Mystical Experiences in Nature

Abstract

Although research in ecopsychology commonly identifies the value of spiritual experiences in nature for psychological well-being and environmental behaviour, previous research has not compared the outcomes of these experiences in natural and human-built settings. In the present study, the relationship between self-reported mystical experiences in natural and human-built environments for psychological well-being and environmental behaviour was investigated. A sample of 305 participants completed an amended version of Hood's Mysticism Scale, a measure of psychological well-being, and brief environmental behaviour scale. Correlations indicated that mystical experiences in natural and in human-built environments both significantly predicted psychological well-being, but only mystical experiences in natural settings predicted environmental behaviour. This study suggests that mystical experiences in natural and human-built environments may be related to different outcomes.

Key words: mystical experiences, psychological well-being, environmental behaviour, environmental psychology, ecopsychology

Mystical Experiences in Nature: Comparing Outcomes for Psychological Well-Being and Environmental Behaviour

The value of affective experiences in natural environments, that is, experiences in nature which move us deeply, is a consistent theme in much of the ecopsychology literature and research. Ecopsychology has been conceptualized as an environmentally focused psychology, which privileges the lived experience of human-nature relationships (Doherty, 2010). Some authors argue specifically for the value of animistic, transpersonal, spiritual, or peak experiences in nature for improving psychological well-being and our relationship toward the natural world (Davis, 2013; Snell, Simmonds, & Webster, 2011). However, due to conceptual and measurements difficulties, few studies have attempted to compare the outcomes of these experiences in natural environments with other environmental settings. This kind of evaluation is required if one is to speak of any unique benefits of animistic, transpersonal, spiritual or peak experiences in natural environments. The aim of the present research was to compare the outcomes of these experiences in natural and human-built environments for psychological well-being and environmental behaviour.

In the present research, we draw on the concept of mysticism first articulated by Stace (1960), and subsequently used by Hood (1975) in the development of his Mysticism (M) Scale. It provides a clear definition of and categorization of spiritual and peak experiences, allowing for measurement and comparison of these experiences in different environments. Stace (1960) defined mysticism as the experiential core of human religious experience, without necessitating religious beliefs. His philosophical review of mysticism in various religious and non-religious traditions identified a range of common themes that characterize an experience as mystical; including experiences of a loss of self, a sense of oneness, consciousness in all things, a loss of

sense of space and time, profound joy and ecstasy, ineffability of experience, sacredness or holiness, and acknowledging that the experience provides a new sense of knowledge or reality. Hood's (1975) Mysticism (M) Scale was designed to assess mysticism drawing upon each of these eight categories of experience. Hood describes mysticism as a common experience within and outside of faith traditions, referring to non-religious spirituality as a form an 'unchurched mysticism' (Hood & Chen, 2012; Streib & Hood, 2013). The conceptualization of mysticism provided by Stace (1960) and Hood (1975) suitably reflects the form of spirituality described in the ecopsychology literature, which highlights a number of different qualities of experience in nature including an awareness of spirit or consciousness, fascination and awe, connectedness, oneness, and ego-transcendence, often without a specific theological context (see for example, Davis, 2013 and Roszak, 2001).

Concerning how mystical experiences in natural environments might result in greater psychological well-being, it is important to consider that mystical experiences generally result in greater psychological well-being. Research suggests that spiritual experiences are predictive of a range of positive psychological and health outcomes (Underwood & Teresi, 2002), and that this relationship is independent of religious involvement (Ellison & Fan, 2008). Earlier research notes that mystical experiences, as measured by the Mysticism Scale (Hood, 1975), significantly predict self-reported life satisfaction and purpose in life (Byrd, Lear, & Schwenka, 2000). Underwood and Teresi (2002) suggest that spiritual experiences may act as a buffer against stress, as these experiences are positively associated with optimism and positive affect, and negatively associated with social stress.

Additionally, natural environments may be more likely to elicit mystical experiences than human-built settings. Survey research indicates that contact with and

viewing natural environments are commonly reported triggers of transcendent (Keutzer, 1978), ecstatic (Laski, 1968), and mystical experiences (Hood, 1977). Phenomenological (DeMares, 2000; Fredrickson & Anderson, 1999) and quantitative research (Williams & Harvey, 2001) confirms that the presence of wild animals, wilderness landscapes, and forest environments can act as triggers for mystical experiences. Williams and Harvey (2001) argue that the situational characteristics of an environment contribute to the quality of these experiences, and that the concept of fascination helps to make sense of why transcendent experiences may occur in nature.

Fascination refers to involuntary attention, when exciting and interesting stimul draw attention without effort (Kaplan & Kaplan, 1989). Kaplan and Kaplan (1989) suggest that natural environments are well suited to elicit soft fascination, when attention is drawn but mental reflection can take place at the same time. This kind of fascination is required for the restoration of diminished psychological resources to take place, and natural environments are therefore considered well-suited for attention restoration. Empirical research confirms that natural environments are better suited for attention restoration than urban settings (Berto, 2005; Hartig, Evans, Jamner, Davis, & G ärling, 2003). Moreover, Kaplan and Kaplan (1989) note that the final stage of attention restoration is associated with reflection on life, goals, priorities and possibilities. In this final stage, spiritual experiences may occur, which the authors equate with the "sacred grove" experience described in ancient philosophy. As researchers such as Demares (2000), and Williams & Harvey (2001) have noted, there may be some correlation between environments that elicit fascination and environments that result in mystical experiences. Attention Restoration Theory therefore helps to make sense of why natural environments may be more likely to elicit mystical experiences. Taken together, this research suggests that although

mystical experiences in any environment might predict psychological well-being, these experiences may be more likely to occur in natural settings.

In addition, viewing nature scenes and having contact with nature, have been shown to predict a range of positive psychological outcomes (see Hansen-Ketchum and Halpenny, 2010, and Maller et al., 2005, for a review). As individuals have to be in contact with nature for mystical experiences in nature to occur, any significant relationship between mystical experiences in nature and psychological well-being might be confounded by the benefits of direct contact with nature. If mystical experiences in nature do predict psychological well-being independently of contact with nature, one would expect to see a significant relationship even when contact with nature is accounted for.

Concerning how mystical experiences in natural environments might predict environmental behaviours, seminal authors in ecopsychology such as Roszak (2001), and Shepard (1982) argue that an innate environmental reciprocity might be "awakened" when an individual experiences themselves as part of the natural environment. Beyer (2014) describes this as an experiential identification with the natural world, where an individualized identity is transcended to a more expansive non-egoic form of self, resulting in greater concern for nature as if it were part of self. Mayer and Frantz (2004) have drawn parallels between this relationship and developments in social psychology, indicating that empathetic and altruistic behaviour is encouraged when one's sense of self encompasses the subject of affection. Recent research indicates that the experience of oneness or connectivity with nature may be related to environmentally responsible behaviour (Garfield, Drewecki, Moore, Kortenkamp, & Gracz, 2014; Hinds & Sparks, 2009), and a number of authors comment on how this experience can be conceptualized as spiritual

(Dutcher, Finley, Luloff, & Johnson, 2007; Guiney & Oberhauser, 2009). Roszak (2001) and others argue that we feel this connection as children but are 'educated' out of it.

In the present study a series of hypotheses were developed to contrast the outcomes of mystical experiences in natural and human-built environments, drawing on the background of theoretical and empirical research described above. These were:

1. Individuals will report significantly more mystical experiences in natural environments relative to human-built settings.
2. Mystical experiences in natural and human-built environments will significantly predict psychological well-being.
3. Mystical experiences in natural environments will significantly predict environmental behaviour, mystical experiences in human-built environments will not.
4. Mystical experiences in natural environments will significantly predict psychological well-being after controlling for contact with nature and demographic variables.

Method

Participants

Participants, recruited from Australian sources, comprised 307 individuals, 63 males and 244 females, with a mean age of 36.08 years (*SD* = 13.40). In total, 115 participants identified themselves as religious and 192 as non-religious. Main participant occupations included student (*N* = 88), psychologist, psychotherapist, or counsellor (*N* = 58), teaching or education (*N* = 28), researcher or academic (*N* = 28),

administration (N = 17). Most participants, 89.9%, reported that they had spent most of their adult life in a human-built settings and 10.1% in a mostly natural area, with these figures closely resembling that of the population distribution in Australia (Australian Bureau of Statistics, 2008b). In comparison to other Australian population demographics, the sample was somewhat younger, over represented females, students, psychologists, and non-religious populations (Australian Bureau of Statistics, 2008a; 2010).

Procedure

A non-experimental survey design was used to test for relationships among a large sample base. An online survey approach, using Qualtics, was chosen in order to maximize the number of participants who were able to complete the questionnaire quickly and efficiently. Participants responded to various advertisements posted online at a large university, The Australian Psychological Society (APS), and Facebook which sought participation from individuals who had had a spiritual experience. Participants were required to complete each item of the online questionnaire that took approximately twenty minutes to complete. Ethics approval was granted by the Monash University Human Research Ethics Committee (MUHREC).

Measures

The questionnaire included five demographic questions to be used as control variables and so that the research sample could be compared with the Australian

general population. Variables included age, gender, religion, occupation, and location. For age and gender, participants selected the correct response from a drop down list. For religion and occupation, participants were able to type in their response. For location, participants were asked to select where they had lived most of their life as an adult (18 years and over), from urban, suburban, country, or wilderness.

Contact with Nature

Participants were asked to identify how often they visited four different natural environments (parks, gardens, beaches, and wilderness) on a five point Likert scale from (1) *very rarely/never* to (5) *almost every day*. These environments were considered the most representative of the different natural environments that participants might visit. Contact with nature was then evaluated by adding scores across each of the four environments.

Mystical Experiences in Nature

The M scale (Hood, 1975) was adapted to assess mystical experiences in natural and human-built environments. The original Mysticism Scale includes 32 questions designed to reflect eight different categories of mystical experience drawn from Stace's (1960) philosophical approach to mysticism (Ego Quality, Unifying Quality, Inner Subjective Quality, Temporal Spatial Quality, Noetic Quality, Ineffability, Positive Affect, and Religious Quality). Hood (1975) developed four questions to reflect each of these eight categories, with two questions worded positively and two questions worded negatively. Hood claimed that this was in order to avoid problems of response set when correlating the scale with other measures.

Changes were made to the instructions for the Mysticism Scale, such that participants were asked to note a description of an experience and rate how much the description applied firstly to their own experiences in natural environments and secondly to their experiences in human-built environments. Examples of natural environments provided to participants in the scale instructions included parks, gardens, beaches, and wilderness settings. Examples of human-built environments included villages, towns, cities, inside buildings, and urban environments. For each item of the amended scale, participants were asked to select how true each experience was for them in natural and human-built environments. These responses were then scored according to Hood's (1975) instructions. For example, question one asked participants to rate their agreement with the statement "I have had an experience that was both timeless and spaceless", which participants responded to on two scales, "in nature" and "in human built environments", with each scale ranging from 1 (*definitely not true)* to 5 (*definitely true*).

Based on feedback from a pilot group of twenty participants, it was decided to reduce the number of questions in the Mysticism Scale so that the questionnaire was less repetitive and individuals would be more likely to complete the study. Negative response items were therefore removed from the Mysticism Scale. Although this introduced the possibility of response set acquiescence, planned comparisons were only intended between two versions of the same amended Mysticism Scale. It was considered that the benefits of a shorter mysticism scale outweighed potential problems that might arise through positive response sets. The final amended Mysticism Scale included 16 items, each with two levels referring to natural and human-built environments. With these amendments, two scales were developed

measuring mysticism in natural (MN) and mysticism in human-built environments (MH).

Psychological Well-being

The Short Warwick-Edinburgh Mental Well-Being Scale (WB, Stewart-Brown et al., 2009) was used to assess for psychological well-being, as this measure only includes items that are related to psychological well-being, rather than general or spiritual well-being. As Koenig (2008) notes, measures of spirituality that are contaminated with items that reflect general mental health are not appropriate to test for relationships between spirituality and mental health. This scale was developed by the National Health Service in the United Kingdom to specifically measure positive aspects of psychological well-being, free of ceiling effects in normal populations. Additionally, the WB asks participants to identify how they have been feeling only over the last two weeks. For instance, participants were asked to identify how much of the time "I've been feeling relaxed". This further differentiates the experiences described in the WB from the amended Mysticism Scale, which asks participants to identify a range of experiences that might have occurred at any time in their lives. The scale includes seven items that can be responded to on a five-point scale from (1) *None of the time* to (5) *All of the time.*

Environmental Behaviour

A number of possible measures of environmental behaviour were considered including the General Ecological Behaviour Scale (Kaiser, 1998), the Environmental Behaviour Questionnaire (Casey & Scott, 2006), and the Environmental Behavior Scale (Karp, 1996). Gatersleben, Steg, and Vlek (2002) comment on the importance

of distinguishing between intent and impact orientated scales of environmental behaviour. Intent orientated scales reflect the intention to act on environmental behaviours that appear significant from the individual's perspective, whereas impact orientated scales measure the actual environmental impact of behaviours. The authors note that intent orientated scales are only weakly correlated with those that are impact orientated, and recommend that more studies consider the actual environmental impacts of participant behaviours.

Casey and Scott's (2006) Environmental Behaviour Questionnaire (EBQ) reflects a mix of both intent and impact orientated items. Items on this scale were drawn from recommendations made on the Greenpeace Australia website in 2001, regarding recycling, consuming, and conserving behaviours. Although many of the behaviours included in the scale are impact orientated, such as electricity and aerosol use, they were also selected to be easily performable by anybody in their daily life. Some of the items therefore reflect behaviours that have a low impact on the environment but a high intention to engage in conservation behaviour, such as composting non-meat food scraps and refusing plastic bags. This scale was therefore deemed as an appropriate measure of participants' impact and intent-orientated environmental behaviours. The authors note that the original measure was piloted on a small group who gave feedback, based on which the scale was reduced to 17-items. In response to each item, participants respond how often they engage in each of these environmental behaviours on a 4-point Likert scale from (1) *never* to (4) *always*. For example, item four asks participants how often "I turn off the television when it is not in use."

Results

Preliminary Analysis

Preliminary analyses were performed to check the data for errors, normality, and outliers. Descriptive statistics including means, standard deviations, histograms, normal Q-Q plots, detrended normal Q-Q plots, and boxplots were calculated for each of the variables Contact with Nature (CN), Mysticism in Nature (MN), Mysticism in Human-Built Environments (MH), Environmental Behaviour Questionnaire (EBQ), and Psychological Well-Being (WB). Although box plots identified a number of outliers, comparison of means and trimmed means presented in Table 1 suggested that extreme scores had little influence on the mean score. Cronbach's alpha was also calculated for each scale, indicating that all scales apart from the CN scale had an acceptable level of internal reliability; this is common for scales that include few items, and the mean inter-item correlation of the CN scale was at an ideal level of r = .211 (Briggs & Cheek, 1986). An examination of the histogram plots suggested that the data was normally distributed for each variable apart from mysticism in nature. The skewed distribution of the MN scale suggested that many participants reported high levels of mystical experiences in natural environments. Whilst it would have been possible to transform the MN scale to achieve a normal distribution, the large sample size employed in the present study implied that violations in the assumption of normality were unlikely to cause a serious problem for parametric statistical analyses (Tabachnick & Fidell, 2013). It was also noted that 21 participants scored at the maximum level on the MN scale, indicating a possible ceiling effect that may have reduced the strength and significance of relationships with this measure.

(Table 1)

Hypothesis 1

A paired-sample t-test was conducted to evaluate the difference between scores for each participant on the MN and MH subscales. Participants reported significantly more mystical experiences in natural settings (M = 63.22, SD = 12.82) than in human-built environments (M = 52.33, SD = 13.68), $t(306) = 14.81$, $p < .001$ (two-tailed). A series of paired-sample t-tests comparing mean scores on each of the eight categories of mystical experience on the MN and MH subscales, presented in Table 2, revealed that participants rated each experience significantly higher in natural environments than in human-built environments, with all significance levels at $p < .001$ (two-tailed).

(Table 2)

Hypothesis 2 and 3

The relationship between mystical experiences in natural and human-built environments on psychological well-being and environmental behaviour was investigated using Pearson product-moment correlation coefficients. Correlations between all study variables are presented in Table 3. Preliminary analyses were performed to ensure no violation of the assumptions of linearity and homoscedasticity. There was a weak, positive correlation between mystical experiences in natural and human-built environments on psychological well-being. A

weak positive correlation was found between mystical experiences in natural, but not human-built, environments and environmental behaviour.

(Table 3)

Hypothesis 4

Hierarchical multiple regression was used to assess the ability of mystical experiences in nature to predict psychological well-being after controlling for the influence of contact with nature and demographic variables. For psychological well-being, the demographic variables and CN scale entered at Step 1 explained 11% of the variance in psychological well-being. After entry of the MN scale in Step 2, the total variance explained by the model as a whole was 12.3%, F (5, 301) = 8.46, $p \leq .001$. After controlling for demographic variables the MN scale explained an additional 1.3% of the variance in psychological well-being, F change (1, 301) = 4.45, $p = .036$. In the final model, age (*beta* = .23, $p \leq .001$), contact with nature (*beta* = .16, $p = .004$), and mysticism in nature (*beta* = .12, $p = .036$) were statistically significant.

Discussion

The aim of the present study was to contrast the outcomes of mystical experiences in natural and human-built environments, with results indicating that participants reported higher levels of mystical experiences in natural environments relative to human-built settings. Mystical experiences in natural and human-built environments significantly predicted psychological well-being, but only mystical

experiences in nature significantly predicted environmental behaviour. After accounting for demographic variables and contact with nature, mystical experiences in natural environments still significantly and independently predicted psychological well-being. These findings suggest that natural environments may be more likely to elicit stronger mystical experience relative to human-built settings, that mystical experiences in natural and human-built environments significantly predict psychological well-being, but only mystical experiences in nature predict environmental behaviour.

Participants in the present study reported significantly higher levels of mystical experiences in natural settings relative to human-built environments. This outcome is consistent with previous research, which suggests that natural environments, and features within these settings, can act as triggers of mystical experiences (DeMares, 2000; Fredrickson & Anderson, 1999; Williams & Harvey, 2001). As Kaplan and Kaplan (1989) note, natural environments may be more likely to allow for restorative experiences, where individuals are able to recover from stress, perhaps leading to a final stage of restoration where individuals report spiritual experiences. According to Attention-Restoration Theory, natural settings may be well-suited to elicit spiritual experiences because features of these environments draw attention without effort, provide a respite from typical day-to-day demands, allow for an experience of being in another world, and are often congruent with the desire for relaxation and contemplation. In contrast, features of common human-built settings may be more likely, on the whole, to demand effortful attention, to be the same environment in which day-to-day demands are met, and potentially conflict with the desire for relaxation and contemplation.

Mystical experiences in natural and human-built environments significantly predicted psychological well-being. This outcome is consistent with previous research, which indicates that spiritual experiences in general are predictive of positive psychological outcomes (Byrd et al., 2000; Hood, 1975; Underwood & Teresi, 2002), independent of religious involvement (Ellison & Fan, 2008). It is possible that these experiences, as Underwood and Teresi (2002) suggest, act as a buffer against stress. These experiences might also be conceptualized as significant restoration experiences that allow individuals to reflect on life, goals, possibilities, and priorities (Kaplan & Kaplan, 1989), in a way that results in long-term changes to psychological well-being. The present study also found that mystical experiences in nature significantly and independently predicted psychological well-being, even after controlling for the beneficial impacts of contact with nature. Of note, contact with nature was a stronger predictor of psychological well-being than mystical experiences in nature. This outcome is consistent with past studies that have shown a positive relationship between contact with nature and various mental health outcomes (Hansen-Ketchum & Halpenny, 2010; Maller et al., 2005). However, when mystical experiences do occur, these experiences predict higher levels of psychological well-being than contact with nature would normally suggest.

Only mystical experiences in nature significantly predicted environmental behaviour. This finding suggests that mystical experiences in nature predict different outcomes than mystical experiences in human-built environments. This may indicate that an experiential identification with the environment, which occurs as a component of mystical experiences in nature, can lead to a greater concern for the environment (Beyer, 2014). This interpretation is consistent with previous research, which suggests that an experience of connectivity or oneness with nature may be related to

environmental behaviour (Dutcher et al., 2007; Garfield et al., 2014; Guiney & Oberhauser, 2009; Hinds & Sparks, 2009). In contrast, it is possible that mystical experiences in human-built environments may predict a different set of behaviours resulting from an experiential identification with human environments.

These interpretations should be qualified in light of the limitations of the study. As a correlational study, the direction of relationships described cannot be ascertained, and it may be true, for instance, that psychological well-being predisposes towards mystical experiences. Future qualitative research may assist to determine the directionality of outcomes resulting from mystical experiences in different environments. The sample was somewhat younger, over represented females, students, psychologists, and non-religious, relative to Australian population norms. Additionally, the measurement of mystical experiences in natural and human-built environments with the adapted mysticism scale might create the overly-broad impression that all natural environments or human-built environments are well or poorly suited to elicit mystical experiences. The adapted measure does not account for specific built and natural environments, such as places of religious worship, which may be particularly well-suited for eliciting strong mystical experiences. The elimination of negatively worded items on the mysticism scale may also have led to a positive response bias and a ceiling effect on the mysticism in nature subscale. These issues could have limited the strength and significance of relationships with the mysticism in nature scale. Future research contrasting the qualities and outcomes of mystical experiences in a range of more specific environments would help to clarify whether mystical experiences have different outcomes depending on the environment in which they occur.

In summary, the present study suggests that mystical experiences in natural and human-built environments predict psychological well-being, but only mystical experiences in nature predict environmental behaviours. Research and literature in ecopsychology highlights the value of spiritual experiences in nature for improving psychological well-being and our relationship toward the natural world (Davis, 2013; Snell et al., 2011), which has been difficult to verify given conceptual and measurement difficulties. This is the first study to attempt to contrast the outcomes of mystical experiences in natural and human-built environments, and although the strength of relationships are small, it raises the possibility that there may be unique benefits associated with mystical experiences that occur in different environments.

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