: Significant Varimax Factor Analysis Loadings (High Absorption Group)

Factor 1: Negatively Valent Consciousness Transformation

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STA unusual perceptual experiences  .594
STA paranoid  .833
DES composite  .565

Factor 2: Positively Valent Consciousness Transformation

ESI cognitive orientation to spirituality  .942
ESI experiential-phenomenological dimension  .576
ESI religion  .936

Factor 3: Ambivalent Consciousness Transformation

ESI experiential-phenomenological dimension  .501
ESI paranormal  .676
STA magical ideation  .863
Figure 1: Cluster Analysis Results

- ESI-COS
- ESI-EPD
- ESI-EWB
- ESI-PAR
- ESI-REL
- STA-MAG
- STA-JPE
- STA-PAR
- DES

Mean Scores

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Cluster 2
Cluster 3
Cluster 4
Cluster 5
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